

**Pennsylvania Academy of Family  
Physicians &  
WellSpan Health  
CME Conference**

**Post Conference Handout Collection**

**March 8-10, 2019**

**Wyndham**

**Gettysburg, Pennsylvania**

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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***A Multidisciplinary Approach to the Treatment of Autism and  
Intellectual Disability***

Michael Fueyo, MD

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation **WILL** include discussion of unapproved or investigational uses of products or devices.

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# A Multidisciplinary Approach to the Treatment of Autism and Intellectual Disability

Michael Fueyo, MD  
CADD-Center for Autism and Developmental Disabilities  
Wellspan Health



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## Learning Objectives

- Define the population of Autism Spectrum Disorders (ASD) and Intellectual Disability (ID)
- Screening and surveillance
- The multidisciplinary model of care
- What is your role and what is not!
- Resources



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## Autism Spectrum Disorder-DSM 5

- Persistent deficits in **social communication and social interaction** across multiple contexts
  - Deficits in social-emotional **reciprocity**
  - Deficits in **nonverbal communicative** behaviors used for social interaction
  - Deficits in developing and maintaining **relationships**
- **Restricted, repetitive** patterns of behavior, interests, or activities



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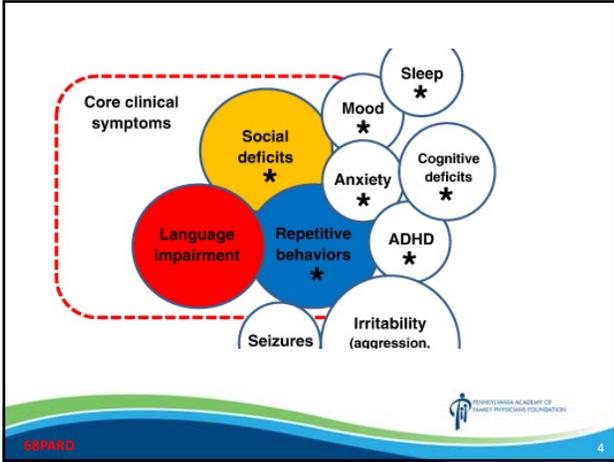
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## Intellectual Disability

- DSM-V
  - Deficits in **intellectual functioning** such as reasoning, problem solving, planning, abstract thinking, judgment and academic learning.
  - Deficits in **adaptive functioning** that result in failure to meet developmental and sociocultural standards for personal independence and responsibility.

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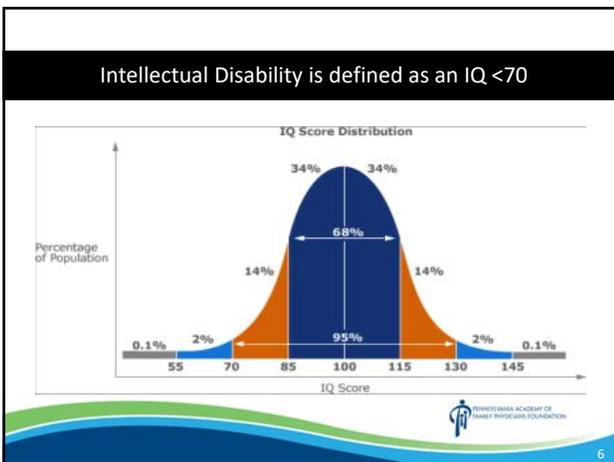
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# Adaptive Skills



PENNSYLVANIA ACADEMY OF  
FAMILY PHYSICIANS FOUNDATION

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## ASD/ID Facts

- Prevalence- ASD 1 in 59 / Intellectual Disability-1-3%  
Combined 3+%
- Co-morbid mental illness-70% / problematic behaviors-30%
- Almost 50% of children with ASD below average IQ, 30% with coexisting ASD/ID
- Recurrence risk for ASD 18-27% , 36-50% with more than one affected child
- ASD medical expenditures exceeded those w/o ASD by \$4,110-\$6,200 / year
- ASD is 4-5 times more prevalent in males than females

PENNSYLVANIA ACADEMY OF  
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## Etiology

- ASD
  - Genetics-90% concordance broader phenotypes in twin pairs
  - Environment-
    - UNKNOWN
    - Spacing between children
    - Advanced parental age
    - DDT exposure
- ID
  - Genetics
  - Pre-peri-postnatal causes
- Genetic Testing provides diagnostic yields of 15-30%

PENNSYLVANIA ACADEMY OF  
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## Screening

- AAP recommends screening for developmental delays at 9/18/24 or 30 month
- AAP recommends screening all children for ASD at 18 and 24 months
- Surveillance
- Screening tools:
  - Ages and Stages Questionnaires (ASQ)
  - Parents Evaluation of Developmental Status (PEDS)
  - Modified Checklist for Autism in Toddlers (MCHAT)



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## Developmental Surveillance

- Preterm birth, low birth weight,
- Sibling or parent with ASD
- Parental concern, inconsistent hearing, unusual responsiveness
- Other caregiver concern
- You are worried
  
- If **2 or more**, refer for **EI, Evaluation, and Audiology** simultaneously.
- If **1 and child at least 18 mos old**, use screening tool.
- When screen is positive, refer for EI, Evaluation, and Audiology



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- Regression
- "In his own world"
- Lack of showing, sharing interest or enjoyment
- Using the caregivers hands to obtain needs
- Repetitive movements with objects
- Lack of appropriate gaze
- Lack of response to name
- Unusual prosody/pitch of vocalizations
- Repetitive movements or posturing of body

Wetherby and Woods (2003)  
[esi.fsu.edu](http://esi.fsu.edu)



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## Developmental Screens

- **Ages and Stages Questionnaires (ASQ)**  
This is a general developmental screening tool. Parent-completed questionnaire; series of 19 age-specific questionnaires screening communication, gross motor, fine motor, problem-solving, and personal adaptive skills; results in a pass/fail score for domains.
- **Parents' Evaluation of Developmental Status (PEDS)**  
This is a general developmental screening tool. Parent-interview form; screens for developmental and behavioral problems needing further evaluation; single response form used for all ages; may be useful as a surveillance tool



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## Modified Checklist for Autism in Toddlers: MCHAT

- 16-48 months
- Sensitivity: 85% Specificity: 93%
- Questionnaire completed by parent
- 5-10 minutes to complete (parent)
- Simple Scoring
- Translated into 14 languages



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## The Multidisciplinary Team

- **CAREGIVER**
- **Primary Care Provider**
- **Psychiatry**-team leader, comorbid mental illness, pharmacologic interventions,
- **Social Work**-skill building, mental illness, family system, parenting, unresolved grief, advocacy, resources
- **Behavior Analysis(BCBA)**- teaching skills and reducing problematic behaviors, using observable data to analyze interventions and behavior
- **Psychology**-Diagnostic assessment and testing
- **OT/PT/SLT**
- **Medical subspecialty-Neuro/GI/Cardio/Genetics**



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## Vignette CADD

8 yowm with HF ASD. Family report that he is very difficult at home but better at school. He refuses to get ready in the am, breaks things and hits whenever parents have an expectation. He has many fears and no friends. He only wants to be on his tablet.

He refuses to speak with you and is under the chair. Doctor can you give him something?



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How most think of ASD/ID treatment

Medical

Environment

Learned Behavior



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How I want you to think of ASD/ID  
treatment

Medical

Environment

Learned  
Behavior



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The four common functions of behavior:  
 "Everybody E.A.T.S."  
 Escape, Attention,  
 Tangible, Sensory



someecards  
user card

**Learned Behavior**



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**Environment**  
 Accommodation vs expectations

- Home-family system, marital, SES
- School-classroom, peers, bullying
- Work
- Community




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**Medical**




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## How to examine the ASD/ID patient

- **Challenging** due to difficulties with social interaction, communication, and anxiety/rigidity
- The visit will take **twice as long** as a usual patient
- **Slow/smile/explain** -put everyone at ease
- **Ask the family /caregiver-** "Is it safe?" How should we do this? Pay attention to your discomfort.
- **Establish the parameters** that will allow the visit to go well.
- If necessary get the **behavioral team** involved-if possible desensitize over time to your care



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## Psychopharmacology

- Atypical antipsychotics:
  - Risperdal/Abilify-FDA approved ASD age 6-16, irritability
  - EKG/Chem panel/lipids
  - metabolic syndrome, gynecomastia, TD
- Guanfacine-FDA approved for ADHD 6-17
  - monitor pulse/BP/worsening of behavior
- SSRI-Celexa- (off label in children)-for anxiety less is better, depression tx as usual but go slow- monitor for worsening
- ADHD same as usual but start low go slow-monitor mood/appetite/irritability



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## Take Homes

- Be vigilant for these vulnerable patients
- Be clear about your role
  - Examine for the routine
  - Judicious use of meds-doing less is often more helpful
  - Learned behavior/environment-influence the conceptualization of care and refer



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### resources

- CADD-717-735-1920-pick up handouts
- CARD-Kennedy Krieger Institute-888-554-2018
- Wellspan network-staff sign up in LMS for CADD Autism training
- Leg Up Farm-York-717-266-9294
- UPMC- <https://www.upmc.com/services/behavioral-health/autism>
- HMC-717-531-8338, 717-782-6493
- Center for Autism Research (CAR) – <https://www.carautismroadmap.org/>
- Boston Children’s Hospital “My Hospital Story” – <http://www.childrenshospital.org/patient-resources/child-life-specialists/preparing-your-child-and-family-for-a-visit/my-hospital-story>
- Autism Speaks – <https://www.autismspeaks.org/>



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***Driving in the Elderly...When is the Right Time to Surrender  
that Driver's License?***

Timothy Pelkowski, MD

**Disclosures:**

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## DRIVING IN THE ELDERLY...

# WHEN IS THE RIGHT TIME TO SURRENDER THAT DRIVER'S LICENSE?

Timothy D. Pelkowski, MD



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## OR...

# THE PERSON WHO TAKES AWAY THE KEYS

Timothy D. Pelkowski, MD



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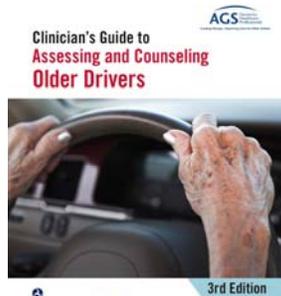
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## Questions

- How many have **struggled** with advising an older patient on driving?
- How many have **taken** a drivers license away?
- How many have **utilized** the 2016 American Geriatrics Society / National Highway Traffic Safety Administration "Clinician's Guide to Assessing and Counseling Older Drivers"?



American Geriatrics Society & A. Pender, Ed. (2016, January). Clinician's guide to assessing and counseling older drivers, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



STRUNG

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## Objectives

1. Review the safety risks of older drivers
2. Identify the risk factors for unsafe driving in older adults
3. Review the tools to assess older adults driving fitness
4. Discuss the management options of older adults with driving impairment

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## Limitations

- There is **NOT** vibrant evidence for these issues
- This is **NOT** the answer to every scenario – but I hope you come out of this with the framework for how to tackle these issues, this is not a rote script to follow
- This does **NOT** cover commercial motor vehicle driving in interstate commerce, that is subject to uniform federal regulation
  - Federal Motor Carrier Safety Administration
  - Department of Transportation physical examination conducted by a licensed medical examiner

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## Overview

- The number of **older** adult drivers is growing rapidly, and they are driving **longer distances**
- It is expected that **1 of every 4** licensed drivers will be an older adult (>65) by 2050, in addition to driving more miles than older drivers do today
- Motor vehicle crashes are the **2nd** most common cause of injury after falls
- Older adults have a **higher fatality rate** per mile driven than any other age group except drivers younger than 25
- Motor vehicle crashes are far more **harmful** for older adults than for all other age groups
- Older adults have increased **fragility** which leads to poorer outcomes

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Overview

- A survey of adults indicate that driving was the usual **method of transportation** for:
  - 85% age 75-79
  - 78% age 80-84
  - 60% >85
- It is estimated that the **average man will have 6 years without the ability to drive and the average woman 10 years**

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Overview

- Many older adult drivers **self-regulate** their driving behavior
  - Women are more likely to self regulate than men
  - Older drivers may reduce their mileage
- Older drivers are **more likely** to wear seat belts and are less likely to drive at night, speed, tailgate, consume alcohol before driving, or engage in other risk behaviors.
- **Despite** all of these self regulating measures, motor vehicle crash and fatality rates begin to increase in the elderly

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Overview

- The risk of crashes for older drivers is in part related to **physical, visual and/or mental changes** associated with aging and/or disease
- Crashes of older adults tend to be related to **inattention or slowed speed of visual processing**
- Driving cessation is **inevitable** for many and is often associated with **negative outcomes**
- Studies of driving cessation have noted increased **social isolation, decreased out of home activities, and increased depressive symptoms**

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 229). Washington, DC: National Highway Traffic Safety Administration.



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## Overview

- Assessing and managing potential driving disability can be **challenging and time consuming**, especially because it is often considered a personal rather than clinical issue.
- The challenge is in **balancing** the safety of older adults against their transportation needs and the safety of society.
- Many older adults **overestimate** their driving life expectancy – advance planning is key
- Physicians can help older drivers maintain safe driving skills
- Survey data has shown that older drivers feel their physicians should **advise them** on their fitness to drive
- There are still relatively **few** well-studied strategies that reliably predict driving outcomes for each individual.

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 229). Washington, DC: National Highway Traffic Safety Administration.



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## Objectives

1. Review the safety risks of older drivers
2. **Identify the risk factors for unsafe driving in older adults**
3. Review the tools to assess older adults driving fitness
4. Discuss the management options of older adults with driving impairment



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## LAUNDRY LIST:

“A long or exhaustive list of people or things.”



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## Is this older adult at increased risk of unsafe driving?

- **Observe** the older adult throughout the encounter
  - Sensory deprivation
  - Inattention or loss of insight regarding personal care
  - Impaired ambulation
  - Difficulty with way finding
  - Impaired attention, memory, language expression, or comprehension
  - Difficulties or lack of insight relating to managing medical encounters
- Be alert to conditions in the older adult's medical **history**, current medications and review of symptoms
- **Concern should be noted if caregivers will not drive with the individual or let others drive with him or her**
- Age alone is not a red flag! **Ageism...**

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Clinical Risk Factors for Impaired Driving

Risk Factor	Signs and Symptoms
<b>Physical capabilities</b>	History of falls Impaired ambulation Vision and/or hearing impairment Functional impairments with regard to use of gas or brake pedals Decreased ability to turn the head to fully visualize an area
<b>Cognitive ability</b>	Decreased short term memory Decreased or impaired way finding Easily distracted Inability to learn new information quickly Inability to recognize unsafe situations
<b>Driving ability</b>	Not using turn signals appropriately Difficulty turning the wheel and making turns Difficulty staying in the correct driving lane Difficulty judging the space between cars or upcoming exits Hitting curbs when parking or backing up Stopping in traffic inappropriately Not following stop signs, yield signs, traffic lights, etc. Not noticing workmen or activity on side of the road Inappropriate speeds for the weather/driving conditions History of traffic violations, minor crashes, or warnings

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Exploratory Questions About Driving

How did you get here today?
Do you drive?
How much do you drive?
Do you drive to the store? Hairdresser? Bank?
Do you drive at night?
Have you lost confidence in your ability to be a safe driver?

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Exploratory Questions About Driving

What would you do if you had to stop driving?
Are you comfortable when seated in your car?
Tell me about your ability to see signs when driving? To manage the steering wheel? To manage the foot pedals? To visualize the street signs? To visualize the traffic lights and signs?
Do you often get lost while driving?
Have you received any traffic violations or warnings in the past 2 years?
Have you had any accidents or near-accidents in the past 2 years?

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Questions for Caregivers If Concerns Are Raised

How often do you believe _____ drives?
Have you had an opportunity to ride with _____ in the past month?
Do you feel safe in the car when riding with _____?
Do you have any concerns about _____ driving ability?
If a patient presents a form from the licensing agency, the clinician should ask why they are being asked to submit the form.

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Health Risk Assessment Questions

Physical activity and diet history
Daily alcohol intake
Daily medications management concerns or use of sedating medications
History of falls
Use of seat belts

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Red Flags for Further Assessment

- Older adult driver or caregiver expressing a **concern**
- Recent motor vehicle **crashes**
- Recent motor vehicle **near crashes**
- Traffic **tickets**
- Instances of becoming **lost**
- Poor night **vision**
- **Forgetfulness**
- **Confusion**

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Acute Events

- Acute myocardial infarction
- Acute **stroke** or other traumatic brain injury
- Arrhythmia (e.g., atrial fibrillation, bradycardia)
- Lightheadedness, dizziness
- Orthostatic Hypotension
- Syncope or presyncope
- Vertigo
- Seizure
- Surgery
- Delirium from any cause
- New sedating medications or those that can cause confusion or dizziness

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Medications

Anticholinergics	Antipsychotics
Anticonvulsants	Benzodiazepines and other sedatives/anxiolytics
Antidepressants	Muscle relaxants
Antiemetics	Narcotic analgesics
Antihistamines	Hypnotics
Antihypertensives	Other agents with anticholinergic side effects
Antiparkinsonian agents	

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Chronic Medical Conditions that May Impact Driving

Medical Condition	Examples
<b>Disease/conditions affecting vision</b>	Cataracts Diabetic retinopathy Macular degeneration Glaucoma Retinitis pigmentosa Field cuts Low visual acuity even after correction
<b>Cardiovascular disease, especially when associated with presyncope, syncope, or cognitive deficits</b>	Unstable coronary syndrome Arrhythmia Palpitations Congestive heart failure Hypertrophic obstructive cardiomyopathy Valvular disease

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Chronic Medical Conditions that May Impact Driving

Medical Condition	Examples
<b>Neurologic disease</b>	Dementia Multiple sclerosis Parkinson disease Peripheral neuropathy Brain injury Spinal cord injury
<b>Psychiatric disease</b>	Mood disorders Depression Anxiety disorders Psychotic illness Personality disorders Alcohol or other substance abuse

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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# Organ Systems and Symptoms

Organ System	"Red Flag" Symptoms
Neurologic	Loss of consciousness Faintness Seizures Weakness Paralysis Tremors Loss of sensation Numbness Tingling
Psychiatric	Depression Anxiety Changes in memory and ability to recall recent events, confusion, psychosis, mania, or difficulty with work finding, way finding, decision making, or concentration

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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# Assessment

- When exploring driving ability, it is very useful to also **Speak with a caregiver** to confirm what the older adult has stated
- Even if alternative transportation options are not needed at this point, it is wise for older adults to **plan ahead** in case it becomes necessary

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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# Objectives

1. Review the safety risks of older drivers
2. Identify the risk factors for unsafe driving in older adults
3. Review the tools to assess older adults driving fitness
4. Discuss the management options of older adults with driving impairment



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## Cognition

- Cognitive assessment includes functional assessments of:
  - Memory
  - Visual perception/Processing
  - Attention
  - Executive function
  - Language
  - Insight
- Cognitive assessment tools:
  - Montreal Cognitive Assessment (MoCA)
  - Trails A/B Test
  - Clock-Drawing Test
  - Maze Test

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Motor and Somatosensory Evaluation

- Endurance
- Functional Range of Motion
- Proprioception
- Rapid Pace Walk
- Walk 10 feet, turn around, and walk back
  - Should take under 9 seconds
- Get Up and Go
- Sit in chair, stand up and walk 10 feet, turn around, come back and then sit down again
  - Scoring on 1-5 scale
  - More associated with fall risk
- Functional Range of Motion Exam
  - Neck rotation
  - Shoulder and elbow flexion
  - Finger curl
  - Ankle plantar flexion
  - Ankle dorsiflexion

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Self-Assessment Tools

- Am I a Safe Driver?
- The Driving Decisions Workbook
- Fitness to Drive Screening Measure
- SAFER Driving Survey
- Roadwise Review

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## General

- Driving history
- IADLs questionnaire
- Medication changes

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## Patient and Caregiver Educational Material

- Am I a Safe Driver?
- Getting by Without Driving
- How to Assist the Older Driver
- NHTSA's How to Understand and Influence Older Drivers
- Ten Tips to Aging Well
- Tips for Safe Driving

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## Clinical Assessment of Driving Related Skills (CADReS)

1. Visual fields by confrontation testing
2. Snellen E chart
3. Rapid Pace Walk and/or Get Up and Go
4. Functional Range of Motion
5. Maze test
6. Montreal Cognitive Assessment (MoCA)
7. Trail-Making Test, Part A then Part B
8. Clock-Drawing Test

- You do not need to do each of these
- There is no single tool present that should be used to determine fitness to drive

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## Clinical Interventions

- The CADReS toolbox is useful when supporting an in-office assessment, but it **does not evaluate the older adult's performance in the actual driving task**
- Results, even if abnormal, are **not sufficient to recommend driving cessation, EXCEPT** for vision and moderate/severe cognitive impairment; for these situations DRS is needed

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Objectives

1. Review the safety risks of older drivers
2. Identify the risk factors for unsafe driving in older adults
3. Review the tools to assess older adults driving fitness
4. **Discuss the management options of older adults with driving impairment**



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## Screening and Assessment of Functional Abilities for Driving

- Goal is to **optimize** the ability of older adults to continue driving safely for as long as possible
- The clinical team may detect problems that:
  - Allow early intervention and may **prevent** disability and prolong driving ability
  - Identify impairments that can be **remediated**
  - Identify strategies to **compensate** for a medical condition
  - Plan for the timely **transition to alternative means** of transport
- Primary prevention – addresses issues to prevent the loss of driving ability
- Secondary prevention – attempts to remediate any loss of driving skills that have already occurred as well as to prevent further loss of driving ability

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Clinical Interventions

- The goal of the clinical evaluation is to identify, correct, or stabilize any functional deficits that may impair the older adult's driving performance and to consider referral to a **Driver Rehab Specialist (DRS)** if appropriate
- **Screening for visual field cuts** is important, many are unaware until it becomes quite significant
- Failure to pass any measure of cognition should elicit **referral**; OT, speech language pathologist, neuropsychologists, DRS, others
- If the only problems are with motor and/or somatosensory areas, these individuals should be referred to DRS to consider **adaptive equipment**

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Copilot Phenomenon

- The **copilot phenomenon**
  - Avoid this scenario
  - Should likely not be driving

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Driver Rehabilitation Specialist (DRS)

- DRS is an excellent **resource** to explore solutions supporting continuing driving
- DRS can perform a **comprehensive driving evaluation** that includes in depth clinical assessment of functional abilities plus an on-road driving assessment
- These are often **occupational therapists** who have additional training in driver rehabilitation
- Can come from other backgrounds as well
- Two **national associations** offer certification in driver rehabilitation
  - Association for Driver Rehabilitation Specialists
  - American Occupational Therapy Association (AOTA) offers Specialty Certification in Driving and Community Mobility (SCDCM)
- In most States **certification is not required** to practice driver rehabilitation

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Driver Rehabilitation Specialist (DRS)

- DRS develops a summary of the evaluation **results** and an individualized **plan** for safe mobility, which may include any of the following:
  - A recommendation for **continued driving** with or without restrictions
  - An interval recommendation for **reevaluation** because of progressive conditions and may include a driving cessation plan
  - Intervention to **restore** abilities
  - **Adaptive** techniques or the use of devices to compensate for functional deficits
  - A recommendation for the older adult driver to **cease driving with a plan to explore resources**

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Driver Rehabilitation Specialist (DRS)

- Clinical Driving Evaluation
  - Clinical assessment
  - On road evaluation
  - Communication of assessment results and recommendations
- Passenger Vehicle Evaluation
- Treatment and Intervention
- A comprehensive driving evaluation can last 1-4 hours followed by an on road evaluation
- Three main levels of DRS programs
  - Basic
  - Low tech
  - High tech

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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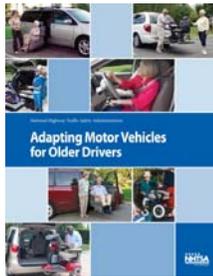
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## Adapting Motor Vehicles



American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counselling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Adapting Motor Vehicles



Button Mirror



Easy Reach



Handy Bar



Key Holder

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Adapting Motor Vehicles



Left Foot Accelerator \$400 - \$500



Leg Lifter



Pedal Extender



Steering Knob \$75 - \$100

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Driver Rehabilitation Specialist (DRS)

- **Cost:** \$300 - \$600 for a full assessment and \$125 per hour for rehabilitation
- **When driver assessment is not an option**
  - Some may be willing to travel for this
  - Remember to advocate for these in your area
  - Most OTs can assist in general
  - Driver specialists at high schools
  - Input from geriatricians, neurologists, psychiatrists, or neuropsychologists can be considered
- State driving assessment

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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# Mobility Evaluation Report



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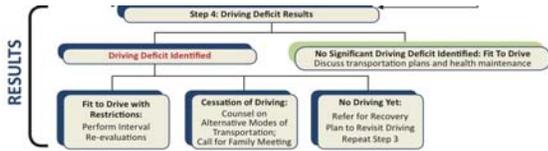
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# Plan for Older Drivers' Safety (PODS)



American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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# Advising the Older Driver

- Proactively/annually screen frail older adults for driving safety
  - Medicare Annual Wellness Visit
- **Advanced planning for driving cessation** – anticipate and prepare for driving cessation
- An ethical responsibility to protect the safety of the older adult as well as that of the public

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Advising the Older Driver

- Begin with the older adult's **perspective**
  - Self perceived driving skills
  - One survey of those older than 65 found that 1 in 10 noted that they would stop driving at no time
- Assess family/caregiver **readiness for mobility transition**
  - Caregiver support and involvement is essential
- Utilize a clinical **team**
  - Different knowledge and skills can be brought to bear
  - Develop clinical team communication

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Advising the Older Driver

- Explain the importance of driving cessation
- **Clear explanation and statement**
- Review the potential risks of driving
- Appropriate to review what would happen if they caused a crash
- Review issues related to injury, public safety, and financial liability
- **Place this in writing and provide a copy to the patient**
- If the individual lacks decision-making capacity a copy should be given to the family or caregiver
- **Acknowledge their feelings** if upset or angry
- Remain **firm** with the recommendation
- Engaging in disputes or long explanations should be avoided

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Advising the Older Driver

- Discuss transportation options
- **Driving cessation has been associated with a decrease in social engagement, depression, anxiety, and long-term care placement**
- Transportation plan: Beverly Foundation's dementia friendliness calculator based on the **5 A's of transportation** when searching for services
  - Availability
  - Acceptability
  - Accessibility
  - Adaptability
  - Affordability
- Transportation **alternatives**
  - Walking
  - Train/subway
  - Bus
  - Taxi/Uber-like services
  - Family and friends
  - Community transportation services
  - Hospital shuttles
  - Medi-car
  - Delivery services
  - Volunteer drivers
  - Private for-profit senior care services

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Advising the Older Driver

- **Follow-up** with the older driver
- **Reinforce** driving cessation and the older adult's ability to comply
- Transportation **resources** and evaluating the viability of the chosen options
- Signs of **isolation or depression**
- Signs of **neglect or self-neglect** in older adults
  - An injury that has not been properly treated
  - Symptoms of dehydration and/or malnourishment
  - Weight loss
  - Soiled clothing
  - Recurrent falls with or without injuries
  - Evidence of inadequate or inappropriate admin of meds
  - Spoiled or outdated food in the refrigerator
  - Loss of income from difficulty with finances

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Advising the Older Driver

### Dear Mr. Phillips:

I am writing to follow-up on your **clinic visit** of December 1, 2016. You'll recall we talked about your driving safety. I tested your vision, strength, movement, and thinking skills, and reviewed your health problems and medicines. I recommend you stop driving because of your poor vision, muscle weakness, and slowed reaction time.

I know that driving is important to you, and I know it is hard to give up. But your safety is more important. To **help you get around**, your son and your friends have offered to help you. You can also use the special bus in your neighborhood. The handout *How to Assist the Older Driver* (enclosed) has some other ideas we talked about. I am also sending a copy of these materials to your son so that you two can discuss the plan together.

I want to make sure you can still visit your friends and go other places without a car. It is important for you to maintain your connection with the community. Please **see me again** in one month – we will talk about how this plan is working for you.

As we discussed, the State of Pennsylvania requires me to notify the State licensing agency of people who have medical conditions that might affect driving safety. Because I am required by law to do this, I have given your name to the Pennsylvania **licensing agency**. The licensing agency will send you a letter in a few weeks to discuss your driver's license.

Please call my office if you have any questions. I look forward to seeing you next month.

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Ethical and Legal Issues

- **Inform** the patient of notice to the State licensing agency
- **Document** diligently
  - Any direct observations of the patient's functional status
  - Red flags in driving history
  - Any counseling specific to driving
  - Formal assessment of the patient's driving related functions
  - Any medical interventions and referrals made to improve the patient's function
  - A copy of the DRS report if done
  - The physician's recommendation on patient driving
  - Note if reported to State licensing agencies
  - Follow-up for degree of success in using alternative transportation

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## General Recommendations

- **Treat** the underlying medical condition and/or functional deficit to improve the condition/impairment or limit progression.
- If the functional deficit is due to an identifiable offending agent (e.g., medication with PDI effects), **remove the offending agent or reduce the dose**, if possible.
- If the functional deficit can be addressed through compensation or **modification** (e.g., hand controls, left foot accelerator), refer for a comprehensive driving evaluation.
- **Advise** the older adult about the risks to his or her driving safety, consider referral for assessment of driving performance, recommend driving restrictions or driving cessation as needed, and document the discussion in the health record.
- For acute or episodic illnesses (e.g., seizure disorder and/or diabetes with hypoglycemia), **clinical judgment and subspecialist input** is recommended, in addition to following specific State statutes.

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Reference Tables of Medical Conditions

- Vision and Hearing Loss
- Cardiovascular Disorders
- Cerebrovascular Disorders
- Neurologic Disorders
- Psychiatric Disorders
- Metabolic Disorders
- Musculoskeletal Disorders
- Peripheral Vascular Disorders
- Renal Disorders
- Respiratory and Sleep Disorders
- Effects of Anesthesia and Surgery
- Cancer
- Medications

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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## Clinical Team Resources

- **Clinical Assessment of Driving Related Skills (CADReS) Score**
- **Modified Driving Habits Questionnaire**
- Montreal Cognitive Assessment (MoCA) Form
- Motor Vehicle Adaptive Equipment Descriptions and NHTSA's Adapting Motor Vehicles for Older Drivers brochure
- Sample Driving Cessation Plan
- Snellen Chart
- Snellgrove Maze Test and Form
- Three Levels of Spectrum of Driver Services
- Trails A Test
- Trails B Test

American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers*, 3rd edition. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.



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# SUPPLEMENTAL SLIDES



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# American Medical Association



## Impaired Drivers & Their Physicians

Physicians have unique opportunities to assess the impact of physical and mental conditions on patients' ability to drive safely.

### Code of Medical Ethics Opinion 8.2

A variety of medical conditions can impact an individual's ability to operate a motor vehicle safely, whether a personal car or truck or a commercial vehicle, such as a bus, train, plane, or commercial vessel. These vehicles operate a vehicle when engaged by a medical condition pose threats to both public safety and have seen and being. Physicians have unique opportunities to assess the impact of physical and mental conditions on patients' ability to drive safely and have a responsibility to do so in light of their professional obligations to



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# Diabetes and Driving

Diabetes Care. Source: 37, Supplement 1, article 812

## Diabetes and Driving

American Diabetes Association

Of the nearly 29 million people in the U.S. with diagnosed diabetes (1), a large percentage of and an especially high percentage of those for whom it is essential to work, taking care of family, securing access to public and private facilities, services, and institutions. Operating a motor vehicle, whether a personal car or truck or a commercial vehicle, such as a bus, train, plane, or commercial vessel, is the only for the only mode of transportation for many individuals.

There has been considerable debate whether, and the extent to which, diabetes can be a reason to restrict or deny a driver's license. In response to this question, the American Diabetes Association has issued a position statement addressing such issues in light of current scientific and medical evidence.

Scientific research with a strong interest in road safety, including motor vehicle administration, conditions, driving, other road users, and emergency response, all indicate that people with diabetes can drive safely. However, there are some situations in which a person with diabetes may not be able to drive safely. It is the responsibility of the physician to assess and, when appropriate, to advise the patient about the impact of physical and mental conditions on patients' ability to drive safely and have a responsibility to do so in light of their professional obligations to

This document provides an overview of existing licensing rules for people with diabetes, addresses the factors that impact driving for the physician, and describes general guidelines for assessing driver fitness and determining appropriate licensing restrictions.



American Diabetes Association, Lobern D, Anderson J, Arent S, Cox DJ, Frier BM, Greene MA, Griffin J Jr, Gross G, Hathaway K, Hirsch I, Kitzman DB, Marrero DG, Songer TJ, Yalvin AL. Diabetes and driving. Diabetes Care. 2014 Jan;37 Suppl 1:1597-1603. PubMed PMID: 24357217.



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## Diabetes and Driving

- Diabetic conditions can impact driving safely
  - **Severe hypoglycemia** – low blood glucose resulting in neuroglycopenia, require the assistance of another
  - **Retinopathy or cataract** formation
  - **Neuropathy** affecting the ability to feel foot pedals

American Diabetes Association, Lurie D, Anderson J, Arent S, Cox DJ, Frager BM, Gleisner MA, Griffin J Jr, Gross S, Hathaway K, Hirsch I, Kohnman SB, Marrero DG, Sotgiu FJ, Yavin AL. Diabetes and driving. *Diabetes Care*. 2014 Jan;37(Suppl 1):S97-103. PubMed PMID: 24337217.



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## PennDOT: Diabetes and Driving



Reporting Drivers with Diabetes Mellitus to PennDOT  
Frequently Asked Questions

November 2011



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## PennDOT: Driver & Vehicle Services

- **Pennsylvania Department of Transportation**

Bureau of Driver Licensing  
Driver Qualifications Section  
PO Box 68682  
Harrisburg, PA 17106-8682  
717-787-9662

- <http://www.dmv.state.pa.us/centers/olderDriverCenter.shtml>



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## PennDOT: Reporting

- Must **report within 10 days in writing**
  - Written letter
  - Initial Report Form (DL-13)
  - Condition specific medical forms
- Include the name, address, and date of birth
- Include the conditions and any specific information about the condition
- **PennDOT on a quarterly fashion will pull older adult drivers for a general form to be completed by their physician indicating okay for them to still drive**



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## PennDOT: Initial Reporting Form (DL13)



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## PennDOT: Reporting Forms

PennDOT Form #	PennDOT Form Title
<b>DL-13</b>	<b>Initial Reporting Form</b>
DL-102	Report of Eye Examination
DL-104	General Psychiatric Form
DL-120	Cardiovascular Form
DL-121	Seizure Reporting Form
DL-122	Diabetic Form
DL-123	General Medical Form
DL-124	General Neurological Form
DL-126	Orthopedic Form
DL-128	Substance Use Form
DL-129	Loss of Consciousness And/Or Awareness Form
DL-131	Cognitive Impairment Form



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## References

- American Geriatrics Society & A. Pomidor, Ed. (2016, January). *Clinician's guide to assessing and counseling older drivers, 3<sup>rd</sup> edition*. (Report No. DOT HS 812 228). Washington, DC: National Highway Traffic Safety Administration.
- American Diabetes Association, Lorber D, Anderson J, Arent S, Cox DJ, Frier BM, Greene MA, Griffin J Jr, Gross G, Hathaway K, Hirsch I, Kohrman DB, Marrero DG, Songer TJ, Yatvin AL. **Diabetes and driving**. Diabetes Care. 2014 Jan;37 Suppl 1:S97-103. PubMed PMID: 24357217.
- Iverson DJ, Gronseth GS, Reger MA, Classen S, Dubinsky RM, Rizzo M; Quality Standards Subcommittee of the **American Academy of Neurology**. Practice parameter update: evaluation and management of driving risk in dementia: report of the Quality Standards Subcommittee of the American Academy of Neurology. Neurology. 2010 Apr 20;74(16):1316-24. PubMed PMID: 20385882.
- Koncilja K, Messenger-Rapport BJ, Syed Q. **Q: when should I discuss driving with my older patients?** Cleve Clin J Med. 2015 Jan;82(1):22-5. PubMed PMID: 25552623.
- PennDOT. <http://www.dmv.state.pa.us/centers/olderDriverCenter.shtml>. Accessed February 2019.



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## Questions?

**Thanks!**

Tim Pelkowski, MD

[Timothy.Pelkowski@ahn.org](mailto:Timothy.Pelkowski@ahn.org)



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***The Challenge of Managing ASCVD Risk: Redefining the  
Role of Non-Statins Therapies***

Paul Doghramji, MD

**Disclosures:**

The speaker has financial agreement, or working affiliation with Ironwood, Jazz, Alkermes, Harmony, Merck, and Pfizer.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**



# The Role of Non-Statins Therapies for LDL-C Lowering for Management of ASCVD Risk in Family Practice

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## Faculty

Chair

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## Disclosures

**Michael Cobble, MD, FNLA**, has the following relevant financial relationships with commercial interests to disclose:

Consultant – Kowa

Speakers Bureau: Amarin, Amgen, AstraZeneca, Kowa, Sanofi

**Louis Kuritzky, MD**, has the following relevant financial relationships with commercial interests to disclose:

Consultant – Amgen

**Stephen A. Brunton, MD; Paul P. Doghramji, MD, FAAFP; and Penny Tenzer, MD**, do not have any relevant financial relationships with commercial interests to disclose.

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## Credit

This Live activity, Redefining the Role of Non-statin Therapies for LDL-C Lowering: Management of ASCVD Risk in Family Practice, from 11/09/2018 - 11/08/2019, has been reviewed and is acceptable for up to 1.00 Prescribed credit(s) by the American Academy of Family Physicians. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

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## Educational Objectives

Upon completion of this activity, learners should be able to:

1. **SUMMARIZE** the latest guidelines and recommendations on cholesterol management from major clinical organizations
2. **REVIEW** potential cholesterol-lowering therapies beyond statins and explain when these non-statin therapies should be considered
3. **STATE** the indications in detail for proprotein convertase subtilisin kexin type 9 inhibitor (PCSK9i) therapy

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## Pre-test Question 1

The National Lipid Association (NLA) published recommendations for patient-centered management of dyslipidemia in 2015. Those recommendations propose treatment goals for non-HDL-C and LDL-C based on 4 risk categories: Low, Moderate, High, and Very High. Treatment goals for the Low, Moderate, and High risk categories are the same. Which of the following represents the NLA treatment goals for LDL-C?

- A. Low, Moderate, High: <70 mg/mL; Very High: <70 mg/mL
- B. Low, Moderate, High: <70 mg/mL; Very High: <100 mg/mL
- C. Low, Moderate, High: <100 mg/mL; Very High: <100 mg/mL
- D. Low, Moderate, High: <100 mg/mL; Very High: <70 mg/mL



## Pre-test Question 2

Statin and non-statin combination therapy may improve lipid-lowering efficacy and may improve cardiovascular outcomes. Which of the following combination therapies was studied in the IMPROVE-IT trial and demonstrated reductions in cardiovascular outcomes?

- A. Colestipol and simvastatin
- B. Ezetimibe and simvastatin
- C. Evolocumab and simvastatin
- D. Lomitapide and simvastatin





## Pre-test Question 3

**Which of the following is TRUE regarding indications for PCSK9 inhibitors?**

- A. Alirocumab is approved for either monotherapy or combination therapy for patients with heterozygous familial hypercholesterolemia (HeFH), homozygous familial hypercholesterolemia (HoFH), or clinical atherosclerotic cardiovascular disease (ASCVD).
- B. Alirocumab is approved for combination therapy with a maximally tolerated statin for patients with HeFH, HoFH, or clinical ASCVD.
- C. Evolocumab is indicated to reduce the risk of myocardial infarction, stroke, and coronary revascularization in adults with established CVD.
- D. Evolocumab is just approved for combination therapy for patients with HeFH or clinical ASCVD.



## Pre-test Question 4

**BN is a 27-year-old woman diagnosed at age 13 years with HoFH. Current lipid medications are lovastatin, colesvelam, and ezetimibe. BN adheres to a healthy lifestyle with a low-fat diet and regular exercise. However, BN's LDL-C levels remain high with the most recent level of 213 mg/dL. With the HoFH diagnosis, her family history of cardiovascular disease, and the recent increase in LDL-C despite high-dose lipid-lowering drugs, BN asks her physician about the new PCSK9 inhibitors. Which of the following would be an appropriate treatment option for BN?**

- A. Alirocumab 75 mg subcutaneously biweekly (2x/month)
- B. Alirocumab 300 mg subcutaneously q4 weeks
- C. Evolocumab 300 mg subcutaneously q4 weeks
- D. Evolocumab 420 mg subcutaneously q4 weeks



## Case Study

- Mark B, a 54-year-old man with familial hypercholesterolemia (FH)
  - BMI: 31.7
  - On treatment LDL-C:  $\approx$ 220 mg/dL
  - Smoking: 1 pack/day
  - Typical American diet
  - Exercise: walking  $\approx$ 30 minutes, 1 or 2 days/week
  - Meds: atorvastatin 80 mg qd, lisinopril 20 mg qd



What recommendations for the patient?



## Cardiovascular Disease and Hyperlipidemia

- Atherosclerotic cardiovascular disease (ASCVD) is the leading cause of morbidity and mortality in the United States
  - Responsible for 1 of 7 deaths
  - Hyperlipidemia is a major ASCVD risk factor
- Statins are recommended as first-line drug therapy for lowering LDL-C
  - 30% of patients do not achieve lipid-lowering goals, even with maximum statin doses

Benjamin EJ, et al; American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation*. 2017;135(10):e146-e603; Della Badia LA, et al. *Pharmacol Ther*. 2016;164:183-194; George M, et al. *J Cardiovasc Pharmacol Ther*. 2015;20(1):11-20.





## Familial Hypercholesterolemia (FH)

- Inherit a pathogenic variant in 1 of the key genes involved in lipoprotein metabolism: *APOB*, *LDLR*, or *PCSK9*
- Heterozygous familial hypercholesterolemia (HeFH)
  - Prevalence may be up to 1 of 200 individuals
- Homozygous familial hypercholesterolemia (HoFH)
  - Prevalence rate of up to 1 of 300,000 individuals
- Treatment of HeFH or HoFH typically requires additional pharmacotherapy measures and/or LDL apheresis treatments

Youngblom E, et al. Familial hypercholesterolemia. In: Adam MP, et al, eds. *GeneReviews*. Seattle, WA: University of Washington, Seattle; 2018. [www.ncbi.nlm.nih.gov/books/NBK174884](http://www.ncbi.nlm.nih.gov/books/NBK174884); Levenson AE, et al. Familial hypercholesterolemia. In: De Groot LJ, et al, eds. *Endotext*. South Dartmouth, MA: MDText.com, Inc; 2018. [www.ncbi.nlm.nih.gov/books/NBK395572](http://www.ncbi.nlm.nih.gov/books/NBK395572); Santos RD, et al; International Atherosclerosis Society Severe Familial Hypercholesterolemia Panel. *Lancet Diabetes Endocrinol*. 2016;4(10):850-861.



## FH in Children

- Early diagnosis and treatment can result in normal life expectancy
  - Distinguish FH from non-FH via LDL-C screening in childhood
    - Phenotypic diagnosis: LDL-C  $\geq 190$  mg/dL, or an LDL-C  $\geq 160$  mg/dL with family history of premature coronary heart disease and/or high baseline cholesterol in 1 parent
    - If a parent has a genetic defect, the LDL-C cut-off for the child is  $\geq 130$  mg/dL
  - Healthy lifestyle and statin treatment (from age 8–10 years) are the foundations of therapy
    - Target LDL-C:  $< 130$  mg/dL if  $> 10$  years old
- OR**
- 50% reduction from baseline if 8–10 years old

Wiegman A, et al; European Atherosclerosis Society Consensus Panel. *Eur Heart J*. 2015;36(36):2425-2437.



## How Do I Know When My Patient Has FH? (USA: MEDPED Criteria)

Age (years)	Total cholesterol (and LDL-C) levels, mg/dL				Risk
	1st-degree relative	2nd-degree relative	3rd-degree relative	General population	
<18	220 (155)	230 (165)	240 (170)	270 (200)	
20	240 (170)	250 (180)	260 (185)	290 (220)	98% specificity
30	270 (190)	280 (200)	290 (210)	340 (240)	87% sensitivity
≥40	290 (205)	300 (215)	310 (225)	360 (260)	

Hovingh GK, et al. *Eur Heart J*. 2013;34(13):962-971; Fahed AC, Nemer GM. *Nutr Metab (Lond)*. 2011;8(1):23.



## Lipid Guidelines/Recommendations

### American Heart Association/American College of Cardiology (AHA/ACC)

- 2013 Cholesterol Management Guidelines
- 2016 ACC Expert Consensus Decision Pathway on the Role of Non-Statins Therapies for LDL-Cholesterol Lowering in the Management of Atherosclerotic Cardiovascular Disease Risk
- 2017 Focused Update of 2016 ACC Expert Consensus on the Role of Non-statin Therapies for Low-density Lipoprotein Cholesterol (LDL-C) Lowering in the Management of Atherosclerotic Cardiovascular Disease Risk
- 2018 ACC/AHA Multi-society Guideline on the Management of Blood Cholesterol

Stone NJ, et al; ACC/AHA Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2014;63(25):2889-2934; Lloyd-Jones DM, et al. *J Am Coll Cardiol*. 2016;68(1):92-125; Lloyd-Jones DM, et al. *J Am Coll Cardiol*. 2017;70(14):1785-1822; Grundy SM, et al. *J Am Coll Cardiol*. 2018; Nov 8.



## Lipid Guidelines/Recommendations

### National Lipid Association (NLA)

- 2015 Dyslipidemia Management Recommendations, Parts 1 and 2
- 2017 Recommendations of the NLA Expert Panel on Treatment with PCSK9i
- 2018 Guideline on the Treatment of High Blood Cholesterol

Jacobson TA, et al. *J Clin Lipidol*. 2015;9(6):S1-S122.e1. National Lipid Association 2019.



## 2013 AHA/ACC Guidelines and 2016/2017/2018 ACC Updates

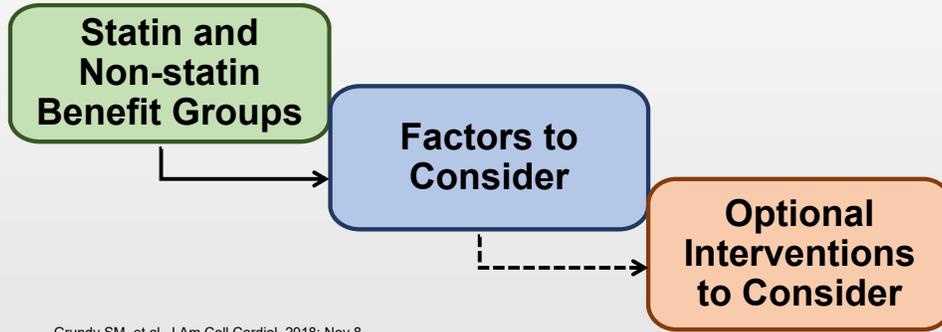
1. Heart-healthy lifestyle habits
2. Appropriate intensity of statin therapy [based on ASCVD risk](#)
  - 5 treatment benefit groups
  - Add-on non-statin therapy in very high risk ASCVD
3. Regularly monitor adherence to lifestyle and drug therapy
4. In cases of statin intolerance, use the maximally tolerated intensity of statin (which may be 0)
5. In patients 40-75 years of age being evaluated for primary ASCVD prevention, discuss statin therapy



Stone NJ, et al; ACC/AHA Task Force on Practice Guidelines. *J Am Coll Cardiol*. 2014;63(25):2889-2934; Lloyd-Jones DM, et al. *J Am Coll Cardiol*. 2016;68(1):92-125; Lloyd-Jones DM, et al. *J Am Coll Cardiol*. 2017;70(14):1785-1822. Grundy SM, et al. *J Am Coll Cardiol*. 2018; Nov 8.



## 2018 AHA/ACC Cholesterol Treatment Guidelines



Grundt SM, et al. J Am Coll Cardiol. 2018; Nov 8.



## 2018 AHA/ACC: Treatment Benefit Groups

- 1 Patients  $\geq 21$  years of age **with ASCVD**, reduce LDL-C with high-intensity statin therapy or maximally tolerated dose
- 2 Patients  $\geq 21$  years of age with **very high risk ASCVD** use LDL-C threshold of 70 mg/dL to **consider adding non-statin to statin therapy**
- 3 Patients  $\geq 21$  years of age with **severe FH, baseline LDL-C  $\geq 190$  mg/dL** without calculating 10-year ASCVD risk, begin high-intensity statin therapy
- 4 Patients ages 40–75 years of age **with diabetes and LDL-C  $\geq 70$  mg/dL** start moderate-intensity statin without calculating 10-year ASCVD risk
- 5 Patients 40–75 years of age **without diabetes with LDL-C  $\geq 70$  mg/dL** with a 10-year ASCVD risk of:
  - $\geq 7.5\%$  discuss treatment options, start moderate-intensity statin, if favored
  - $>7.5\%$  - **19.9%** risk enhancing factors favor starting statin; If statin decision is uncertain measure coronary artery calcium (CAC)

Grundt SM, et al. J Am Coll Cardiol. 2018; Nov 8.





## 2018 AHA/ACC: Factors to Consider

- Adherence and lifestyle
- Statin-associated side effects
- Control of other risk factors
- Clinician–patient discussion regarding potential benefits, potential harms, and patient preferences regarding addition of non-statin medications
- Percentage LDL-C reduction (may consider absolute LDL-C level achieved)
- Monitoring of response to therapy, adherence, and lifestyle

Grundy SM, et al. J Am Coll Cardiol. 2018; Nov 8.



## 2018 ACC: Optional Interventions

- Referral to lipid specialist and registered dietitian or nutritionist
- Ezetimibe
- Bile acid sequestrants
- PCSK9 inhibitors
- Mipomersen, lomitapide, and/or LDL apheresis may be considered by a lipid specialist for patients with FH

Grundy SM, et al. J Am Coll Cardiol. 2018; Nov 8.



## Audience Question Statin-Associated Side Effects

- What are some common causes of statin intolerance?
- Is it feasible and clinically appropriate to use statins in patients with statin intolerance?



## Statin-Associated Side Effects

- Along with lifestyle changes, statins are the foundational drug class for treatment of hyperlipidemia
- Adverse effects, particularly myalgia, may limit the application of statins in some populations
- In other patients, statins may not achieve lipid reduction goals
- Alternative therapies may be required to achieve lipid reduction goals



Della Badia LA, et al. *Pharmacol Ther.* 2016;164:183-194; Jacobson TA, et al. *J Clin Lipidol.* 2015;9(2):129-169; Jellinger PS, et al. *Endocr Pract.* 2017;23(suppl 2):1-87.



## Statin Intolerance Risk Factors

### Potential Patient Factors

- Pre-existing neuromuscular condition, hepatic disease, renal disease, and/or untreated hypothyroidism
- Known history of myopathy or family history of myopathy syndrome
- Certain rare genetic polymorphisms regulating hepatic cytochrome enzyme pathways
- Drug–drug interactions that increase plasma levels of statins



Fitchett DH, et al. *Circulation*. 2015;131(13):e389-e391; Bellosta S, Corsini A. *Expert Opin Drug Saf*. 2018;17(1):25-37.



## 2015 NLA Dyslipidemia Management Recommendations



- “Patient-centered”
- Key tenet: lifestyle therapies are central to prevention of ASCVD
  - Nutrition/diet (low in saturated fat)
  - Weight loss
  - Exercise/physical activity

Jacobson TA, et al. *J Clin Lipidol*. 2015;9(2):129-169; Jacobson TA, et al. *J Clin Lipidol*. 2015;9(6):S1-S122.e1.



## 2015 NLA Dyslipidemia Management Recommendations

- Lifestyle therapies
- Cholesterol-lowering drug therapies
  - First-line (unless contraindicated): moderate- or high-intensity statin
  - Combination therapies



Jacobson TA, et al. *J Clin Lipidol*. 2015;9(2):129-169.



## 2015 NLA: Treatment Goals and Criteria for Drug Therapy, Low and Moderate Risks

Risk Category	Criteria	Treatment Goal	
		Non-HDL-C, mg/mL LDL-C, mg/mL	Consider Drug Therapy Non-HDL-C, mg/mL LDL-C, mg/mL
Low	<ul style="list-style-type: none"> <li>• 0 or 1 major ASCVD risk factors (RFs)</li> <li>• Consider other risk indicators, if known</li> </ul>	<130	≥190
		<100	≥160
Moderate	<ul style="list-style-type: none"> <li>• 2 major ASCVD RFs</li> <li>• Consider quantitative risk scoring</li> <li>• Consider other risk indicators (additional testing may be considered)</li> </ul>	<130	≥160
		<100	≥130

Jacobson TA, et al. *J Clin Lipidol*. 2015;9(2):129-169.



## 2015 NLA: Treatment Goals and Criteria for Drug Therapy, High-Risk

Risk Category	Criteria	Treatment Goal Non-HDL-C, mg/mL LDL-C, mg/mL	Consider Drug Therapy Non-HDL-C, mg/mL LDL-C, mg/mL
High	<ul style="list-style-type: none"> <li>• ≥3 major ASCVD RFs</li> <li>• Diabetes (type 1 or 2)</li> <li>• 0 or 1 other major ASCVD RF</li> </ul> <p><b>and</b></p> <ul style="list-style-type: none"> <li>• No evidence of end-organ damage</li> <li>• Chronic kidney disease (CKD) stage 3B or 4</li> <li>• LDL-C of ≥190 mg/dL</li> <li>• Quantitative risk score reaching the high-risk threshold</li> </ul>	<p>&lt;130</p> <p>&lt;100</p>	<p>≥130</p> <p>≥100</p>

Jacobson TA, et al. *J Clin Lipidol*. 2015;9(2):129-169.



## 2015 NLA: Treatment Goals and Criteria for Drug Therapy, Very High-Risk

Risk Category	Criteria	Treatment Goal Non-HDL-C, mg/mL LDL-C, mg/mL	Consider Drug Therapy Non-HDL-C, mg/mL LDL-C, mg/mL
Very high	<ul style="list-style-type: none"> <li>▪ ASCVD</li> <li>▪ Diabetes (type 1 or 2)               <ul style="list-style-type: none"> <li>○ ≥2 other major ASCVD RFs</li> </ul> </li> </ul> <p><b>or</b></p> <ul style="list-style-type: none"> <li>○ Evidence of end-organ damage*</li> </ul>	<p>&lt;100</p> <p>&lt;70</p>	<p>≥100</p> <p>≥70</p>

\*End-organ damage indicated by increased albumin-to-creatinine ratio (≥30 mg/g), CKD (eGFR, 60 mL/min/1.73 m<sup>2</sup>), or retinopathy. eGFR, estimated glomerular filtration rate

Jacobson TA, et al. *J Clin Lipidol*. 2015;9(2):129-169.



## Non-statin Therapies

### Classes of Drugs

1. Bile acid binding resins (eg, cholestyramine, colesevelam)
2. Cholesterol absorption inhibitor (ezetimibe)
3. PCSK9 inhibitors (alirocumab, evolocumab)

### Additional Drugs for HoFH

1. Mipomersen: antisense oligonucleotide inhibitor of apolipoprotein B
2. Lomitapide: small molecule inhibitor of microsomal triglyceride transfer protein

### LDL Apheresis



## Bile Acid Binding Resins

### Medications in this class include:

1. Colestipol (Colestid)
2. Cholestyramine (Questran, Questran Light, Cholybar, Olestyr)
3. Colesevelam (Welchol)

### • Mechanism of Action (MOA)

- Bind bile acids in the GI tract → LDL-C lowering ≈10%-27%

### • Advantages

- No systemic absorption

### • Disadvantages

- Recent FDA labeling change to remove CV indications
- Little in the way of convincing outcomes trials for CVD end points

### • Adverse events

- Constipation, bloating, nausea, gas

CVD, cardiovascular disease;  
GI, gastrointestinal



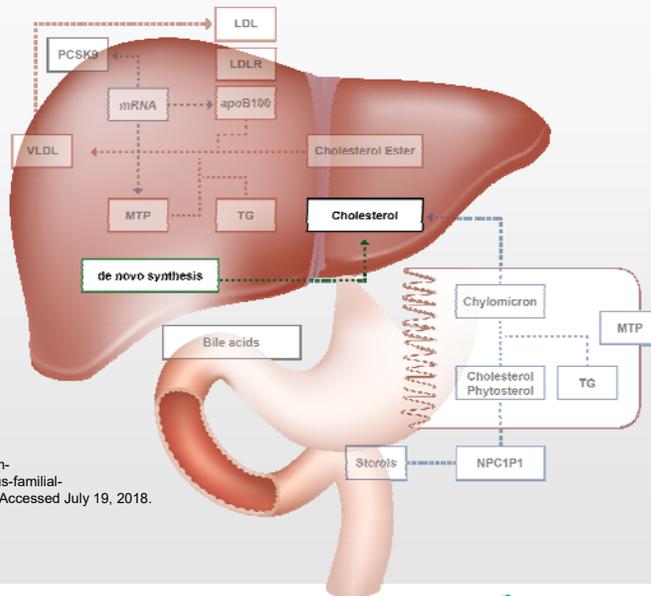
## Cholesterol Absorption Inhibitor

- Ezetimibe (Zetia) is the only currently available drug in this class
  - Also available in a combination product with simvastatin
- MOA
  - Inhibition of GI tract cholesterol absorption via Niemann-Pick C1-Like 1 (NPC1L1) transmembrane protein receptor → ≈20% ↓LDL
- May improve CV outcomes in certain patient populations (IMPROVE-IT trial)
- Common adverse events include diarrhea, upper respiratory infection, arthralgia, pain in extremity

Kones R, Rumana U. *Drugs*. 2015;75(11):1201-1228; Zetia [prescribing information]. Whitehouse Station, NJ: Merck & Co., Inc.; 2013; Cannon CP, et al; IMPROVE-IT Investigators. *N Engl J Med*. 2015;372(25):2387-2397; Giugliano RP, et al; IMPROVE-IT Investigators. *Circulation*. 2018;137(15):1571-1582.



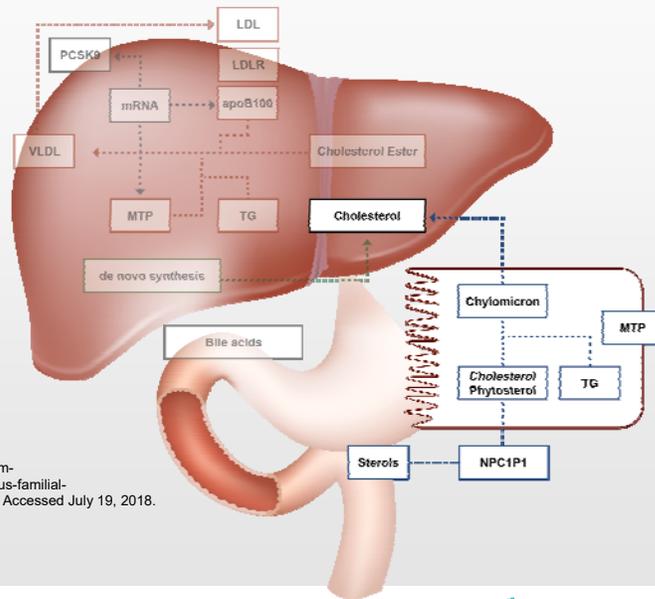
## Comparison of MOAs: Statins



Siskey JM, Deyo ZM. *Pharmacy Times*.  
[www.pharmacytimes.com/publications/health-system-edition/2014/january2014/new-therapies-homozygous-familial-hypercholesterolemia](http://www.pharmacytimes.com/publications/health-system-edition/2014/january2014/new-therapies-homozygous-familial-hypercholesterolemia). Published January 14, 2014. Accessed July 19, 2018.



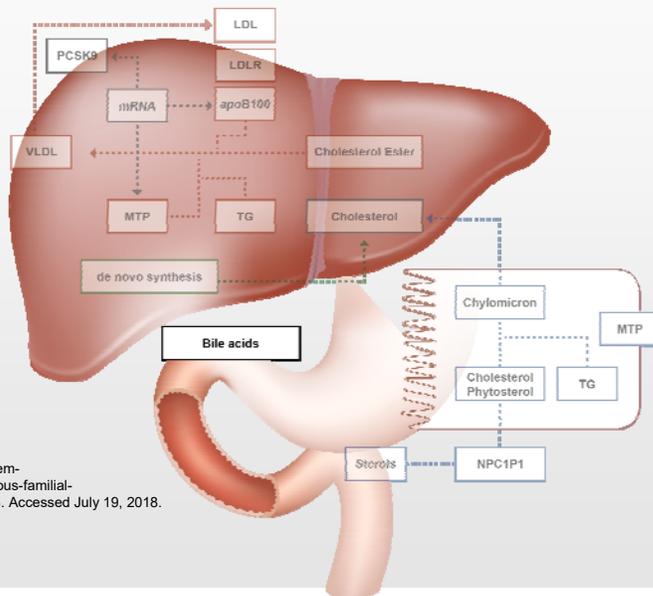
## Comparison of MOAs: Ezetimibe



Siskey JM, Deyo ZM. *Pharmacy Times*.  
[www.pharmacytimes.com/publications/health-system-edition/2014/january2014/new-therapies-homozygous-familial-hypercholesterolemia](http://www.pharmacytimes.com/publications/health-system-edition/2014/january2014/new-therapies-homozygous-familial-hypercholesterolemia). Published January 14, 2014. Accessed July 19, 2018.



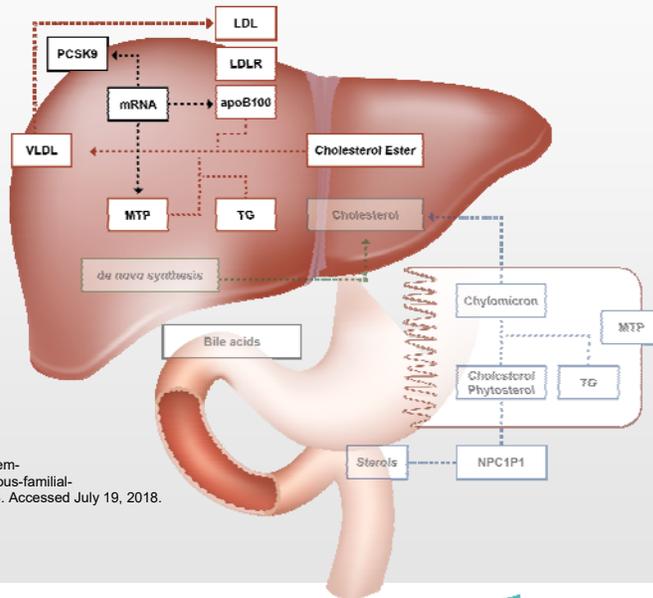
## Comparison of MOAs: Bile Acid Sequestrants



Siskey JM, Deyo ZM. *Pharmacy Times*.  
[www.pharmacytimes.com/publications/health-system-edition/2014/january2014/new-therapies-homozygous-familial-hypercholesterolemia](http://www.pharmacytimes.com/publications/health-system-edition/2014/january2014/new-therapies-homozygous-familial-hypercholesterolemia). Published January 14, 2014. Accessed July 19, 2018.



## Comparison of MOAs: PCSK9 Inhibitors



Siskey JM, Deyo ZM. *Pharmacy Times*. www.pharmacytimes.com/publications/health-system-edition/2014/january2014/new-therapies-homozygous-familial-hypercholesterolemia. Published January 14, 2014. Accessed July 19, 2018.



## Non-Statin Therapies (con't) REDUCE-IT Trial

### Cardiovascular Risk Reduction with Icosapent Ethyl in High Risk Patients on Statin Therapy

Study Design	Inclusion Criteria
<ul style="list-style-type: none"> <li>Multicenter, randomized, double-blind placebo-controlled</li> <li>High dose icosapent ethyl (a highly purified ethyl ester of eicosapentaenoic acid (EPA); 2 g BID, 4 g/day vs. placebo)</li> <li>8179 patients</li> <li>Duration: 7 years (2011-2018)</li> <li>Primary Endpoint: Composite of CV death, nonfatal myocardial infarction, nonfatal stroke, coronary revascularization, or unstable angina</li> </ul>	<ul style="list-style-type: none"> <li>Age <math>\geq 45</math> with established CVD (Secondary Prevention Cohort) or <math>\geq 50</math> years with diabetes with <math>\geq 1</math> additional risk factor for CVD (Primary Prevention Cohort)</li> <li>Fasting triglyceride <math>\geq 150</math> mg/dL and <math>&lt; 500</math> mg/dL</li> <li>LDL-C <math>\geq 40</math> mg/dL and <math>\leq 100</math> mg/dL and on stable statin therapy for <math>\geq 4</math> weeks prior to qualifying measurements for randomization</li> </ul>



## Non-Statin Therapies (con't) REDUCE-IT Trial

Results	Conclusions
<ul style="list-style-type: none"> <li>Primary endpoint event occurrences: Icosapent ethyl: <b>17.2%</b> Placebo: <b>22.0%</b> Hazard ratio, 0.75; 95% confidence interval, 0.68 to 0.83; P&lt;0.001)</li> <li>Effects on Lipids:               <ul style="list-style-type: none"> <li>Median change in triglycerides from baseline to 1 year, ↓18.3% in icosapent ethyl group vs ↑2.2% in placebo.</li> <li>Median reduction from baseline was 19.7% higher in the icosapent ethyl group than placebo</li> <li>Median change in LDL-C from baseline was an ↑ 3.1% in the icosapent ethyl group vs ↑10.2% in placebo</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Compared with placebo, icosapent ethyl 4g/day significantly reduced CV events by 25%, including:               <ul style="list-style-type: none"> <li>20% reduction in death due to CV causes</li> <li>31% reduction in MI</li> <li>28% reduction in stroke</li> </ul> </li> <li>Low rate of adverse effects, including               <ul style="list-style-type: none"> <li>Small but significant increase in atrial fibrillation/flutter</li> <li>Non-statistically significant increase in serious bleeding</li> </ul> </li> </ul>



## Case Study

- 54-year-old man with FH
  - BMI: 31.7
  - LDL-C: ≈220 mg/dL
  - Smoking: 1 pack/day
  - High-fat diet
  - Exercise: walking ≈30 minutes, 1 or 2 days/week
  - Meds: atorvastatin 80 mg qd, lisinopril 20 mg qd



What recommendations for the patient?





## Audience Discussion Question 2

What medication changes, if any, would you recommend for the patient?

- A. Ezetimibe
- B. Change statin
- C. Fibrate
- D. PCSK9i
- E. No change



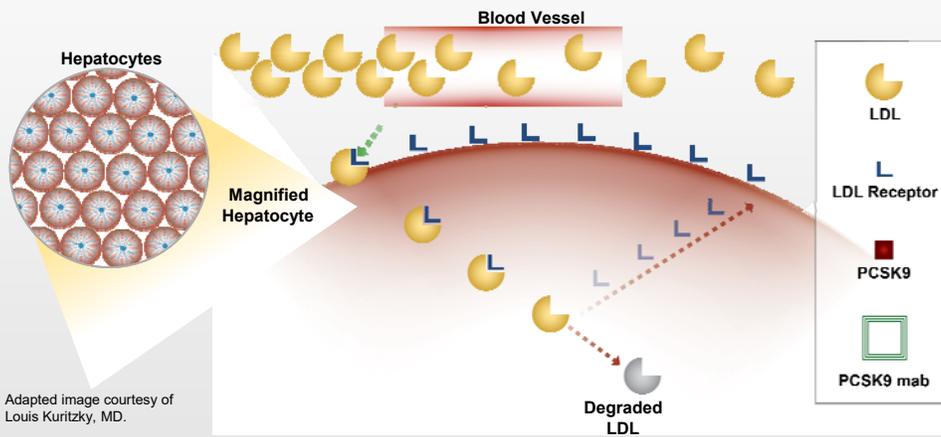
## PCSK9 Inhibitors

- A class of lipid-lowering drugs first approved in 2015
  - Alirocumab (Praluent), evolocumab (Repatha)
- Current members of this class are monoclonal antibodies (mAbs), a type of biological drug, that require a subcutaneous (SC) route of administration
  - Alirocumab is a human mAb of the immunoglobulin G<sub>1</sub> (IgG<sub>1</sub>) isotype
  - Evolocumab is a human mAb of the immunoglobulin G<sub>2</sub> (IgG<sub>2</sub>)

Solve  
FDA approves Praluent to treat certain patients with high cholesterol [news release]. [www.fiercepharma.com/marketing/fda-approves-praluent-to-treat-certain-patients-high-cholesterol](http://www.fiercepharma.com/marketing/fda-approves-praluent-to-treat-certain-patients-high-cholesterol). Published July 27, 2015. Accessed July 19, 2018; FDA approves Repatha to treat certain patients with high cholesterol [news release]. [www.pharmacypracticenews.com/New-Drug-Approvals/Article/08-15/FDA-Approves-Repatha-To-Treat-Certain-Patients-With-High-Cholesterol/33483/ses=ogst](http://www.pharmacypracticenews.com/New-Drug-Approvals/Article/08-15/FDA-Approves-Repatha-To-Treat-Certain-Patients-With-High-Cholesterol/33483/ses=ogst). Published August 28, 2015. Accessed July 19, 2018; Praluent [prescribing information]. Bridgewater, NJ: Sanofi-Aventis US LLC; 2015; Repatha [prescribing information]. Thousand Oaks, CA: Amgen Inc; 2015.



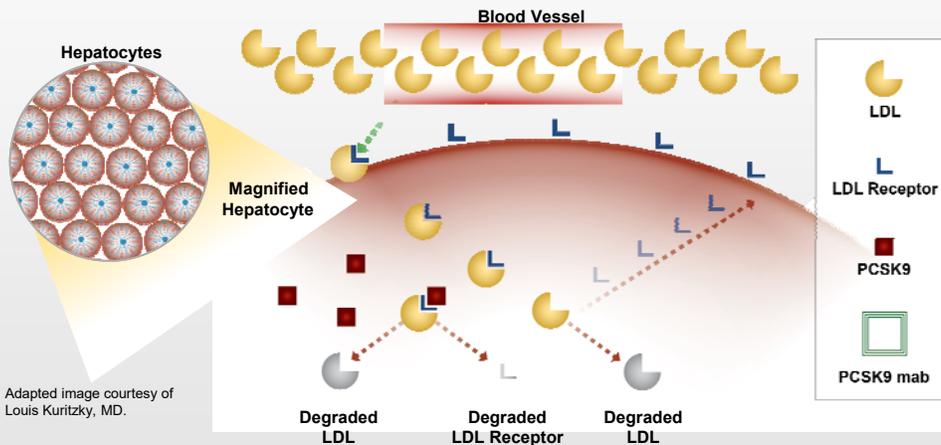
## PCSK9 Inhibitors (MOA): Inactive



Krähenbühl S, et al. *Drugs*. 2016;76(12):1175-1190; Ahn CH, Choi SH. *Diabetes Metab J*. 2015;39(2):87-94.

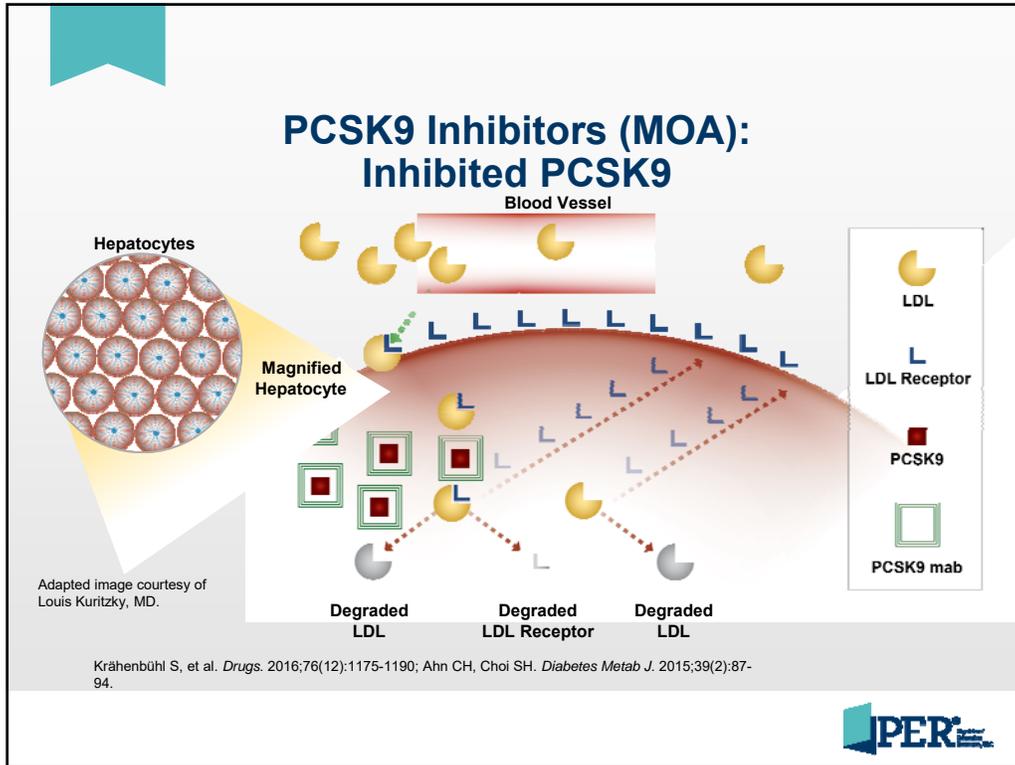


## PCSK9 Inhibitors (MOA): Active PCSK9



Krähenbühl S, et al. *Drugs*. 2016;76(12):1175-1190; Ahn CH, Choi SH. *Diabetes Metab J*. 2015;39(2):87-94.





## FDA-Approved Indications

### Alirocumab

- Adjunct to diet and maximally tolerated statin therapy for the treatment of adults with HeFH or clinical ASCVD who require additional lowering of LDL-C

### Evolocumab

- To reduce the risk of myocardial infarction, stroke, and coronary revascularization in adults with established CVD
- Adjunct to diet, alone, or in combination with other lipid-lowering therapies (eg, statins, ezetimibe) for treatment of adults with primary hyperlipidemia (including HeFH) to reduce LDL-C
- Adjunct to diet and other LDL-lowering therapies (eg, statins, ezetimibe, LDL apheresis) in patients with HoFH who require additional lowering of LDL-C

**New and Updated Indications!  
Effective December 1, 2017**

Praluent [prescribing information]. Bridgewater, NJ: Sanofi-Aventis US LLC; 2015. Repatha [prescribing information]. Thousand Oaks, CA: Amgen Inc; 2015.

**IPER**

## Summary of Indication Differences

- **Alirocumab**
  - Just as combination therapy with maximally tolerated statin for patients with HeFH or clinical ASCVD
  - *Not approved for HoFH*
- **Evolocumab**
  - New, broader indication:
    - *To reduce the risk of myocardial infarction, stroke, and coronary revascularization in adults with established CVD*
  - Monotherapy **or** combination therapy with other lipid-lowering drugs
  - Approved for HeFH as well as HoFH

Praluent [prescribing information]. Bridgewater, NJ: Sanofi-Aventis US LLC; 2015; Repatha [prescribing information]. Thousand Oaks, CA: Amgen Inc; 2015.



## Alirocumab: Dosing and Administration

- Recommended starting dose: 75 mg SC biweekly (2x/month) or 300 mg q4 weeks
- Maximum dose: 150 mg SC biweekly
- Available in the following forms:
  - Prefilled, single-dose, disposable pens
- OR**
- Syringes in 2 doses/concentrations:
  - 75 mg **or** 150 mg alirocumab in 1 mL solution

Praluent [prescribing information]. Bridgewater, NJ: Sanofi-Aventis US LLC; 2015





## Evolocumab: Dosing and Administration

- For patients with HoFH, the recommended dose is 420 mg SC once per month
- For other patients, including those with HeFH, the recommended dose is either 140 mg biweekly (2x/month) or 420 mg monthly
- Available in the following forms:
  - Single-use prefilled autoinjector (SureClick) containing 140 mg of evolocumab in 1 mL solution
  - Single-use on-body infusor (Pushtronex) for monthly injection with prefilled cartridges containing 420 mg evolocumab in 3.5 mL of solution

Repatha [prescribing information]. Thousand Oaks, CA: Amgen Inc; 2015.



## Cardiac Outcomes Studies and Lipid-Lowering Drugs

### IMPROVE-IT

- Ezetimibe in combination with simvastatin in patients with recent acute coronary syndrome (ACS)

### FOURIER

- Evolocumab in patients with established CVD on statin therapy

### ODYSSEY OUTCOMES

- Alirocumab in patients 1–12 months out from an ACS event





## IMPROVE-IT Trial Results

- Goal: study the safety and efficacy of ezetimibe in combination with simvastatin compared with simvastatin alone in reducing CV events in patients at high risk
- Multicenter, randomized, double-blind, active-control trial
- Patients randomized to receive ezetimibe 10 mg/simvastatin 40 mg (n=9067) or placebo/simvastatin 40 mg (n=9077)
  - Patients were followed for 6 years

Cannon CP, et al; IMPROVE-IT Investigators. *N Engl J Med.* 2015;372(25):2387-2397.



## IMPROVE-IT Trial Results

- Ezetimibe/simvastatin reduced LDL-C compared with placebo/simvastatin, 53.7 mg/dL versus 69.5 mg/dL ( $P<0.001$ )
- Ezetimibe/simvastatin compared with placebo/simvastatin significantly reduced the risk of:
  - Primary end point (CV death/MI/unstable angina (UA)/coronary revascularization/stroke/moderate or severe bleeding): 32.7% versus 34.7% (HR, 0.94; 95% CI, 0.89-0.99;  $P=0.016$ )
    - MI: 13.1% versus 14.8% ( $P=0.002$ )
    - Stroke: 4.2% versus 4.8% ( $P=0.05$ )
    - CVD/MI/stroke: 20.4% versus 22.2% ( $P=0.003$ )

Cannon CP, et al. *N Engl J Med.* 2015;372(25):2387-2397

UA, unstable angina





## FOURIER Trial Results

- Goal: evaluate the efficacy and safety of evolocumab, a PCSK9 inhibitor, among subjects with elevated CV risk on statin therapy
- Randomized, parallel, double-blind, placebo-controlled trial
- Patients assigned to evolocumab 140 mg SC q2 weeks or 420 mg monthly (n=13,784) versus placebo q2 weeks (n=13,780)

Sabatine MS, et al; FOURIER Steering Committee and Investigators. *N Engl J Med.* 2017;376(198):1713-1722.



## FOURIER Trial Results

- Evolocumab reduced LDL-C by up to 59% compared with placebo ( $P < 0.001$ )
- Evolocumab, compared with placebo, significantly reduced the risk of:
  - Primary end point (composite of CV death, MI, stroke, hospitalization for UA, or coronary revascularization)
    - 9.8% versus 11.3% (HR, 0.85; 95% CI, 0.79-0.92;  $P < 0.001$ )
  - Key secondary end point (composite of CV death, MI, or stroke)
    - 5.9% versus 7.4% (HR, 0.80; 95% CI, 0.73-0.88;  $P < 0.001$ )

Sabatine MS, et al; FOURIER Steering Committee and Investigators. *N Engl J Med.* 2017;376(198):1713-1722.



## FOURIER Trial: Prior MI Subset

- In the FOURIER Trial, 22,351 patients had prior MI
  - MI within 2 years prior: 8402 patients (38%)
  - Multiple MIs ( $\geq 2$ ): 5285 patients (24%)
  - Residual, multivessel CAD: 5618 patients (25%)
- Evolocumab lowered LDL-C and reduced the risk of CV death, MI, stroke, hospitalization for UA, or coronary revascularization in high-risk patients

Sabatine MS, et al. *Circulation*. 2018 Apr 6. pii:CIRCULATIONAHA.118.034309. [Epub ahead of print.]

CAD, coronary artery disease



## FOURIER Trial: Prior MI Subset

Patient Subset (number of patients)	Relative Risk Reduction, Primary Endpoint	Hazard Ratio (range)	Absolute Risk Reduction at 3 Years
MI within 2 years prior (8402)	20%	0.80 (0.71-0.91)	3.4%
$\geq 2$ MIs (5285)	18%	0.82 (0.72-0.93)	3.7%
Residual, multivessel CAD (5618)	21%	0.79 (0.69-0.91)	3.6%

Sabatine MS, et al. *Circulation*. 2018 Apr 6. pii:CIRCULATIONAHA.118.034309. [Epub ahead of print.]





## **Preliminary ODYSSEY Outcomes Topline Results**

- Data presented at the American College of Cardiology 2018 Meeting
- Random, placebo-controlled trial with nearly 19,000 patients
- No safety signal with alirocumab other than injection-site reactions (with treatment extending >3 years in some patients)

American College of Cardiology. ODYSSEY Outcomes: results suggest use of PCSK9 inhibitor reduces CV events, LDL-C in ACS patients. [www.acc.org/latest-in-cardiology/articles/2018/03/05/15/53/sat-9am-odyssey-outcomes-cv-outcomes-with-alirocumab-after-acc-2018](http://www.acc.org/latest-in-cardiology/articles/2018/03/05/15/53/sat-9am-odyssey-outcomes-cv-outcomes-with-alirocumab-after-acc-2018). Published March 10, 2018. Accessed July 19, 2018.



## **Preliminary ODYSSEY Outcomes Topline Results**

- Preliminary, primary outcome (major adverse cardiac events):
  - Alirocumab (9.5%) versus placebo (11.1%) (HR, 0.85; 95% CI, 0.78-0.93;  $P=0.0003$ )
    - Coronary heart disease death: 2.2% versus 2.3% ( $P=0.38$ )
    - MI: 6.6% versus 7.6% ( $P=0.006$ )
    - Ischemic stroke: 1.2% versus 1.6% ( $P=0.01$ )
    - UA: 0.4% versus 0.6% ( $P=0.02$ )

American College of Cardiology. ODYSSEY Outcomes: results suggest use of PCSK9 inhibitor reduces CV events, LDL-C in ACS patients. [www.acc.org/latest-in-cardiology/articles/2018/03/05/15/53/sat-9am-odyssey-outcomes-cv-outcomes-with-alirocumab-after-acc-2018](http://www.acc.org/latest-in-cardiology/articles/2018/03/05/15/53/sat-9am-odyssey-outcomes-cv-outcomes-with-alirocumab-after-acc-2018). Published March 10, 2018. Accessed July 19, 2018.





## PCSK9 Inhibitors: Adverse Events

- Both alirocumab and evolocumab are generally well tolerated
- Adverse events are typically limited to nasopharyngitis, injection-site reactions, arthralgia, myalgia, and headache
- Concerns about the impact of lowering LDL-C levels have been mitigated based on subanalysis of FOURIER trial results
  - LDL-C levels were reduced to <7.7 mg/dL in some patients
  - No safety concerns observed over the ≥2-year study period

Robinson JG, et al; ODYSSEY LONG TERM Investigators. *N Engl J Med.* 2015;372(16):1489-1499; Sabatine MS, et al; Open-Label Study of Long-Term Evaluation against LDL Cholesterol (OSLER) Investigators. *N Engl J Med.* 2015;372(16):1500-1509; Sabatine MS, et al; FOURIER Steering Committee and Investigators. *N Engl J Med.* 2017;376(18):1713-1722; El Shahawy M, et al. *Am J Cardiol.* 2017;120(6):931-939; Giugliano RP, et al; FOURIER Investigators. *Lancet.* 2017;390(10106):1962-1971.



## Therapy Recommendations

- Several professional organizations and associations have updated existing guidelines and recommendations based on the efficacy and safety of PCSK9 inhibitors
  - National Lipid Association
  - American College of Cardiology
  - American Association of Clinical Endocrinologists/American College of Endocrinology

Lloyd-Jones DM, et al. *J Am Coll Cardiol.* 2017;70(14):1785-1822; Jellinger PS, et al. *Endocr Pract.* 2017;23(suppl 2):S1-S87; Orringer CE, et al. *J Clin Lipidol.* 2017;11(4):880-890.



## 2017 NLA Expert Panel Recommendations on PCSK9 Inhibitors

### Recommendations for 3 patient populations:

1. ASCVD
2. LDL-C  $\geq 190$  mg/dL (including polygenic hypercholesterolemia, HeFH, and HoFH phenotype)
3. Very high-risk/statin intolerance

Orringer CE, et al. *J Clin Lipid.* 2017;11:880-890.



## 2017 NLA Recommendations on PCSK9 Inhibitors

Disorder	LDL-C/Non-HDL-C (mg/dL) Threshold	Strength/Quality of Evidence
ASCVD + additional RFs	$\geq 70$ / $\geq 100$	A/High
Progressive ASCVD	$\geq 70$ / $\geq 100$	B/Moderate
LDL-C $\geq 190$ , age 40-79 years No uncontrolled RFs or key additional risk markers	$\geq 100$ / $\geq 130$	B/Moderate
LDL-C $\geq 190$ , age 40-79 years Uncontrolled RFs or key additional risk markers	$\geq 70$ / $\geq 100$	B/Moderate
LDL-C $\geq 190$ , age 18-39 years Uncontrolled RFs, key additional risk markers, or FH causing mutation	$\geq 100$ / $\geq 130$	E/Low
HoFH phenotype	$\geq 70$ / $\geq 100$	B/Moderate
ASCVD + statin intolerance	Clinical judgment	C/Low

Orringer CE, et al. *J Clin Lipid.* 2017;11:880-890.



## Potential Barriers to PCSK9 Inhibitor Access

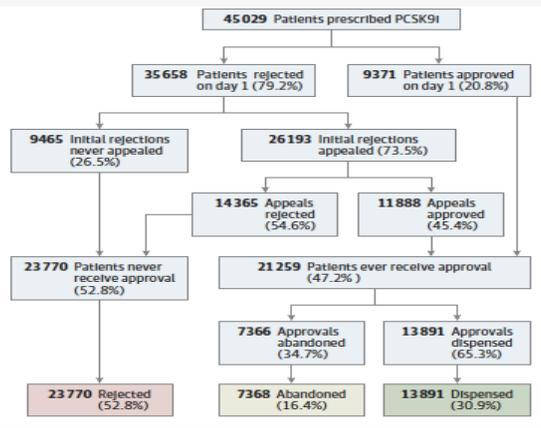
- NLA survey reported initial denial rates of >85%
- Approval rates were higher for patients with heart failure (43%) compared with ASCVD (36%)
- **Documentation** reported to be the most critical factor in facilitating approvals

(N.B.—study was conducted prior to new indication for evolocumab)

Cohen JD, et al. *J Clin Lipidol*. 2017;11(4):891-900.



## PCSK9 Inhibitor Prescription Analysis



Navar AM, et al. *JAMA Cardiol*. 2017;2(11):1217-1225.

- Approximately one-third of PCSK9 inhibitor prescriptions were dispensed
- Less than half of all prescribed PCSK9 inhibitors were approved by payers
- Rx abandonment most associated with higher co-pay costs
- Higher rates of approval when dispensed at a mail-order or specialty pharmacy





# Prior Authorization Template

## PCSK9 Inhibitor Prior Authorization Form To be completed by Prescriber

<b>Prescriber Information</b>	<b>Patient Information</b>
Prescriber's NPI:	Patient's Medical ID #
Prescriber Name:	Patient Name:
Phone #: ( )	Patient DOB:
Fax #: ( )	Primary ICD Diagnosis code:
<b>Prescription Information</b>	
Drug Requested:	Frequency of Dosing:
<input type="checkbox"/> New therapy <input type="checkbox"/> Continuation	Quantity Requested:

Baum SJ, et al. *Clin Cardiol.* 2017;40(4):243-254.



# Prior Authorization Template

<b>Clinical Information</b>	
Patient 18 years or older <input type="checkbox"/> yes <input type="checkbox"/> no	Patient pregnant <input type="checkbox"/> yes <input type="checkbox"/> no
Is there a diagnosis of clinical ASCVD, heterozygous familial hypercholesterolemia (HeFH), or homozygous hypercholesterolemia (HoFH)?	<input type="checkbox"/> yes <input type="checkbox"/> no
Is taking his/her maximally tolerated statin dose. * "Maximally tolerated statin therapy is defined as the highest tolerated intensity and frequency of a statin, even if the dose is zero." This is preferably the guideline-recommended intensity of statin, but may of necessity be a lower intensity dose or reduced frequency of statin dosing, or even no statin at all. Statin intolerance can be defined as unacceptable adverse effects that resolve with discontinuation of therapy and recur with re-challenge of 2 to 3 statins, preferably ones that use different metabolic pathways with 3 of which being prescribed at the lowest approved dose.	<input type="checkbox"/> yes <input type="checkbox"/> no
Has HeFH. * "HeFH is defined as untreated LDL-C ≥160 mg/dL for children and ≥190 mg/dL for adults and with 1 first-degree relative similarly affected or with premature coronary artery disease or with positive genetic testing for an LDL-C-raising gene defect (LDL-R, Apo-B, or PCSK9)."	<input type="checkbox"/> yes <input type="checkbox"/> no
Has HoFH. * "HoFH is defined as LDL-C ≥400 mg/dL and ≥1 parent with clinically diagnosed FH, positive genetic testing for two LDL-C-raising gene defects (LDL-R, apoB, or PCSK9), or autosomal-recessive FH."	<input type="checkbox"/> yes <input type="checkbox"/> no
Has Clinical ASCVD. * "Clinical ASCVD includes acute coronary syndromes, history of MI, stable or unstable angina, coronary or other arterial revascularization, stroke, TIA, or peripheral arterial disease presumed to be of atherosclerotic origin, as well as other forms of atherosclerotic vascular disease including significant atherosclerosis of the coronary, carotid, iliofemoral circulations, and the aorta. Documentation of ASCVD requiring additional lipid lowering." (check all that apply)	<input type="checkbox"/> yes <input type="checkbox"/> no
<input type="checkbox"/> Acute Coronary Syndrome <input type="checkbox"/> History of MI <input type="checkbox"/> Stable or Unstable Angina <input type="checkbox"/> Coronary revascularization <input type="checkbox"/> Other arterial revascularization <input type="checkbox"/> Stroke <input type="checkbox"/> TIA <input type="checkbox"/> PAD Extensive Subclinical atherosclerosis: <input type="checkbox"/> Coronary Circulation <input type="checkbox"/> Carotid Circulation <input type="checkbox"/> Iliofemoral Circulation <input type="checkbox"/> Atherosclerosis of the aorta	

Baum SJ, et al. *Clin Cardiol.* 2017;40(4):243-254.



## Prior Authorization Template

**Requires additional LDL lowering.** \* "Patients with clinical ASCVD, HeFH, or HoFH who may require additional lowering of LDL-C include those with less than expected percent reduction in LDL-C or residual absolute levels of LDL-C, non-HDL-C, or apoB that exceed goals for atherogenic lipoproteins as specifically defined in any of the current guidelines for these very high-risk and 'extreme risk' populations."

Baseline LDL: \_\_\_\_\_ Current LDL: \_\_\_\_\_

Current Lipid Lowering Medication and Amount

Statin \_\_\_\_\_ Dose: \_\_\_\_\_  Ezetimibe

Other LLM's: \_\_\_\_\_ Dose: \_\_\_\_\_ LDL Apheresis  no  yes

**In my professional opinion, this patient requires the medication prescribed. The information provided supports this opinion.**

Prescriber Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Baum SJ, et al. *Clin Cardiol.* 2017;40(4):243-254.



## Which Non-statin to Use?

- Primary goal: LDL reduction for patients at the highest risk
- Use recommendations from guidelines as applicable for patient
- Patient status, particularly if there are risks for ASCVD
- Emphasize adherence to lifestyle recommendations and to prescribed therapy
  - Coordinate with other health care professionals
- Discuss economic issues with patients
  - If cost is a major factor, it will affect compliance/adherence
  - When available, use manufacturer financial assistance programs



## Case Study

- 54-year-old man with FH
  - BMI: 31.7
  - New LDL-C:  $\approx$ 195 mg/dL
  - Smoking down to 0.5 pack/day
  - Diet modifications made
  - Exercise: walking  $\approx$ 30 minutes, 3 or 4 days/week
  - Meds: atorvastatin 80 mg qd, lisinopril 20 mg qd, ezetimibe



What recommendations for the patient?



## Summary

- Statin therapy is not feasible for every patient
- Clinical guidelines provide direction on the use of non-statins, including ezetimibe and PCSK9 inhibitors
- Obtaining payer approval for a PCSK9 inhibitor will require coordination of the health care team and clear documentation for payer processes
- Preliminary clinical trial data for alirocumab may result in updated indications





## Additional Resources

- National Lipid Association (www.lipid.org)
  - Resources for patients and clinicians
- The FH Foundation (thefhfoundation.org)
  - Resources for patients and clinicians
- Baum SJ, et al. *Clin Cardiol.* 2017;40(4):243-254. doi: 10.1002/clc.22713
  - Includes template forms for prior authorization and appeal letter



## Post-test Question 1

**The National Lipid Association (NLA) published recommendations for patient-centered management of dyslipidemia in 2015. Those recommendations propose treatment goals for non-HDL-C and LDL-C based on 4 risk categories: Low, Moderate, High, and Very High. Treatment goals for the Low, Moderate, and High risk categories are the same. Which of the following represents the NLA treatment goals for LDL-C?**

- A. Low, Moderate, High: <70 mg/mL; Very High: <70 mg/mL
- B. Low, Moderate, High: <70 mg/mL; Very High: <100 mg/mL
- C. Low, Moderate, High: <100 mg/mL; Very High: <100 mg/mL
- D. Low, Moderate, High: <100 mg/mL; Very High: <70 mg/mL





## Post-test Question 2

**Statin and nonstatin combination therapy may improve lipid-lowering efficacy and may improve cardiovascular outcomes. Which of the following combination therapies was studied in the IMPROVE-IT trial and demonstrated reductions in cardiovascular outcomes?**

- A. Colestipol and simvastatin
- B. Ezetimibe and simvastatin
- C. Evolocumab and simvastatin
- D. Lomitapide and simvastatin



## Post-test Question 3

**Which of the following is TRUE regarding indications for PCSK9 inhibitors?**

- A. Alirocumab is approved for either monotherapy or combination therapy for patients with heterozygous familial hypercholesterolemia (HeFH), homozygous familial hypercholesterolemia (HoFH), or clinical atherosclerotic cardiovascular disease (ASCVD).
- B. Alirocumab is approved for combination therapy with a maximally tolerated statin for patients with HeFH, HoFH, or clinical ASCVD.
- C. Evolocumab is indicated to reduce the risk of myocardial infarction, stroke, and coronary revascularization in adults with established CVD.
- D. Evolocumab is just approved for combination therapy for patients with HeFH or clinical ASCVD.





## Post-test Question 4

BN is a 27-year-old woman diagnosed at age 13 years with HoFH. Current lipid medications are lovastatin, colesvelam, and ezetimibe. BN adheres to a healthy lifestyle with a low-fat diet and regular exercise. However, BN's LDL-C levels remain high with the most recent level of 213 mg/dL. With the HoFH diagnosis, her family history of cardiovascular disease, and the recent increase in LDL-C despite high-dose lipid-lowering drugs, BN asks her physician about the new PCSK9 inhibitors. Which of the following would be an appropriate treatment option for BN?

- A. Alirocumab 75 mg subcutaneously biweekly (2x/month)
- B. Alirocumab 300 mg subcutaneously q4 weeks
- C. Evolocumab 300 mg subcutaneously q4 weeks
- D. Evolocumab 420 mg subcutaneously q4 weeks



# Q&A

The bottom slide features a dark blue background. On the left, there is a large, 3D-style teal sphere with a white question mark inside. To the right of the sphere, the text 'Q&A' is written in a large, light teal, sans-serif font. In the bottom right corner, the IPER logo is displayed.



**Thank you for your attention  
and participation!**



**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Pre-Operative Evaluation***

Syed Atif, MD and Muhammad Khan, MD

**Disclosures:**

The speakers have no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speakers have attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speakers indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**

# PREOPERATIVE EVALUATION

Syed Muhammad Atif M.D.  
M. Nausherwan Khan, M.D.

WELLSPAN FAMILY MEDICINE RESIDENCY PROGRAM  
LEBANON, PA



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No conflict of interests to disclose.



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## OBJECTIVES

1. To review preoperative evaluation
2. To review issues in perioperative medication adjustment
3. To review preoperative testing
4. To review clinical risk assessment and risk assessment tools
5. To review the role of functional assessment
6. To determine who needs further cardiac testing
7. To determine who might benefit from perioperative beta blockers



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### Case #1

65-year-old woman who presents to your office for a preoperative evaluation for cataract surgery.

- From the chart you see she has a history of well compensated CHF, coronary artery disease, HTN, and DM.
- She takes aspirin, glyburide, lisinopril, metformin, and metoprolol.
- Denies having chest pain, dyspnea, dizziness.
- She is not physically active.
- Her exam reveals no concerns.




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### What are your recommendations for this patient?

- Proceed to surgery without further testing
- Evaluate with cardiac stress testing
- Recommend against surgery




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## Case # 2

67-year-old woman with long-standing cervical radiculopathy sees you in your office to discuss the cervical spine surgery she is considering.

- She is worried about a perioperative complication because her father had a heart attack during colon surgery many years ago.
- PMH: DM 2, COPD, and CKD 3, TIA, H/O hysterectomy 5 years ago.
- Meds: Aspirin, formoterol, insulin 70/30, and lisinopril.



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- Blood pressure: 118/78 mm Hg; pulse: 86 beats/min
- Heart: S1 and S2 regular; no murmurs
- Lungs: clear, breath sounds are decreased at both bases
- Abdomen: soft, nondistended, and nontender
- Extremities: no peripheral edema
- HGBA1C 6.9% Creatinine 2.1 a month ago. These have been stable for the last year.
- A recent electrocardiogram was normal.



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She asks you about the risk for a complication during surgery like her father had.

- You are at a very low risk. I think it would be safe to have the surgery.
- You are at low risk. I think surgery will probably be safe.
- You are at moderate risk. I am somewhat concerned you could have a complication.
- You are at high risk. I am very concerned that you could have a complication.



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### What would you like to do?

- Patient calls your clinic to tell you that she understands the elevated risks but would like to proceed with the surgery anyway.
- Order stress test
- Do not order stress test



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### Case #3

62 year old man, comes to see you in your office before a scheduled abdominal aortic aneurysm (AAA) repair. His AAA has been gradually increasing in size, and a vascular surgeon has recommended an elective open repair.

He is having no symptoms from his AAA. He reports no other symptoms, including chest pain, cough, shortness of breath, and syncope. He is mostly sedentary, being limited by severe osteoarthritis in his knees and hips. He can walk slowly on flat ground with only moderate pain but cannot climb steps.

In addition to osteoarthritis, he also has a history of diabetes, hypertension, and coronary artery disease.

His medications include aspirin, carvedilol, insulin glargine, lisinopril, metformin, and naproxen.



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- His pulse is 64, and his blood pressure is 124/78.
- Heart: S1 and S2 regular; no murmurs
- Lungs: clear to auscultation b/l
- Abdomen: soft, nondistended, and nontender
- Extremities: no edema, his knees have significant crepitus and are painful with flexion and extension.
- His electrocardiogram shows old Q waves in the anterior leads with no new changes.



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### What do you recommend?

- Proceed with surgery without additional testing or management.
- Proceed with surgery with an increase of his beta-blocker dose.
- Perform stress test.
- Recommend against surgery.



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### Preop History & Examination

- PSH & PMH especially cardiac or pulmonary.
- Experience with anesthesia.
- Medications including OTC and steroid use.
- Use of Aspirin & NSAIDs ( should be d/c one week before surgery)
- Smoking and alcohol ,recreational drugs.
- Vaccination.
- Social support and need for assistance after discharge.
- Functional and nutritional assessment.



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### Preop Cardiovascular risk stratification

- Step 1: Is there clinical need for emergency noncardiac surgery?
- Step 2: Does the planned surgery have a low cardiac risk?
- Step 3: Does the patient have good functional capacity without symptoms?
- Step 4: Does the patient have clinical risk factors?
- Step 5: Are there active cardiac conditions?



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**EKG:**

- Not useful for low-risk surgical procedures.
- Reasonable for patients with CAD, significant arrhythmia, peripheral arterial disease, or other significant heart disease.
- 24 hr Holter: not recommended unless patient has syncope or significant bradycardia or tachycardia that was not previously evaluated.

**Echo:**

- Routine preoperative evaluation of LV function is not recommended
- Reassessment of LV function in clinically stable patients with previously documented LV dysfunction may be considered if there has been no assessment within a year.



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**Stress Testing:**

- No study has shown that interventions performed consequent to the results of the test improves outcomes.

**Preoperative cardiac catheterization:**

- With the exception of patients with an acute coronary syndrome, myocardial revascularization prior to non cardiac surgery to improve perioperative outcomes of non cardiac surgery is not recommended.
- Pharmacologic therapy holds more promise than coronary revascularization for the reduction of major adverse perioperative cardiac events that might complicate non cardiac surgery.



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**Clinical Risk factor assessment:**

- Combined with functional status and type of surgery to predict perioperative risk.
- Recent MI ( $\leq 6$  weeks), unstable angina, decompensated CHF, significant arrhythmias, severe valvular disease – Cards consult.
- Previous MI ( $> 6$  weeks ago), mild stable angina, compensated CHF, diabetes mellitus Stress test if high-risk procedure or patient has low functional capacity; consider assessment of left ventricular function (i.e., echocardiography)
- Rhythm other than normal sinus rhythm, abnormal ECG, history of stroke, advanced age, low functional capacity- Stress test if high-risk procedure and patient has low functional capacity



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- HTN : no specific guidelines. Manage per ACC/AHA criteria.
- Ventricular arrhythmias do not require special therapy if clinically stable.
- Communicate with Cardiology and surgeon if pacemaker/AICD present.
- PVC's and non sustained ventricular tachycardia are risk factors for the development of intraoperative and postoperative arrhythmias, but they are not associated with an increased risk of nonfatal MI or cardiac death in the perioperative period.



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- Pulmonary risk : Poorly defined.
- FEV1<1.5 = increased pulmonary complications
  - FEV1<1.0 = likely prolonged intubation
- Consider ABG if CO<sub>2</sub> retention, COPD, restrictive lung disease
- Smoking cessation, does timing matter ?
- Hematologic: h/o bleeding/thrombosis risk, h/o transfusion reaction.
- Endocrine: DM, thyroid, adrenal disease.
  - If ≥2wks. steroids in past year, give stress dose steroids (HC 100mg IV q8H)
- ID: cancel elective surgery when acute infectious illness present.



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- Renal: creatinine > 2.0mg/dl associated with increased risk.
- Neurologic: cerebrovascular disease associated with increased risk.
- Obesity : instructions for incentive spirometry
- Malnutrition : if malnutrition is severe, consider postponing surgery and providing preoperative supplementation



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## Risk estimation models:

- Risk models estimate the risk based on :
- History
- Physical examination
- EKG
- Type of surgery
- **Revised cardiac risk index (RCRI)**
- **College of Surgeons National Surgical Quality Improvement Program (NSQIP) risk model**



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## RCRI (Revised Cardiac Risk Index)

1. High-risk type of surgery (examples include vascular surgery and any open intraperitoneal or intrathoracic procedures)
2. History of ischemic heart disease
3. History of heart failure
4. History of cerebrovascular disease
5. Diabetes mellitus requiring treatment with insulin
6. Preoperative serum creatinine >2.0 mg/dL



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<http://riskcalculator.facs.org>

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## Surgery-Related Risk of Perioperative Cardiac Complications

### High risk:

- Emergency surgery
- Anticipated increased blood loss
- Aortic or peripheral vascular surgery

### Intermediate risk:

- Abdominal or thoracic surgery
- Head and neck surgery
- Carotid endarterectomy
- Orthopedic surgery
- Prostate surgery

### Low risk

- Breast surgery
- Cataract surgery
- Superficial surgery
- Endoscopy / Colonoscopy.
- Dental procedure



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## Functional assessment (MET)

Functional status can be expressed in metabolic equivalents (1 MET is defined as 3.5 mL O<sub>2</sub>uptake/kg per min, which is the resting oxygen uptake in a sitting position).

1 MET	≥4 METs	>10 METs
<ul style="list-style-type: none"> <li>• Take care of self</li> </ul>	<ul style="list-style-type: none"> <li>• Climb 1 flight stairs or walk up a hill</li> </ul>	<ul style="list-style-type: none"> <li>• Participate in strenuous sports including below:</li> </ul>
<ul style="list-style-type: none"> <li>• Eat/dress/use toilet</li> </ul>	<ul style="list-style-type: none"> <li>• Walk on level ground at 4 mph</li> </ul>	<ul style="list-style-type: none"> <li>• Singles tennis</li> </ul>
<ul style="list-style-type: none"> <li>• Walk indoors around house</li> </ul>	<ul style="list-style-type: none"> <li>• Run a short distance</li> </ul>	<ul style="list-style-type: none"> <li>• Football</li> </ul>
<ul style="list-style-type: none"> <li>• Walk 1-2 blocks on level ground at 2-3 mph</li> </ul>	<ul style="list-style-type: none"> <li>• Scrubbing floors/moving heavy furniture</li> </ul>	<ul style="list-style-type: none"> <li>• Basketball</li> </ul>
<ul style="list-style-type: none"> <li>• Dusting/wash dishes (some classify this as 1-4 METs)</li> </ul>	<ul style="list-style-type: none"> <li>• Golf, bowl, dance, doubles tennis, throw baseball or football</li> </ul>	<ul style="list-style-type: none"> <li>• Skiing</li> </ul>

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## Medication Management

- Antihypertensives : Hold diuretics if there is a concern of hypotension or fluid loss, continue ACE-I & ARBs
- Oral hypoglycemics: hold on day of surgery.
- Insulin: Consider reducing once daily basal insulin by 20%. Hold prandial insulin.
- Statins: Continue if taking before, consider starting if elevated CV risk or undergoing vascular surgery.
- Sedatives: Hold 24 hours before the procedure.
- Aspirin: Continue in those with coronary stents and if risk of cardiac events outweighs the bleeding risk.



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### Perioperative Beta blockers

- Do not start beta blockers preoperatively in patients without strong indications, as they may increase the risk of death and stroke.
- If used, long-acting beta blockers preferable over short-acting
- Continue if already on them.
- For patients scheduled for non cardiac surgery who should have been started on beta blocker for an appropriate indication (eg, heart failure, angina, hypertension, after MI), *avoid starting a beta blocker preoperatively, particularly if the time between initiation and surgery is less than two to four hours.*



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### Dual antiplatelet (DAPT) recommendations.

- Defer non-emergent noncardiac surgery for at least six months, irrespective of stent type.
- Prior to six months, surgery for at least three months after bare metal or drug-eluting stent placement.
- For most patients undergoing noncardiac surgery who are taking DAPT after PCI with stenting because they have not reached the recommended minimum duration of such therapy, we suggest continuing DAPT, as opposed to stopping it prior to surgery.
- In patients for whom the risk of bleeding is likely to exceed the risk of a perioperative event due to the premature cessation of DAPT, **we attempt to continue aspirin alone**



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- In patients for whom a bleeding complication could be catastrophic, such as patients undergoing neurosurgical, prostate, or posterior eye procedures, **stopping both antiplatelet agents might be reasonable.**
- For patients taking DAPT after PCI with balloon angioplasty who are scheduled to undergo elective noncardiac surgery, wait at least 14 days after PCI.

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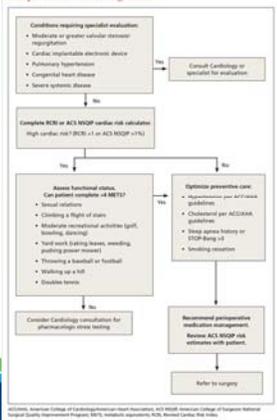
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FIGURE 1  
Preoperative evaluation algorithm<sup>1-4</sup>



1. ACC/AHA, American College of Cardiology/American Heart Association, ACS NSQIP, American College of Surgeons National Surgical Quality Improvement Program, B2M, Bleeding Complications Risk, Revised Cardiac Risk Index

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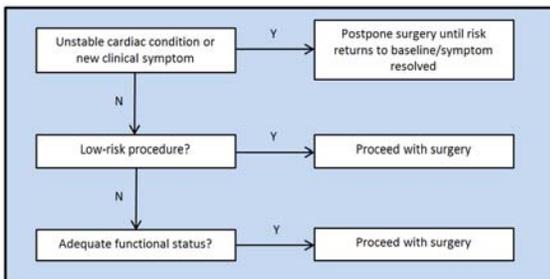
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### Putting it altogether




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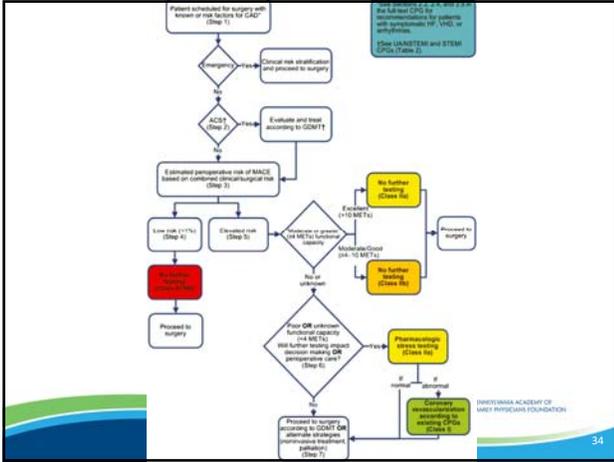
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**Case #1**

65-year-old woman who presents to your office for a preoperative evaluation for cataract surgery.

- From the chart you see she has a history of well compensated CHF, coronary artery disease, HTN, and DM.
- She takes aspirin, glyburide, lisinopril, metformin, and metoprolol.
- Denies having chest pain, dyspnea, dizziness.
- She is not physically active.
- Her exam reveals no concerns.



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What are your recommendations for this patient?

- Proceed to surgery without further testing
- Evaluate with cardiac stress testing
- Recommend against surgery



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## Case # 2

67-year-old woman with long-standing cervical radiculopathy sees you in your office to discuss the cervical spine surgery she is considering.

- She is worried about a perioperative complication because her father had a heart attack during colon surgery many years ago.
- PMH: DM 2, COPD, and CKD 3, TIA, H/O hysterectomy 5 years ago.
- Meds: Aspirin, formoterol, insulin 70/30, and lisinopril.



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- Blood pressure: 118/78 mm Hg; pulse: 86 beats/min
- Heart: S1 and S2 regular; no murmurs
- Lungs: clear, breath sounds are decreased at both bases
- Abdomen: soft, nondistended, and nontender
- Extremities: no peripheral edema
- HGBA1C 6.9% Creatinine 2.1 a month ago. These have been stable for the last year.
- A recent electrocardiogram was normal.



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She asks you about the risk for a complication during surgery like her father had.

- You are at a very low risk. I think it would be safe to have the surgery.
- You are at low risk. I think surgery will probably be safe.
- You are at moderate risk. I am somewhat concerned you could have a complication.
- You are at high risk. I am very concerned that you could have a complication.



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### What would you like to do?

- Patient calls your clinic to tell you that she understands the elevated risks but would like to proceed with the surgery anyway.
- Order stress test
- Do not order stress test



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### Stress testing is not indicated in asymptomatic patients with good functional capacity.

- Stress testing should be done only if it is likely to change management. In most patients with good functional status, stress testing is not likely to change management.
- If she were planning to undergo high-risk surgery rather than intermediate-risk surgery, some experts would consider ordering cardiac stress testing.



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### Choose wisely !

- Don't perform routine electrocardiography (ECG) screening as part of pre-operative or pre-procedural evaluations for asymptomatic patients with low perioperative risk of death or myocardial infarction.
- Avoid echocardiograms for preoperative/perioperative assessment of patients with no history or symptoms of heart disease.
- Don't obtain baseline diagnostic cardiac testing (trans-thoracic/esophageal echocardiography – TTE/TEE) or cardiac stress testing in asymptomatic stable patients with known cardiac disease (e.g., CAD, valvular disease) undergoing low or moderate risk non-cardiac surgery.



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### Case #3

62 year old man, comes to see you in your office before a scheduled abdominal aortic aneurysm (AAA) repair. His AAA has been gradually increasing in size, and a vascular surgeon has recommended an elective open repair.

He is having no symptoms from his AAA. He reports no other symptoms, including chest pain, cough, shortness of breath, and syncope. He is mostly sedentary, being limited by severe osteoarthritis in his knees and hips. He can walk slowly on flat ground with only moderate pain but cannot climb steps.

In addition to osteoarthritis, he also has a history of diabetes, hypertension, and coronary artery disease.

His medications include aspirin, carvedilol, insulin glargine, lisinopril, metformin, and naproxen.



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- His pulse is 64, and his blood pressure is 124/78.
- Heart: S1 and S2 regular; no murmurs
- Lungs: clear to auscultation b/l
- Abdomen: soft, nondistended, and nontender
- Extremities: no edema, his knees have significant crepitus and are painful with flexion and extension.
- His electrocardiogram shows old Q waves in the anterior leads with no new changes.



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### What do you recommend?

- Proceed with surgery without additional testing or management.
- Proceed with surgery with an increase of his beta-blocker dose.
- Perform stress test.
- Recommend against surgery.



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Low functional status => further assessing with stress test (vs patient #2 had good functional capacity)

- It reveals a large reversible defect. Patient subsequently undergoes coronary angiography, which demonstrates 60% narrowing of his left main coronary artery. After a multidisciplinary team meeting and discussion with the patient, he undergoes a percutaneous coronary intervention with placement of a bare metal stent and begins receiving clopidogrel (in addition to his aspirin).
- His vascular surgeon decides to delay his surgery for 2 months until his clopidogrel can be safely withheld for the surgery. He completes the surgery at that time without any adverse events and recovers well.



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### Revascularization?

- Revascularization is recommended preoperatively when it would be indicated anyway, not simply to reduce perioperative risk.
- If this surgery were not elective, the same reasoning about stress testing would not apply. If he needed an AAA intervention urgently, for example, proceeding to surgery without stress testing would be recommended.



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Thank you!

Questions or Comments



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Caring for the Caregiver***

Chasity Spagnola, DO and Nancy Nagib, MD

**Disclosures:**

The speakers have no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speakers have attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speakers indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**

# Caring for the Caregiver

Nancy Nagib, MD  
Chasity Spagnola, DO

Faculty  
WellSpan York Hospital Family Medicine Residency Program

March 8, 2019



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- We do not have any financial conflicts of interest to disclose.



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## Objectives

- Identify potential health effects of caregiver burden
- Recognize the distressed caregiver
- Develop a method to assess caregiver stress in your practice
- Provide effective resources, guidance and support for caregivers



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## Why is this Important?

“There are four kinds of people in the world:  
Those who have been caregivers;  
Those who are currently caregivers;  
Those who will be caregivers;  
And those who will need caregivers.”

- Rosalyn Carter, Former First Lady  
of the United States



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## Why is this important?

- 43.5 million caregivers provide unpaid care in the US each year
- 80% of people who need long term care & supportive services live in community settings
  - 78% receive care from unpaid family and friends



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## Why is this important?

- Responsibilities of caregivers:
  - Care coordination, assisting with ADLs, medical treatments
- Unpaid caregivers save the system an estimated \$306 billion annually (exceeds cost of nursing home care + home health care)



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## Why do caregivers choose to do this?

- A 2014 survey found 83% of caregivers viewed their overall experience as positive
  - Sense of giving back
  - Knowing loved one is getting excellent care
  - Personal growth
  - Increased meaning and purpose in life
  - Modeling caregiving



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## A Caregiver's Work

“largely invisible, unfairly distributed, with a huge effect on their opportunities in life”

-Rea, et al. “Invisible care.” 2010



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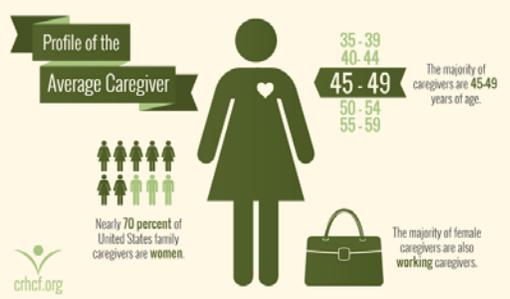
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## Who are Caregivers?



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## Case

- 61 yr old female who brings in her children who have special needs to their family doctor.
- On the way out after each visit, there are a few words exchanged...
  - Doc: "How are you holding up?"
  - Pt: "Hanging in there, one day at a time..."
  - Doc: "Let me know if you need anything"



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Caregivers are necessary.  
Caregivers are saving us money.

But...

they are not taking care of themselves!



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## Caregiving Risks

- Isolation
- Burnout
- Adverse health effects
- Suboptimal treatment or mistreatment of the care recipient
- Breaking point



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## Caregiver Burnout



- State of physical, emotional, and/or mental exhaustion that can create negative & unconcerned caregiver attitudes
  - Lack of needed support
  - Feeling overwhelmed by demands
  - Feelings of hopelessness
- Linked to adverse health effects for the caregiver



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## Case continued...

61 yo female presents to her PCP with inability to focus.

- Has 11 children, several of which have special needs or have experienced trauma.
- She has always been busy.
- She has tried to build time in for herself, but she cannot relax. She can't even sit to read a book.
- Her family and friends tell her she jumps from topic to topic and task to task. She cannot stay focused.
- She can't sleep at night.
- She tearfully states, "I'm just tired."




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## Caregiver Stressors

- Financial
  - Time away from paid employment
  - Risk of job loss
- Social
  - Time away from leisure activities
  - Interruption of personal relationships
- Physical
  - Lack of sleep
  - Lack of time for self-care
- Psychological
  - Lack of sense of control
  - Unreasonable self-demands



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## Health Effects of Caregiver Burden

- Depression & Anxiety
- Insomnia
- Weight gain
  - Decreased physical activity
  - Poor dietary habits
- Substance abuse
- Chronic pain
- Cancer
- Diabetes
- Heart disease
- Heartburn
- Less likely to engage in preventive health measures



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## Case Continued: 61 year old woman...

- Patient denied anxiety and was concerned she had ADHD.
- She was resistant to meds but after a few weeks agreed to starting Escitalopram 10 mg.



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## Case continued...



- 4 weeks later, patient returns for a follow-up on anxiety.
- She has some sadness with anxiety.
- She has a lot that she is responsible for including special needs children.
- She emotionally eats and reports she has had weight gain.
- She is going to a trauma support group.



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## Caregiver Self-Report

- 20% of caregivers describe their health as fair or poor
- 20-50% report depressive disorders or symptoms
- 17% believe their health has deteriorated (particularly if providing care for  $\geq 5$  yrs)
- 66% report they need help finding care for themselves, to balance work and family, and to manage emotional & physical stress



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## Effects on Care Recipients

- Caregivers in distress are not effective caregivers
- Leads to worse outcomes for care recipients



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## "Caregiver Crisis"

- Elderly population growing
- More intense care needed
  - Shorter hospital stays/ Incomplete recovery
  - Hypoactive delirium
- Shortage of direct care workers
  - Home & Nursing Home
- Lack of alternatives



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## We have a Crisis...

- What has been shown to be effective in helping the caregiver?



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## What We Know

- Interventions focused only on information, support groups, or management of behavioral disorders have not proven to be effective.
- Social Support is Key
  - Emotional
  - Instrumental
  - Appraisal
  - Informational
- Informal social support was associated with lower caregiver burden while formal social support was not.



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Rosell-Murphy et al. BMC Family Practice 2014, 15:53  
<http://www.biomedcentral.com/1471-2296/15/53>



STUDY PROTOCOL

Open Access

### Intervention to improve social and family support for caregivers of dependent patients: ICIAS study protocol

Magdalena Rosell-Murphy<sup>1\*</sup>, Josep Mª Bonet-Simó<sup>2</sup>, Esther Baena<sup>3</sup>, Gemma Prieto<sup>4</sup>, Eva Belleirín<sup>5</sup>, Francesc Solà<sup>6</sup>, Montserrat Rubio<sup>7</sup>, Ilona Kler<sup>8</sup>, Pascuala Torres<sup>9</sup>, Sonia Mirasol<sup>9</sup> and the ICIAS research group

- "... increasing and strengthening the primary caregiver's social support improves quality of life and decreases caregiver burden..."
- Suggests a "...strategy focused on the family system and on caring for both the caregiver and dependent patient..."



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J Epidemiol 2016;26(12):422-428  
doi:10.2188/jea.JE20150263

Original Article

**Informal and Formal Social Support and Caregiver Burden: The AGES Caregiver Survey**

Koichiro Shiba<sup>1</sup>, Naoki Kondo<sup>1</sup>, and Katsunori Kondo<sup>2,3</sup>

<sup>1</sup>Department of Health and Social Behavior/Health Education and Health Sociology, School of Public Health, The University of Tokyo, Tokyo, Japan  
<sup>2</sup>Center for Preventive Medical Sciences, Chiba University, Chiba, Japan  
<sup>3</sup>Department of Gerontological Evaluation, Center for Gerontology and Social Science, National Center for Geriatrics and Gerontology, Aichi, Japan

Received September 11, 2015; accepted January 5, 2016; released online May 14, 2016

"... informal social support was significantly associated with lower caregiver burden, while formal support was not."  
 "...formal social support was associated with lower caregiver burden only if it was from family physicians."



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**Bridge the Gap:  
Caring for the Caregiver**

Knowledge of Caregiver Burden  Intervention



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**Caring for the Distressed Caregiver**

- Step 1: Recognize the "hidden patient"
- Step 2: Recognize the person in the caregiver role who is struggling
- Step 3: Offer a caregiver assessment to identify high levels of burden
- Step 4: Plan for intervention



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## Benefits of Caregiver Assessments

- Build morale and capacity
- Caregiver:
  - 1) feels acknowledged, valued, better understood
  - 2) gains a better grasp on their role and the abilities required to carry out tasks
  - 3) understands care in the home may be jeopardized if strains are too great
- Determine eligibility for services/ referrals



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## Barriers to Caregiver Assessment

*The caregiver isn't my client. Besides, this would be an intrusion into the caregiver's time and privacy.*



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## Barriers to Caregiver Assessment

*If I talk to family members, I won't have time to complete my other responsibilities.*



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## Barriers to Caregiver Assessment

*I won't have the answers or resources to deal with a caregiver's additional issues.*



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## What should be assessed?

- Caregiver symptoms, depression
- Family structure, dynamics, resources
- Social/community context of the caregiver



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## Caregiver Screening

1. Do you feel that you are currently under a lot of stress?
2. What aspects of your day are most stressful?
3. Have you been feeling down or blue lately?
4. Do your family and friends visit/telephone often?
5. Do your friends and family watch your relative so that you have time for yourself?
6. What do you do to relieve stress and tension?



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## Caregiver Assessment

- Carer Support Needs Assessment Tool (CSNAT)
- Adapted Zarit Interview
- AMA's Caregiver Self Assessment
  - [www.healthinaging.org](http://www.healthinaging.org)



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## Carer Support Needs Assessment Tool

- Evidence-based tool
- Facilitates tailored support for caregivers of adults with long term life-limiting conditions
- Enables caregivers' needs to be identified and addressed
- CSNAT.org



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### The Zarit Burden Interview

Circle the response that best describes how you feel.

	Never	Rarely	Sometimes	Quite frequently	Nearly always
1. Do you feel that your relative asks for more help than he/she needs?	0	1	2	3	4
2. Do you feel that because of the time you spend with your relative that you don't have enough time for yourself?	0	1	2	3	4
3. Do you feel stressed between caring for your relative and trying to meet other responsibilities for your family or work?	0	1	2	3	4
4. Do you feel embarrassed over your relative's behavior?	0	1	2	3	4
5. Do you feel angry when you are around your relative?	0	1	2	3	4
6. Do you feel that your relative currently affects your relationships with other family members or friends in a negative way?	0	1	2	3	4
7. Are you afraid what the future holds for your relative?	0	1	2	3	4
8. Do you feel your relative is dependent on you?	0	1	2	3	4
9. Do you feel strained when you are around your relative?	0	1	2	3	4
10. Do you feel your health has suffered because of your involvement with your relative?	0	1	2	3	4
11. Do you feel that you don't have as much privacy as you would like because of your relative?	0	1	2	3	4
12. Do you feel that your social life has suffered because you are caring for your relative?	0	1	2	3	4
13. Do you feel uncomfortable about having friends over because of your relative?	0	1	2	3	4
14. Do you feel that your relative seems to expect you to take care of him/her as if you were the only one he/she could depend on?	0	1	2	3	4

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## Integrating Assessments in Office Visits

- Consider screening questions
- Offer a self-assessment for the caregiver
- Schedule a dedicated appointment for the caregiver



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Knowledge of  
Caregiver Burden



Intervention



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## Direct Caregiver Support

- Take time for yourself
- Maintain a healthy diet & exercise
- Address acute health care needs
- Seek preventive health care
- Join a support group
- Seek respite care
- Therapy/Family Therapy
- Provide resources



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## Self-Care for the Caregiver

- Meditation
- Breathing exercises
- Exercise
- Writing/journaling
- Music, dance
- Being in nature
- Make time for appointments, errands, friends and time to do things that bring you joy



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## Social Support

- Who can help?
  - \*Family, friends, church
  - \*PCP support
  - Local senior-service organizations
  - If resources allow, outsource a few hours of caregiving/week
    - adult day programs
  - Support groups: in person or online
  - Mental health support



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## Financial Support

- Encourage caregivers to research employer policies & programs
- Assistance with planning for care financially
  - Area Agency on Aging
  - Eldercare Financial Assistance Locator
    - [www.payingforseniorcare.com](http://www.payingforseniorcare.com)
  - Elder care resource planners
- State Programs
  - Caregiver Respite Care program—Caregivers can apply for this through the local AAA to get free respite care
  - Medicaid State programs to be paid as a family caregiver
    - PA Options Program



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**FAMILY CAREGIVER ALLIANCE**  
National Center on Caregiving  
Published on Family Caregiver Alliance (<https://www.caregiver.org/>)

**Pennsylvania Options Program**

The Options program is a non-Medicaid program that allows certain family members to be hired and paid as the personal care provider. Other services may include:

- In-home care
- Medical supplies
- Assistive devices
- Respite
- Counseling

Area Agency on Aging Locator: <https://www.aging.pa.gov/local-resources/Pages/AAA.aspx>

**Website:**  
<https://www.aging.pa.gov/publications/policy-procedure-manual/Documents/Chapter%20VI%20OPTIONS%20.pdf>

**Phone:**  
Pennsylvania Department of Aging: 717-783-1550

\*see website for local Area Agency on Aging county office contact information

**Caregiver Eligibility:**

**Care Recipient Eligibility:**

- Must be a resident of Pennsylvania
- Must be 60+
- Must require assistance with daily living activities
- Cannot be receiving services from Medicaid programs

<https://www.aging.pa.gov/publications/policy-procedure-manual/Documents/Chapter%20VI%20OPTIONS%20.pdf>

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Call us today at 1-877-998-LIFE (5433) to learn about the Paid Caregiver Program. [LEARN MORE](#)

Home News Blog Careers Search 1-877-998-LIFE (5433) Facebook Twitter

**Senior LIFE**  
Home Today. Home for LIFE.

[About the Program](#) [Eligibility](#) [Locations](#) [Contact Us](#)

**About the LIFE Program**

No costs to enroll in Senior LIFE if Medicaid eligible.  
If not eligible for Medicaid: option to pay privately.

PENNSYLVANIA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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**Education**

- Understanding of the care recipient’s illness or disability
- Skills training
- Available services and resources

PENNSYLVANIA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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## Online Resources for Caregivers

- Family Caregiver Alliance:
  - <https://www.caregiver.org>
- Family Caregiver Council: Caregiver Action Network:
  - <https://caregiveraction.org/>
- Federal Caregiver Support:
  - <https://www.usa.gov/disability-caregiver>
- Paying for Senior Care:
  - [www.payingforseniorcare.com](http://www.payingforseniorcare.com)
- AARP:
  - <https://www.aarp.org/caregiving/>
- Local Area Agency on Aging



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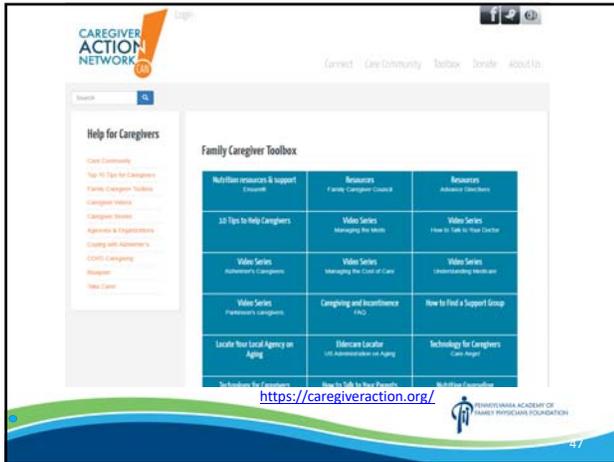
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## Area Agency on Aging

- Caregiver Support Program: reimbursement to the caregiver for services
  - Respite, consumable medical supplies, adult day care, personal care
- In-home Community Based Services
  - Help with ADLs, respite care

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## Case continued...



"I really am doing well. I think the medication [escitalopram] has helped me as I take it at night, and I sleep well. That helps a lot.

I have been having a lot of rough times and have remained with so much more calm, which I attribute some to the medication and also to the Holy Spirit!

God also has connected me with some great support as far as consultants for children who have early trauma and attachment issues which has been amazing!

I am going to be able to attend a few conferences to learn more about how to work with these kinds of kids.

I am also crafting time for myself. Thank you for your help."



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## Case continued...

- Burden decreased & Quality of Life improved
- Attributed to:
  - Treatment for anxiety
  - Spiritual care for herself
  - Meeting with experts who understand children with early trauma/ education about caring for these children
  - Taking time for herself



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**“Rest and self-care  
are so important.  
When you take time  
to replenish your spirit,  
it allows you to serve  
others from the overflow.  
You cannot serve from  
an empty vessel.”**

~ Eleanor Brown



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## Summary

- Caregivers are important
- Caregiver burden is real
- We need to care for caregivers
  - Recognize caregivers
  - Caregiver assessment
- Social support is helpful for caregivers
  - Informal
  - PCP



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***The Application of Moral Principles to End-of Life Issues***  
Peter Clark, S.J., Ph.D.

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

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# The Applications of Moral Principles to End-of Life Issues

Peter A. Clark, SJ., Ph.D.

Friday, March 8, 2019

The speaker has no conflict of interest.



ESGORY

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## Autonomy

- Derived from the Greek word which means “self-rule.” In bioethics, autonomy typically refers to the patient’s right of self-determination concerning medical care.
- Autonomy may be used in various senses including freedom of action, effective deliberation, and authenticity. It supports such moral and legal principles as respect for persons and informed consent



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## Informed Consent

- Except in emergency situations, physicians are morally and legally required to obtain a patient’s informed consent to invasive procedures.
- The element of informed consent include: professional disclosure, patient comprehension of information, patient voluntariness and competence to consent.



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## Assent

- When an individual lacks decisional capacity or decisional authority, agrees to go along with a proposed medical intervention for himself or herself. It includes the following 4 elements:
  - Helping the patient achieve a developmentally appropriate awareness of the nature of his/her condition.
  - Telling the patient what he/she can expect with tests and treatments.
  - Making a clinical assessment of the patient's understanding of the situation and the factors influencing how he/she is responding.
  - Soliciting an expression of the patient's willingness to accepted the proposed care.



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## Competence

- Refers to a patient's capacity to make decisions about the provision of medical care for him or herself. It is an element of informed consent, and involves comprehending information, choosing in accordance with one's values, and communicating a decision.
- The Criterion For Competency include:
  - Understanding the potential material benefits, risks and alternatives involved in a specific proposed health care decision.
  - Making that health care decision on his/her own behalf.
  - Communicating that decision to any other person.



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## Proxy Consent

- When a patient has been determined to be incompetent and incapable of giving informed consent to the provision of medical treatment a proxy may be appointed to make decisions for the patient. The proxy can be one of the following:
  - 1) Durable Power of Attorney For Health Care
  - 2) Next of Kin
  - 3) Guardian AD Litem



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## Substituted Judgment

- In a case of substituted judgment, a proxy decision maker makes a decision about medical treatment for an incompetent patient based upon his or her understanding of what the patient would have decided if competent.
- The “substituted judgment standard” has been important in influential legal decisions and is typically contrasted with the “best interests standards.”



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## Best Interests

- A decision-making standard in the absence of an advance directive or when a substituted judgment is not possible, best interests involve more objective, societally shared criteria about what reasonable persons would probably choose in a particular situation.
- Based on the “Reasonable Person Standard” in Tort Law.



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## Beneficence

- The principle involves duties to prevent harm, remove harm, and promote the good of another person. In bioethics, beneficence refers to the obligation of health care professionals to seek the well-being or benefit of the patient. It involves maximizing benefits and minimizing harms.



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## Nonmaleficence

- This principle prohibits the infliction of harm, injury, or death upon others, and supports more specific moral rules such as the prohibition of killing. Nonmaleficence is related to the maxim *primum non nocere* – “above all, or first, do no harm” – which is widely used to describe the duties of health care professionals.
- The duty not to harm others is typically considered more stringent than the duty to benefit others and it also imposes moral limits on autonomy.



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## Justice

- As a general moral concept, justice requires that persons be given what they are due. Theories of justice have specified different criteria upon which such a determination can be made, for example, societal benefits might be distributed to persons based on equality, need, effort, merit, or contribution to society.
- In bioethics, distributive justice is especially important in decisions about the fair allocation of health care resources.



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## Sanctity of Life

- This principle assumes that the moral and religious value of life transcends judgments about its quality. In bioethics, the sanctity of life principle is associated with conservative, life-prolonging positions in debates over such matters as abortion, infanticide, suicide, and euthanasia.
- Many ethicists, like Richard McCormick, S.J., understand sanctity of life in a broader context. They are not separate entities but intimately connected. Quality of life specifies what sanctity of life entails.



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## Quality of Life

- Quality of life is often contrasted with sanctity of life and indicates that there are moral limits to the use of life-prolonging medical interventions. It is portrayed as a patient-centered moral criterion, emphasizing the worth of the patient's own life to him or herself.



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## Burden/Benefit Analysis

- This principle weighs the probability and magnitude of potential harm against the probability and amount of potential benefit. Various measures of harm and risk are used. This form of analysis is widely used to set standards of safety and health for the workplace and to assess medical technologies.



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## Slippery Slope Argument

- A "slippery slope" or "wedge" argument raises questions about the precedents that may be set and the consequences that may follow if a particular practice is accepted.
- In its logical version, the slippery slope argument suggests that the acceptance of X already contains an implicit justification of Y, even if in practice Y never occurs.



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## The Three-Font Principle

- Intention: (*finis operantis*) is the internal part, or the formal element of moral action. It is the end, or that which we are after in doing what we do:
  - The whole purpose of the action
- Act-in-itself: (*finis operis*) or the means-to-an-end, is the external part, or the material element of the moral act.
- Circumstances: is used to determine whether a physical action is properly proportionate to the intention. Answers the questions: Who? What? When? Why? How much? How often? etc.
  - Consequences - the effects of the action
  - Foreseen and Unforeseen



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## Intrinsic Evil

- Traditional Catholic moralists have claimed that certain actions (masturbation, artificial contraception, direct sterilization, artificial insemination, direct killing of the innocent, divorce and remarriage) were intrinsically morally evil in themselves.
- These actions were regarded as such by being contrary to nature (following the “order of nature” interpretation of natural law) or by defect of God’s right.



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## Principle of Double Effect

- According to the principle of double effect, the action has 2 foreseen consequences-one good and one evil. The action is morally permissible if it meets the 4 conditions of the principle.
  - 1) The action is good or in indifferent.
  - 2) The good effect is not produced by means of evil effect (are caused independently).
  - 3) The evil effect is not directly intended.
  - 4) There must be a proportionate reason for performing the action in spite of the evil consequences.



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### Principle of the Lesser Two Evils

- When there are two alternatives placed before the individual, each of which seems to be sinful, the agent must choose the lesser of the two evils. When placed in this situation.
  
- Alphonsus Liguori states:  
The individual should:
  - 1) Seek counsel of a prudent person.
  - 2) Choose the lesser of the two evils.
    - Is a perplexed conscience.



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### Principle of Totality

- Was originated by Thomas Aquinas in the *Summa Theologica II-II* 65,1. It was in response to the question:  
***May a person, in some circumstances sacrifice one part or function in the interest of another or of the whole?***
  
- Since any member is part of the whole body, it exists for the sake of the whole as the imperfect for the sake of the perfect. The principle of totality can be explained in one of two life-respecting ways.



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### Principle of Proportionate Reason

- "*Proportionate*" refers to the relation between the specific value at stake and the premoral evils (the limitations, the harms, or the inconvenience) which will inevitably come about in trying to achieve that value
  
- "*Proportionate reason*" refers to both a specific value and its relation to all the elements in the action.  

*Criteria for Proportionate Reason:*

  - 1) The means used will not cause more harm than necessary to achieve the value. The specific value being sought must be at least equal to the value being sacrificed.
  - 2) No less harmful way exists at present to protect the value.
  - 3) The means used to achieve the value will not undermine it.



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## Direct/Indirect Distinction

- Aquinas' explanation of a morally permissible life-taking act of self-defense is frequently cited as a key source for the logic of this distinction. Accordingly one may never directly intend the death (of the innocent) as the moral species or motive of a lethal act.
  
- However, if one's direct deed and intention are focused on a defensible human good (e.g. self-defense), then the indirect result (the aggressor's death) is regrettably accepted, though unintended, and the person (agent) is morally free of blame.



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## Ordinary/Extraordinary Means Distinction

- *The traditional Catholic distinction was formulated by ethicist Gerald Kelly, S.J.*
  
- **Ordinary** means of preserving life are all medicines, treatments, and operations, which offer a reasonable hope of benefit for the patient and which can be obtained and used without excessive expense, pain, or other inconvenience.
- **Extraordinary** means are all medicines, treatments, and operations, which cannot be obtained or used without excessive expense, pain or other inconvenience, or which, if used, would not offer a reasonable hope of benefit.
  - Based on the Benefit/Burden Calculus
  - Is a patient-centered, quality of life approach.



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## Formal & Material Cooperation

- **Formal Cooperation:** is any form of assisting, advising or counseling that would directly cooperate in intending an immoral action.
  
- **Material Cooperation:** refers to any form of assisting, advising, or counseling that seeks the good that is being done in an action and only indirectly allows the evil, which evil the cooperator would prevent if he/she could.  
In this case the person **does not** join in the immoral intention of another.
  - 1) **Immediate Material Cooperation:** while not sharing in the intention of the agent nevertheless provides the means whereby the agent is able to realize his/her intended evil purpose.
  - 2) **Mediate/Remote Material Cooperation:** in contrast, neither shares in the intention of the doer of the immoral deed nor shares in the action of the evil doer.



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Formal & Material Cooperation (Cont)

*Material Cooperation can be morally justified under three conditions:*

- 1) Refusal to cooperate would result in a greater evil.
- 2) The cooperation is not immediate, but mediate/remote.
- 3) There is not serious degree of scandal involved.

**Point:** A decision in favor of material cooperation cannot be considered a permanent one. With changing circumstances, the cooperation of the individual must be morally reassessed.



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***When to Stop Screening and Testing – Mammograms, Paps,  
Colonoscopy***  
Stacey Robert, MD

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

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# When To Stop Screening

Breast, Cervical and Colorectal Cancer  
Stacey Robert, MD  
WellSpan York Hospital Family Medicine  
Residency Program



GSACRE

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I have no financial disclosures.



GSACRE

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# Objectives

- To review recommendations for when to stop screening for cervical cancer, breast cancer, and colon cancer in patients as they age
- To reconcile guidelines from various organizations
- To review some decision making tools to help guide our patients



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## Who are the players?

- USPSTF
- ACS
- ACOG
- ASG
- AGS



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## USPSTF Grading

Grade	Definition	Suggestions for Practice
<b>A</b>	The USPSTF recommends the service. There is high certainty that the net benefit is substantial.	Offer or provide this service.
<b>B</b>	The USPSTF recommends the service. There is high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial.	Offer or provide this service.
<b>C</b>	The USPSTF recommends selectively offering or providing this service to individual patients based on professional judgment and patient preferences. There is at least moderate certainty that the net benefit is small.	Offer or provide this service for selected patients depending on individual circumstances.
<b>D</b>	The USPSTF recommends against the service. There is moderate or high certainty that the service has no net benefit or that the harms outweigh the benefits.	Discourage the use of this service.
<b>I</b> Statement	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of the service. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.	Read the clinical considerations section of USPSTF Recommendation Statement. If the service is offered, patients should understand the uncertainty about the balance of benefits and harms.

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### Levels of Certainty Regarding Net Benefit

Level of Certainty*	Description
High	The available evidence usually includes consistent results from well-designed, well-conducted studies in representative primary care populations. These studies assess the effects of the preventive service on health outcomes. This conclusion is therefore unlikely to be strongly affected by the results of future studies.
Moderate	The available evidence is sufficient to determine the effects of the preventive service on health outcomes, but confidence in the estimate is constrained by such factors as: <ul style="list-style-type: none"> <li>• The number, size, or quality of individual studies.</li> <li>• Inconsistency of findings across individual studies.</li> <li>• Limited generalizability of findings to routine primary care practice.</li> <li>• Lack of coherence in the chain of evidence.</li> </ul> <p>As more information becomes available, the magnitude or direction of the observed effect could change, and this change may be large enough to alter the conclusion.</p>
Low	The available evidence is insufficient to assess effects on health outcomes. Evidence is insufficient because of: <ul style="list-style-type: none"> <li>• The limited number or size of studies.</li> <li>• Important flaws in study design or methods.</li> <li>• Inconsistency of findings across individual studies.</li> <li>• Gaps in the chain of evidence.</li> <li>• Findings not generalizable to routine primary care practice.</li> <li>• Lack of information on important health outcomes.</li> </ul> <p>More information may allow estimation of effects on health outcomes.</p>

\*The USPSTF defines certainty as "likelihood that the USPSTF assessment of the net benefit of a preventive service is correct." The net benefit is defined as benefit minus harm of the preventive service as implemented in a general, primary care population. The USPSTF assigns a certainty level based on the nature of the overall evidence available to assess the net benefit of a preventive service.

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## Screening in the US

- Healthy older patients are often under-screened.
- Older patients who are poor in health are often over-screened.
- In general, we should look for an individualized approach that takes into account life expectancy, benefit/harm of screening and patient preferences.



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## Life expectancy

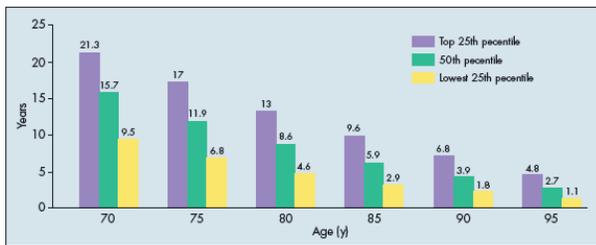


Figure – Upper, middle, and lower quartiles of life expectancy for women at selected ages are shown here. (From Velder IC, Coatsky KE. JAMA. 2001;1)



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## Cervical Cancer Screening

### USPSTF

- Recommends against screening women over the age of 65 years who have adequate prior screening and are not otherwise at high risk for cervical cancer screening (no CIN 2 or 3)



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## Cervical cancer screening....

- What is “adequate prior screening”?
  - ACS/ASCCP/ASCP define this as 3 consecutive negative cytology results or 2 negative HPV results within 10 years before cessation of screening
  - With the most recent test occurring within 5 years



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## Cervical cancer screening...

- What if they have a history of a high grade pre-cancerous lesion though?
  - Routine screening should occur for at least 20 years after spontaneous regression or appropriate treatment of the lesion
  - EVEN if they are older than 65 years



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## Cervical cancer screening...

- What if the woman has a new partner after age 65?
  - Screening should not resume after cessation



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## Cervical cancer screening...

- Is there anyone else who should be screened after age 65 years?
  - Those who do not have accurately accessed or documented screening (other countries, minorities, limited access)
  - In utero DES exposure
  - Immunocompromised women



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## Case #1

- 60 yo female comes in for annual physical with all negative Paps and negative HPV and says:

But doc, I've been with the same man for 35 years, he has only been with me. Do I really need this again? I hate these pelvic exams.



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## What do you say?

1. Yes you do. (Perform screening.)
2. But you can celebrate – this is the last one!
3. If you liked these exams, I would refer you to a psychiatrist or call the local medical school so you can be paid for them and teach 2<sup>nd</sup> year students how to do them.



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## Case #2

- 67 yo female, last Pap 6 years ago, all have been negative

Screen  
(and be done)



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## Case # 3

- 67 yo Cambodian female who has been in the US for 10 years. Last pap was in a clinic in Philadelphia around 4 years ago. No known history of CIN – “everything was normal”

Screen  
And get records



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## Case #4

- 67yo treated for HGSIL 18 years ago, all results negative since then, last pap 3 years ago

Screen

- What if she had been treated 21 years ago?

Don't screen



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### Case #5

- 65yo with a history of TAH for DUB  
Question: Did they remove the cervix?  
If so, then no screening



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### Case #6

- 67yo HIV + with low viral load and normal CD4 count, no history of abnormal pap smears

Screen



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### How about the HPV vaccination?

- For now, keep screening. We don't have enough long-term data to tell us when to stop screening.



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## Breast Cancer Screening

- USPSTF
  - Insufficient evidence for screening for breast cancer in women age 75 or older



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## Breast Cancer Screening

- ACS
  - Stop when life expectancy is less than 10 years
    - Qualified recommendation
- American Geriatric Society
  - Consider screening women under age 85 with at least 5 years + life expectancy
  - If over 85, screen if they have excellent functional status or who feel strongly about benefits



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## Breast Cancer Screening

- ACOG Practice Bulletin 2017
  - Screen up to age 75 for average risk women, shared decision making after age 75 taking into account a woman's health status and longevity
  - Don't screen women who would not seek further evaluation or treatment
  - Consider screening those who have a greater than 50% probability of living 10 years or more



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## Why?

- None of the major RCT's involving breast cancer screening included women over the age of 75, few enrolled even 70-74 yo's
- Of course, there are some benefits of screening for breast cancer based on observational studies.



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## Benefits

- There is lower breast cancer mortality over the age of 75 but the reduction wasn't statistically significant after the age of 85 and none for those with severe comorbidity.
- There is detection at earlier stages which may result in reduced morbidity from advanced disease.
- There are less false-positives in older women.
- Reassurance for the patient.



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## But...

- Benefits of screening occur only several years after the actual screening test – whereas the % of who survive long enough after to benefit decreases with age
- Women of older age are at greater risk for dying of other conditions



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## Harms

- There are harms associated with screening:
  - Detecting a cancer that won't shorten her life
    - But over diagnosis can lead to over treatment that may be harmful
  - Detecting a tumor that may not become clinically relevant or important in her lifespan



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## Why?

- Breast cancer biology changes in older women
  - Interval between detection and clinically evident breast cancer
    - Age 50 – 2 years
    - Age 80-84 – 9 years
  - Less aggressive tumors and metastatic spread is slower
    - Only 28-39% of DCIS cases are thought to develop into invasive breast cancer in a 10-15 yr follow up



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## Why?

- Life expectancy

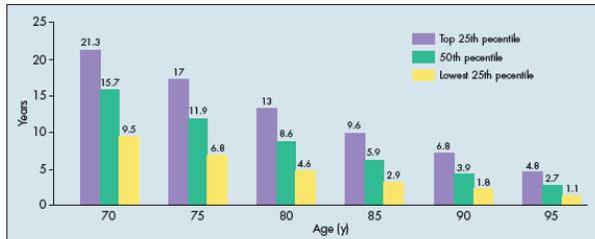


Figure – Upper, middle, and lower quartiles of life expectancy for women at selected ages are shown here. From Weber LC, Coinsky KE, JGIM. 2001;16

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## Why?

- Competing risks
  - Women with 3 or more comorbidities are 20x more likely to die of a cause of other than breast cancer within 3 years (HTN, DM, MI, CVA, respiratory disease, other cancers)
  - Only 2% of females over age 80 die of breast cancer



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## Why?

- Benefits of treatment are unknown
  - Greater morbidity
  - Increased toxicity (chemo related mortality - 1.5% over the age of 65 vs 0.2% in 50 yo)
  - QOL from side effects of chemo, tamoxifen, aromatase inhibitors – these include cognitive decline, fatigue, breast pain, bone pain, arthritis, etc)



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## Any studies?

- Smith-Bindman did a retrospective look at 690K Medicare beneficiaries in California (ages 66-79), screened and not screened
  - 43% reduction in risk of metastatic disease in the screened group
- Mandelblatt – small benefit to screening over the age of 69 which diminished as they neared age 80, but that benefit was halved in the presence of major comorbidity



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- Kerlikowske did a cost effectiveness analysis when taking into account other health factors
  - Small benefit in those with a higher BMD, no benefit in those with a lower BMD
- Observational and cost-effectiveness studies have helped guide multidisciplinary decision-making teams



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Is there anything that can help us decide with a patient?

- Yes
  - ePrognosis
  - <https://eprognosis.ucsf.edu/>
  - Series of questions asking about general health, other comorbidities and risk factors, functional status



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**RESULTS**

SCREENING FOR BREAST CANCER IS MORE LIKELY TO HELP THIS PERSON THAN TO HARM THEM.

THUS, SCREENING WOULD GENERALLY BE RECOMMENDED.



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## Colon Cancer Screening

- USPSTF
  - Age 76-85 for average risk patient: if previously screened regularly, recommends against routine screening; there may be considerations for individual screening (Grade C)
  - >85: recommends against screening (Grade D)
  - Remember - insufficient evidence for CT colonography and fecal DNA testing

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## Colon Cancer Screening

- ACS
  - Individualize for age 76-85 – based on patient preference, life expectancy, health status and prior history (qualified recommendation)
  - Discourage in those older than 85

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## Colon Cancer Screening

- American Gastroenterology Society
  - Recommends discontinuation when persons who are UTD with screening with prior negative screening (esp colonoscopy) reach the age of 75 or have < 10 years of life expectancy
  - Persons without prior screening should be considered for screening up to age 85, depending on comorbidities



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## Risks of screening the elderly

- Prep for colonoscopy – electrolyte imbalances, frequent toileting and falls
- Sedation (benzo's esp) – slow to clear; aspiration
- Perforation – more likely esp in women
- Bleeding – less tolerated



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- ePrognosis for colon cancer as well



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**RESULTS**

IT IS NOT CLEAR THAT GETTING SCREENED FOR COLORECTAL CANCER WILL HELP THIS PERSON.

THIS PERSON'S THOUGHTS AND FEELINGS SHOULD BE THE MAJOR DRIVER OF THE DECISION.

[VIEW HARMS](#) [VIEW BENEFITS](#)

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**LEARN MORE**

OF 1000 PEOPLE LIKE THIS PERSON WHO GOT TESTED FOR COLORECTAL CANCER

**100**

PEOPLE WILL EXPERIENCE HARM IN THE FIRST YEAR.

**LEARN MORE**

AFTER 10 YEARS, OF 1000 PEOPLE LIKE THIS PERSON WHO GOT TESTED FOR COLORECTAL CANCER

**1**

WILL AVOID DEATH FROM COLORECTAL CANCER.

**LEARN MORE**

AFTER 10 YEARS, OF THE 1000 PEOPLE LIKE THIS PERSON

**300**

WILL DIE WHETHER OR NOT THEY GOT TESTED FOR COLORECTAL CANCER.

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## Lung Cancer Screening

- Stop at age 80

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## Prostate Cancer

- USPSTF – Recommends against PSA-based screening in all men regardless of age
- American Urologic Society – shared decision making age 55-69 and no screening in men aged 70+ or in those who have a life expectancy less than 15 years.



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### BEST PRACTICES IN PREVENTIVE MEDICINE: RECOMMENDATIONS FROM THE CHOOSING WISELY CAMPAIGN

RECOMMENDATION	SPONSORING ORGANIZATION
Do not recommend cancer screening in adults with a life expectancy of less than 10 years.	Society of General Internal Medicine
Do not recommend screening for breast, colorectal, or prostate cancer if life expectancy is estimated to be less than 10 years.	Society for Post-Acute and Long-Term Care Medicine
Do not screen women older than 65 years for cervical cancer who have had adequate prior screening and are not otherwise at high risk of cervical cancer.	American Academy of Family Physicians
Do not perform screening for cervical cancer in low-risk women 65 years or older and in women who have had a total hysterectomy for benign disease.	American College of Preventive Medicine
Avoid colorectal cancer screening tests in asymptomatic patients with a life expectancy of less than 10 years and no family or personal history of colorectal neoplasia.	American College of Surgeons
Do not perform prostate-specific antigen testing for prostate cancer screening in men with no symptoms of the disease when they are expected to live less than 10 years.	American Society of Clinical Oncology

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## Talking points about stopping screening

- Time to start, time to stop
- There is a risk of screening, esp in patients with other comorbidities
- Remind of short term preventative measures for things that are more likely to cause decreased QOL – recommend exercise, screening for incontinence, depression screening, fall prevention, polypharmacy



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## Summary

- In general, we should take into account life expectancy, risk of screening, and patient preference
- Cervical cancer – until age 65
- Breast Cancer – until age 75, possibly after that
- Colon Cancer – until age 75, possibly between 75-85, not after 85
- Use decision making tools with your patients to review benefits and harms



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## References

- USPSTF Clinical Guidelines
- American Cancer Society Guidelines
- American College of Obstetrics and Gynecology Practice Bulletins
- American Gastroenterology Society Guidelines
- American Geriatric Society Guidelines
- American Academy of Family Physicians Guidelines
- Kotwal, et al. Cancer Screening in the Elderly: A Review of Breast, Colorectal, Lung and Prostate Screening. *Cancer J.* 2017, July-Aug; 23(4): 246-253.
- Salzman, B et al. Cancer Screening in Older Patients. *AFP.* 2016, Apr; 93(8): 659-667.
- Schonberg, M. Breast Cancer Screening: At What Age to Stop? *Consultant.* May 2010; 50(5).
- Braithwaite, D et al. Optimal Breast Cancer Screening Strategies for Older Women: Current Perspectives. *Clin Interv Aging.* 2016; 11:111-125



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## Questions?



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Fecal Incontinence and Constipation in the Elderly***  
Abdul Waheed, MD

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**



## Fecal Incontinence and Constipation in the Elderly

Abdul Waheed, MD, FAAFP  
Clinical Associate Professor  
Program Director, Family Medicine Residency  
WellSpan Good Samaritan Hospital  
Lebanon, PA



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## Conflict of Interest

This presentation contains number of brand for pharmacotherapy. I have no personal association with any of these nor do I make any money directly or indirectly from any of these brands/companies.

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## Learning Objectives

- Recognize the difference between primary and secondary constipation
- Assess and evaluate for alarming signs and symptoms for secondary constipation;
- Recommend evidence based pharmacologic and non-pharmacologic treatment for constipation.



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## Constipation



- straining
- lumpy or hard stools
- feeling of incomplete evacuation
- feeling of anorectal obstruction or blockage
- manually facilitating defecation during  $\geq 25\%$  of defecations
- $< 3$  bowel movements/week
- Loose stools rarely present without laxatives

Drossman DA. Functional gastrointestinal disorders: history, pathophysiology, clinical features, and Rome IV. *Gastroenterology*. 2016;150(6):1262-1279.e2.



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## Constipation



- Chronic if symptoms lasting more than 3 months
- Can be
  - Primary/Essential
  - Secondary
- Women are more affected than men
- Age  $> 65$  is more likely to report

Malone M, Waheed A, Samiullah S. Functional Gastrointestinal Disorders: Functional Lower Gastrointestinal Disorders in Adults. *FP Essent*. 2018 Mar; 466:21-28.



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## Primary Constipation



- Functional
  - Idiopathic Functional Constipation
  - Difficult defecation, psychological distress, excessive thinking about defecation, bloating, discomfort
- Delayed or Slow Transit/Colonic Inertia
  - Increased time between BMs, lack of urge to defecate
- Outlet Dysfunction/Synergic Defecation
  - Fissure-in-ano, anal stricture, proctalgia fugax, rectal prolapse, rectocele, pelvic floor dysfunction, tumor
- Combined forms/Mixed

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol*. 2005;100(suppl 1):S1-S4.



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## Secondary Constipation



- intestinal obstruction
  - malignant large bowel obstruction
  - small bowel obstruction
- ileus
- constipation secondary to conditions or disorders
  - irritable bowel syndrome (IBS)
  - hypothyroidism
  - multiple sclerosis
  - Parkinson disease
  - pregnancy
  - advanced age
  - colon cancer and rectal cancer
  - Megacolon or Megarectum
  - Ogilvie Syndrome, Shy- Drager Syndrome/ Multisystem Atrophy
  - Advanced Diabetic Autonomic Neuropathy

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## Secondary Constipation



- constipation secondary to medication, such as
  - **opioids**
  - **Antispasmodics**
  - **Iron Supplements**
  - diuretics
  - antidepressants
  - anticonvulsants
  - antacids
  - anticholinergics
  - calcium channel blockers (CCBs)
  - beta blockers

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## ROME 4 Criteria for Diagnosis



### Functional Constipation

Bowel disorder associated with  $\geq 2$  of the following

- straining
- lumpy or hard stools
- feeling of incomplete evacuation
- feeling of anorectal obstruction or blockage
- manually facilitating defecation during  $\geq 25\%$  of defecations
- $< 3$  bowel movements/week
- Loose stools rarely present without laxatives

### IBS-Constipation

- Recurrent abdominal pain, on average,  $\geq 1$  day/week in the last 3 months,
- associated with  $\geq 2$  of the following criteria:
  - Related to defecation
  - Associated with a change in frequency of stool
  - Associated with a change in form (appearance) of stool

Tack J, Drossman DA. What's new in Rome IV? *Neurogastroenterol Motil.* 2017;29(9)



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**Chronic Constipation**

**Dyspepsia**

**GERD**

**IBS**

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Good Samaritan  
Hospital

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.

PERIPTS/AMA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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### Alarms!!

- acute onset (especially in elderly)
- fever
- nausea and/or vomiting
- unintentional weight loss > 10 lbs
- anemia
- hematochezia
- melena
- positive fecal occult blood test
- change in bowel habits
- symptoms refractory to conventional therapy (regardless of age)
- Family History of Colorectal cancer
- personal history of any cancer

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Hospital

Malone M, Waheed A, Samiullah S. Functional Gastrointestinal Disorders: Functional Lower Gastrointestinal Disorders in Adults. *FP Essent.* 2018 Mar; 466:21-28.

PERIPTS/AMA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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### Work Up

- No alarms—none indicated
- Alarms: think about possible causes
  - Colonoscopy: all patients (insufficient evidence), risk factors
  - CBC, CMP (preferably fasting), TSH
  - Referral to Gastroenterologist
    - Colonic transit time study
    - Defecography, Ano-rectal manometry, defecodynamic studies

WELLSPAN<sup>®</sup>  
Good Samaritan  
Hospital

Rao SS, Ozturk R, Laine L. Clinical utility of diagnostic tests for constipation in adults: a systematic review. *Am J Gastroenterol.* 2005;100(7):1605-1615

PERIPTS/AMA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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## Non Pharmacologic Treatment



- Lifestyle Modification
  - Dietary modification
    - Water intake
      - 2L/day (level 2 evidence)
    - Increased daily fiber intake, healthy food choices
      - Increase colors in your plate (level 2)
    - Fiber supplements
      - Metamucil (psyllium) (level 2)
      - Prunes (dried plums) (level 2)
    - Probiotic Supplements (level 2)
  - Physical activity
    - Level 3 evidence
- Biofeedback Therapy
  - Level 2 for outlet dysfunction syndromes

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## Pharmacologic Treatment



- Generic Laxatives
  - Stool Bulking Agents
    - Act small intestine & Colon
    - First line agents
  - Stool Softeners
    - Act at small Intestine & Colon
    - First line for opioid, diuretic use, iron
  - GI Stimulants or Irritants
    - Act on colon
    - Abuse: Laxative Colon, Melanosis Coli
  - Hydrants
    - Act Colon
  - Lubricants/Emollients
    - Act Colon



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## Bulking Agents



- Dietary Fiber: Green leafy Veg, other colored (**Level 2 Evidence**)
- Soluble Fiber: Psyllium Husk (*Metamucil, Konsyl*), prunes, apples, broccoli (**Level 2 Evidence**)
- Insoluble Fiber: Bran, Gamkaraya, Normacol (**Level 2 Evidence**)
- Methylcellulose (*Citrucel*) (**Insufficient Evidence**)
- Polycarbophil/*Pridem Fiber Therapy* (**Insufficient Evidence**)

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## Stool Softeners



- **Although some have FDA approval, Insufficient Evidence Level 3 evidence**
- Sodium Docusate (*Colace, Sufrac, Diocto*)
- Gibs-Eze
- Enable additional fat and water incorporation in stool hence stool softeners
- It takes 12-72 hours for action
- Good for opioid analgesic, iron or calcium supplement induced constipation
- Lubricants/emollients: type of stool softener like mineral oil—not for long term use for min/vit def

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## Stimulants



- Senna products (Senokot, Ex-lax)
- Bisacodyl (Dulcolex, Correctol, Carter's Pills): Both tabs and suppository
- Mesenteric & Myenteric Plexus
- Act on Cells of Cajal
- Increase motility as well increase secretion of water and solute
- **Insufficient Evidence to use in Chronic Constipation**

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## Hydrants/Osmotic Laxatives



- Hyperosmotic agents
  - Lactulose (**level 1**)
  - Polyethylene Glycol: Superior to above (**level 1**)
    - PO powder (Miralax)
    - Electrolyte solution: Golytely, Glycolex, Colyte, Nulytely, Suprep,
  - Glycerine (suppositories) (**level 2**)
  - Sorbitol (**level 2**)
- Mg citrate, MgSO<sub>4</sub>, MgOH, Na-K tartarate, KCl (**Insufficient Evidence**)

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## Herbals and Others



- Caster Oil: Both oral and suppository
- Microlax, Aloe Vera (extracts from rose petals- "Qaland"), Buckthorn, Phenolphthaline, Red Chillies
- Insufficient Evidence

American College of Gastroenterology Chronic Constipation Task Force. An evidence-based approach to the management of chronic constipation in North America. *Am J Gastroenterol.* 2005;100(suppl 1):S1-S4.



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## Opioid Induced Constipation



- Prevention: Lifestyle modification, softeners and bulking agents right from beginning, occasional use of stimulants
- Methylnaltrexone (Relistor): Level 2 evidence, difficult to get outpatient coverage unless demonstrated failure of other meds



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## "Newer" and Rarely Used Meds



- Level 1 evidence but have become "expert use only"
  - Prucalopride (Resolor, Prudac, DuphaPro): availability and insurance coverage is an issue
  - Cisapride: cardiac s/e, limited use only
  - Tegaserod (Zelnorm, Zelmec): limited use only for experts, cardiac
- IBS-Constipation agents
  - Lubiprostone (Amitza)
  - Linaclotide (Linzess)
- Not FDA Approved but may prescribe open label
  - Colchicine 0.6mg PO TID



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## Special Situations



- Severe Chronic Constipation
  - Other alarms ruled out already
  - Patient not able to go for more than 2 week
  - Consider hospitalization
  - Pick one from each category
    - Give stimulants to empty it all for 3 days!!
      - May do it enema form which may be more useful, ask your patient
    - Give Osmotic agents
    - Bulking agents
    - Resume normal treatments after 5 days
    - Aim for one soft, easy BM every day or at least every other day



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## Fecal Incontinence



- Common (18%), under-reported
- Urge Incontinence
- Passive Incontinence
- Primary Vs Secondary
  - Alarm Symptoms
- Physical Exam
  - Anal Wink Reflex, DRE, Anoscopy, disimpaction

Johanson JF, Lafferty J. Epidemiology of fecal incontinence: the silent affliction. *Am J Gastroenterol.* 1996;91(1):33-36



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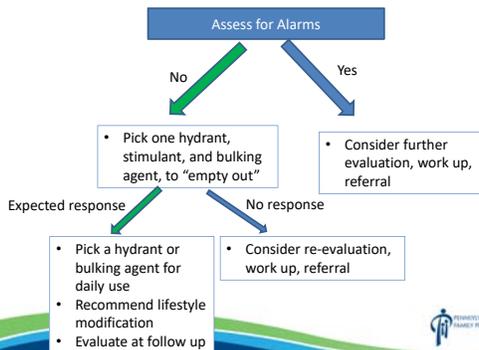
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## Patient with Chronic Constipation



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***CDL Update***  
Edward Zurad, MD

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

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**[Click here to return to the table of contents.](#)**



## CDL UPDATE

Edward G. Zurad, M.D.  
PAFP  
Gettysburg, PA



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## Disclosures

- I serve as Medical Director for the following companies:
  - Procter & Gamble
  - DHL
  - Staff Management
  - Meshoppen Transport
  - Work Well
  - Holcombe Transportation
  - Eastern Freight
  - Mountain Energy
  - Rain For Rent



Edward G. Zurad, M.D.

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TRIGATE

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There is a national shortage of drivers.



Edward G. Zurad, M.D.

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This is what FMCSA  
WANTS TO PREVENT!

FMCSA

Edward G. Zarog, MD

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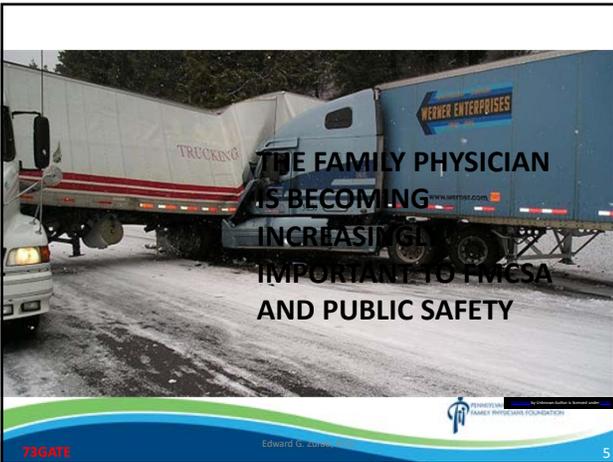
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THE FAMILY PHYSICIAN  
IS BECOMING  
INCREASINGLY  
IMPORTANT TO FMCSA  
AND PUBLIC SAFETY

FMCSA

Edward G. Zarog, MD

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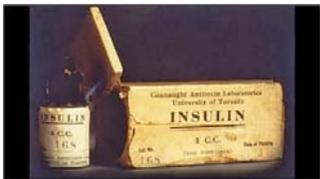
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**THE INSULIN EXEMPTION FOR COMMERCIAL DRIVERS IS OVER!**

CDL DRIVERS ARE NO LONGER REQUIRED GET AN FEDERAL EXEMPTION.



INSULIN

1 C.C.

THE UNIVERSITY OF TORONTO  
FACULTY OF MEDICINE  
DEPARTMENT OF FAMILY PHYSICIAN

Edward G. Zarog, MD

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## INSULIN-TREATED DIABETES MELLITUS ASSESSMENT FORM

Name: \_\_\_\_\_

DOB: \_\_\_\_\_ Driver's License Number (if applicable): \_\_\_\_\_ State: \_\_\_\_\_

- This individual is being evaluated either to determine whether he/she meets the physical qualification standards of the Federal Motor Carrier Safety Administration (FMCSA) to operate a commercial motor vehicle or because the individual has recently experienced a severe hypoglycemic episode.
- A treating clinician should complete this form to the best of his/her ability based on his/her knowledge of the individual's medical history.



Edward G. Zuradi, M.D.

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## INSULIN-TREATED DIABETES MELLITUS ASSESSMENT FORM

- Completion of this form **does not imply** that a treating clinician is making a medical certification decision to qualify the individual to drive a commercial motor vehicle.
- Any determination as to whether the individual is **physically qualified to drive a commercial motor vehicle will be made by a certified medical examiner** on FMCSA's National Registry of Certified Medical Examiners.
- FMCSA defines a treating clinician as a healthcare professional who manages, and prescribes insulin for, treatment of the individual's diabetes mellitus as authorized by the healthcare professional's applicable State licensing authority.



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## Instructions to the Individual Driver

- When you are being evaluated prior to a medical certification examination, the certified medical examiner must receive this form and begin the examination **no later than 45 calendar days** after a treating clinician signs this form.
- When you are being evaluated after a severe hypoglycemic episode, you must retain this form and give it to the certified medical examiner at your next medical certification examination.



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## Severe Hypoglycemic Episodes

6. Has the individual experienced any severe hypoglycemic episodes within the preceding 3 months?

- FMCSA defines a severe hypoglycemic episode as one that requires the assistance of others, or results in loss of consciousness, seizure, or coma.  Yes  No
- If yes, provide date(s) of occurrence, whether the cause has been addressed, and associated details (attach additional pages as needed):  
\_\_\_\_\_  
\_\_\_\_\_



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## Hemoglobin A1C (HbA1C) Measurements

- 7. Has the individual had HbA1C measured intermittently over the last 12 months, with the most recent measure within the preceding 3 months?  Yes  No
  - If yes, attach the most recent result.



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## Diabetes Complications

8. Does the individual have signs of diabetic complications or target organ damage? This information will be used by the certified medical examiner in determining whether the listed conditions would impair the individual's ability to safely operate a commercial motor vehicle.

- a. Renal disease/renal insufficiency (e.g., diabetic nephropathy, proteinuria, nephrotic syndrome)?  Yes  No
  - If yes, provide the date of diagnosis, current treatment, and whether the condition is stable: \_\_\_\_\_
- b. Diabetic cardiovascular disease (e.g., coronary artery disease, hypertension, transient ischemic attack, stroke, peripheral vascular disease)?  Yes  No
  - If yes, provide the date of diagnosis, current treatment, and whether the condition is stable: \_\_\_\_\_



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## Diabetes Complications



- c. Neurological disease/autonomic neuropathy (e.g., cardiovascular, gastrointestinal, genitourinary)?  Yes  No  
– If yes, provide the date of diagnosis, current treatment, and whether the condition is stable: \_\_\_\_\_
- d. Peripheral neuropathy (e.g., sensory loss, decreased sensation, loss of vibratory sense, loss of position sense)?  Yes  No  
– If yes, provide the date of diagnosis, location, type of involvement, current treatment, and whether the condition is stable: \_\_\_\_\_
- e. Lower limb (e.g., foot ulcers, amputated toes/foot, infection, gangrene)?  Yes  No  
– If yes, provide the date of diagnosis, current treatment, and whether the condition is stable: \_\_\_\_\_



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## Diabetes Complications

- f. Other? (specify condition) \_\_\_\_\_  
 Yes  No  
– If yes, provide the date of diagnosis, current treatment, and whether the condition is stable: \_\_\_\_\_
- Progressive Eye Diseases
    - 9. Date of last comprehensive eye examination: \_\_\_\_\_
    - 10. Has the individual been diagnosed with either severe non-proliferative diabetic retinopathy or proliferative diabetic retinopathy?  Yes  No
      - If yes, provide date of diagnosis: \_\_\_\_\_



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## Diabetes Complications

11. Has the individual been diagnosed with any other progressive eye disease(s) (e.g., macular edema, cataracts, glaucoma)?  Yes  No  
– If yes, specify the disease(s), provide the dates of diagnoses, current treatment, and whether the condition is stable: \_\_\_\_\_



12. Additional Comments (attach additional pages as needed)  
\_\_\_\_\_



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## Signature/Certification

- I attest that I am a treating clinician (as defined above), that this individual maintains a stable insulin regimen and proper control of his/her insulin-treated diabetes mellitus, and that the information provided is true and correct to the best of my knowledge.
- Date
- Printed Name and Medical Credential Signature
- Professional License Number and State
- Phone Number
- Email
- Address



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## Controlled Substance Utilization

- If a driver is on chronic controlled substance(s), the Certified Medical Examiner (CME) may contact the treating clinician to discern the chronicity of the agent and its effect on the performance of safety sensitive functions while taking such agents.
- The CME may request such clarification in a written format.



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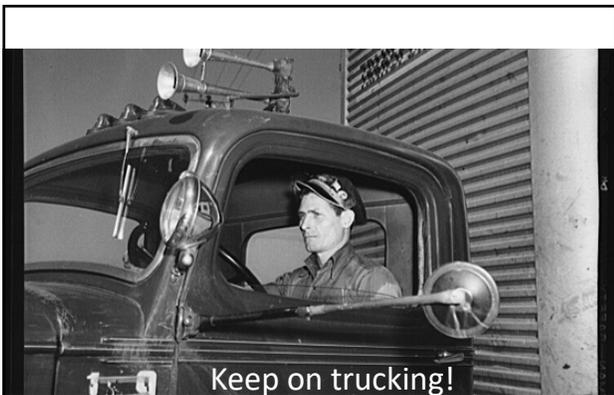
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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Oral Health in the Elderly***  
Craig Pate, DDS

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

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# Oral Health in the Elderly

CRAIG S PATE D.M.D., FACD, FAAHD  
March 8, 2019



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## WHY ORAL HEALTH?

### Oral Health Problems



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## Without Oral Care & Treatment, Adults and Seniors are at Risk for ...

- Tooth Decay
- Gum Disease
- Chronic Illnesses
- Dry Mouth
- Poor Nutrition
- Denture Problems
- Oral Cancer



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## Scope of Oral Health Problems for Seniors

- More seniors than ever are aging with their natural teeth.
- Seniors are at high risk for gum disease, root caries, and oral cancers.
- Percent of adults aged 65 and over with a dental visit in the past year 64.3% (2016)
- About 80% of seniors over age 65 have at least some of their teeth
- Evidence based studies link poor oral health to poor overall health - and health treatments to oral health outcomes.



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## Seniors Lack Access to Dental Care

- Most retirees no longer have dental insurance
- Medicare does not cover dental
- Medicaid cut dental care benefits for adults in 2011 limiting services including periodontal treatment
- Eight percent of Pennsylvania's older adults live at or below the federal poverty level -- choosing to pay for dental care out of pocket versus their medications is not realistic
- Many seniors have a limited understanding of the importance of preventive dental care and the relationship between oral health and their overall health
- The prevalence of untreated caries was 42.2% among adults 65 years of age and older in the  $\leq 100\%$  FPL income category and 9.9% in the  $\geq 400\%$  FPL category



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## Topics for discussion

- General anatomy
- Common oral conditions in geriatric patients
- Pharmacologic effects on oral health
- Aids to oral health
- Medical/dental connection
- Treatment objectives
- Q&A



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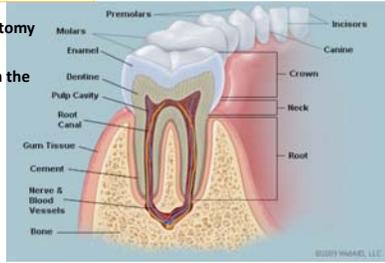
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## General Anatomy

- Teeth and gingival anatomy
- Radiographic anatomy
- Age related Changes in the dentition



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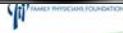
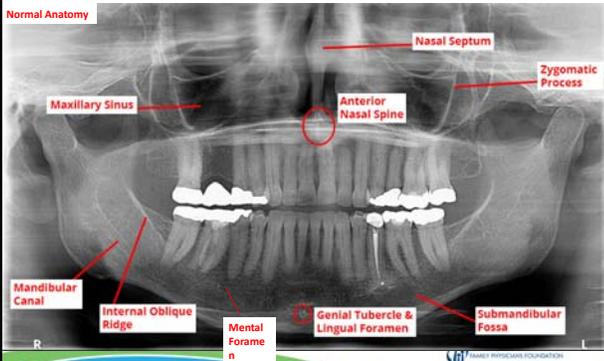
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Normal Anatomy



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## Common Oral Conditions

- Age related changes
- Dental wear/non-carious cervical lesions(abfraction)
- Gingivitis/Periodontitis
- Root caries
- Candidiasis
- Common Benign findings
- Oral cancers



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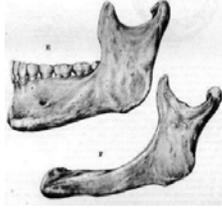
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## Age Changes

- The bone is greatly reduced in size when teeth are lost
- Alveolar process is resorbed
- The mandibular canal and mental foramen are closer to the alveolar border.
- The ramus is oblique, the angle measure 140 degrees, the neck of the condyle is more or less bent backward.



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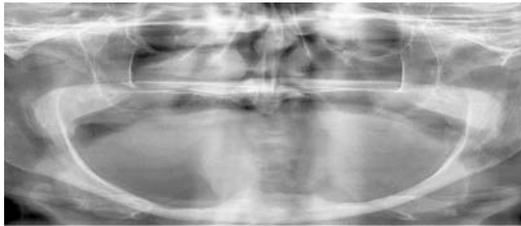
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## Severely Atrophied Mandible



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## Gingival Recession

- Etiology:
  - Plaque-induced gingival inflammation
  - Faulty tooth brushing
  - Anatomic factors/habits / physiologic factors
  - Bone recedes with gingiva

Recession with lack of attached gingiva can lead to roots being exposed (susceptible to decay) and if untreated tooth loss



No attached gum

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## Changes in the Older Dentition




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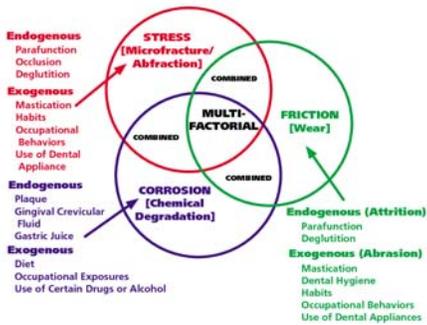
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### Non-Carious Cervical Lesions

- Multifactorial
- Stress
- Corrosion
- Friction




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## Periodontitis

- A chronic bacterial infection that affects the gums and bone supporting the teeth.
- Periodontal diseases range from simple gum inflammation to serious disease that results in major damage to the soft tissue and bone that support the teeth.



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## Root Caries



**Root caries** has become an important dental problem because people are living longer and keeping their teeth longer.

**The elderly population are more prevalent to root caries.**

- Exposure of root surfaces
- Decrease salivary flow or xerostomia,
- Diminished manual dexterity (poor oral hygiene)
- Cognitive deficits
- shift from complex to simple sugars



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## Candidiasis

(THREE TYPES)



1. **Pseudomembranous oral candidiasis:** characterized by the appearance of white moss
2. **Erythematous oral candidiasis:** Characterized by the eruption of erythema
3. **Hyperplastic oral candidiasis:** Characterized by mucosal hyperplasia.



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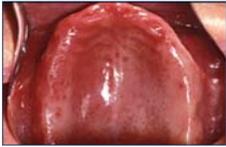
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**Erythematous Oral Candidiasis** → 

**Hyperplastic Oral Candidiasis** → 

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**Angular Cheilitis**  
(Fungal infection)

- Immunocompromised
- Nutritional deficiencies
- Xerostomia
- Loss of muscle tone



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**Epulis Fissuratum**

□ A benign hyperplasia of fibrous connective tissue which develops as a reactive lesion to chronic mechanical irritation produced by the flange of a poorly fitting denture.

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## Geographic Tongue



- Affecting about 1% to 3% of people, geographic tongue can show up at any age.
- However, it tends to affect middle-aged or older adults more often.
- It appears to be more common in women than in men.

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## Maxillary & Mandibular Tori

- The etiology of torus palatinus or mandibularis is unclear. The most widely accepted theory is genetics.
- Tori present as very slow-growing lesions that usually stop spontaneously. They are usually located at the midline of the hard palate or the lingual aspect of the mandible.
- They usually do not produce any symptoms, except in cases of significant growth or in edentulous patients because of the friction with prostheses.

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## Lingual Varices



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## Normal Pigmentation



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## Oral Cancer

The most common symptom of oral cancer is a sore in the mouth that does not heal. Other symptoms include:



- A lump in the mouth or throat or on the lip
- A white or red patch on the gums, tongue, or the lining of the mouth
- Bleeding, pain, or numbness in the mouth
- A sore throat that does not go away
- Difficulty or pain when chewing or swallowing
- Swelling of the jaw
- A change (hoarseness) in the voice
- Pain in the ear.

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## Oral Cancer Deaths

- Each year, more than 30,000 new cases of cancer of the oral cavity and pharynx are diagnosed and over 8,000 deaths due to oral cancer occur. **The 5-year survival rate for these cancers is only about 50 percent.**
- Death rate is nearly twice as high in some minorities (especially black males) as it is in whites.
- 60% of oropharyngeal cancers are linked to HPV

- Preventing high risk behaviors --- cigarette, cigar or pipe smoking, use of smokeless tobacco, and excessive use of alcohol are critical in preventing oral cancers.
- Early detection is key to increasing the survival rate for these cancers. **Per the CDC**



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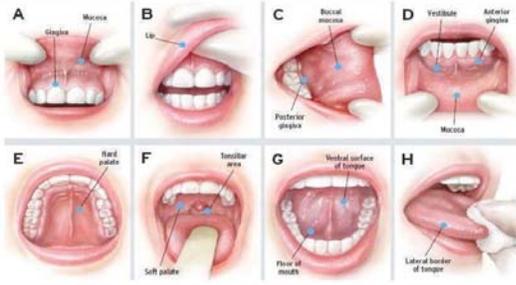
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# The 8-Step Oral Cancer Screening



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## Self Oral Exam



- Face.** Examine the symmetry of the face in a mirror, and check for irregularities and new imbalance between the two sides.
- Lips.** Pull up upper and lower lips to check the texture and color.
- Gums.** Raise upper and lower lips to check color and conditions of the gums.
- Cheeks:** Draw back the side of the mouth to check inside the cheeks.
- Tongue and floor of mouth.** Move the tongue, check as far back as can be seen in the mirror, and feel the area.
- Palate.** Examine the upper palate as far back as you can see.
- Neck.** Feel for anything unusual on the sides of the neck.
- Trachea.** Hold the thyroid cartilage (the Adam's apple). It should go up and down when you swallow.

If you should discover any unusual lumps, bumps, spots or color changes, and so on, bring them to your dentist's attention as soon as possible.



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## Pharmacology

- Xerostomia, diuretics, hypertensive drugs, psych meds, bisphosphonates
- Anticoagulants
- Drug induced gingival hyperplasia



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## Dry Mouth or Xerostomia

- ✓ Too little saliva to keep your mouth wet/clean.
- ✓ Affects 1-3 older adults



➔ **Common symptoms** associated with dry mouth include a constant sore throat, burning sensation, problems speaking, difficulty swallowing, hoarseness or dry nasal passages.

➔ Without the cleansing effects of saliva, tooth decay and other oral health problems become more common



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## Dry Mouth

❑ **Dry mouth** is a potential side effect of many medications (prescribed and over-the-counter) to include:

- ❑ Antihistamines, decongestants, painkillers, hypertension medications, muscle relaxants, drugs for urinary incontinence, Parkinson's disease medications, antidepressants and many others medications.

❑ Patients using oral inhalers for asthma often develop an oral fungal infection and are encouraged to rinse their mouths with water after using the inhaler.

Over 400 medications



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## Salivary Substitute



How to Use XyliMelts Discs



Use your fingers or tongue, to place a XyliMelts disc on your gums beside a molar, upper or lower, with the white side facing your cheek and the tan adhesive side against your gums or a tooth or both.



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## Bisphosphonates

- Inhibit osteoclast differentiation, reducing their activity, and causing osteoclast cell death
- Impair bone healing and remodeling in the mandible/maxilla
- Oral vs. IV
- since 2003- 4,000 cases of BRONJ
- Over 90% IV route
- Risk less than 1% for IV
- Orally- 0.1% spontaneous and 0.5% with dental surgery
- Increased risk with tobacco use, corticosteroid use, diabetics, prolonged use



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## Bisphosphonate Related Osteonecrosis of the Jaws



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## Radiograph BRONJ



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## Radiograph BRONJ

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## Anticoagulation Therapy

- Typically we do not stop anticoagulation therapy for dental surgery.
- Prophylactic measures are taken to minimize the risk of post op bleeding.
- Patients are going to be more prone to post op bleeding. When this occurs we address with local measures. **Patient compliance and pressure are key!!**
- Coumadin- prefer INR in the 2.5- 3.0 range.
- We will preform surgery above 3.0 but my experience has been we see an increase in patients returning with post op bleeding.
- Bridge therapy coumadin/lovenox



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## Drug Induced Gingival Hyperplasia

- Phenytoin
- Cyclosporin
- Ca Channel Blockers (nifedipine, amlodipine)
- Phenobarbital



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**Aids to oral health**

- Brushing and flossing aids
- Fluoride rinses/ prescription toothpaste
- Salivary substitutes
- Self oral cancer exam

"That was bound to happen. Well, don't just stand there. Tell them you'll call back after you finish brushing your teeth."



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**Brushing Aids**









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**Flossing Aids**

**Flossing Aids**

- Interdental brushes that can fit between teeth.
- Floss picks with handles that can make it easier to floss with just one hand.
- Water flossers that direct water between the teeth in lieu of dental floss.
- Floss threaders that can be helpful for flossing under fixed bridges.







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## Alcohol Free Fluoride Rinses

- Use once a day after brushing your teeth with toothpaste.
- Vigorously swish 10 mL (2 teaspoonfuls) of rinse between your teeth for 1 minute and then spit out.
- Do not swallow the rinse.
- Do not eat or drink for 30 minutes after rinsing.




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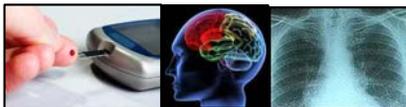
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## Oral Health and Overall Health

- ❑ What happens in the mouth is often a reflection of what happens in the body.
- ❑ Oral Health has been linked to **diabetes, heart disease, stroke, and pneumonia.**
- **Research also links Periodontal disease, a chronic inflammatory disease to cardiovascular disease, diabetes, Alzheimer's and other diseases**
- Journal of Periodontology Aug 2008 Supplemental Issue




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## The Link Between Gum Disease and Diabetes

- Diabetes is a risk factor for periodontal disease, periodontal disease is a risk factor for Diabetes



- Studies indicate people with diabetes are **2 to 3** times more likely to develop periodontal disease than people without diabetes. (National Diabetes Education Program )
- The ADA advises people with diabetes to visit the dentist at least twice a year.
- This is because people with diabetes are generally more susceptible to bacterial infection and have a decreased ability to fight periodontal disease. (American Diabetes Assoc.)



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## Oral Health Problems and Diabetes



- Problems associated with diabetes are:

- tooth decay
- periodontal (gum) disease
- salivary gland dysfunction
- fungal (yeast) infections
- inflammatory skin disease
- infection and delayed healing
- taste impairment
- elevated blood glucose

- ♥ An 11-year study of Pima Indians with Type 2 Diabetes noted that Periodontal disease was a positive predictor of mortality from
  - Ischemic heart disease by 3.2 times
  - Diabetic nephropathy. (kidney problems)

[www.ada.org/prof/resources/pub/bj/dammew/adaewarticle.asp?articleid=1219](http://www.ada.org/prof/resources/pub/bj/dammew/adaewarticle.asp?articleid=1219)



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## Oral Health and Stroke

- Patients with Periodontal disease are more likely to suffer from Artherosclerosis Disease – a narrowing of the arteries that can lead to stroke



### Possible cause:

- Oral bacteria via the blood attach to fatty plaque contributing to clot formation.
- Inflammation caused by periodontal disease increases plaque build up, which may contribute to swelling of arteries.

Per study part of NIH-INVEST (Oral Infections and Vascular Disease Epidemiology Study Aug 2004) at Columbia, the University of Minnesota and the National Institute of Neurological Disorders & Stroke funded Northern Manhattan Study



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## Oral Health and Heart Disease

❑ Researchers have found that people with periodontal disease are almost **twice** as likely to suffer from coronary artery disease as those without periodontal disease.



• American Journal of Preventative Medicine, Dec 2005

### Possible cause:

- Oral bacteria via the blood attach to fatty plaque contributing to clot formation.
- Inflammation caused by periodontal disease increases plaque buildup, which may contribute to swelling of arteries.



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## Studies Show Association of Gum Disease to Heart Disease

- Cardiovascular disease, the leading killer of men and women in the United States, contributing to **2,400 deaths each day**.
- A study done by Arbes and colleagues, published in 1999, found that the odds of having a heart attack **increased with the severity of periodontal disease**.
- A study by Beck and colleagues (1996)
  - Followed a group of men age 21-80 years old who were free of Cardio Vascular Disease for a baseline.
  - Researched followed up after 18 years.
  - Found that loss of the alveolar bone (jaw bone, which is a measure of periodontal disease) at the baseline, was a predictor of heart disease incidents and stroke.



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## Oral Health and Pneumonia

❑ A Japanese research group studied the provision of oral care after each meal for elderly, frail adults in 11 NHs in Japan to those not receiving the oral care after each meal and demonstrated that death from pneumonia decreased significantly with oral care.

❑ Good oral care reduces the number of potential pathogenic bacteria that might colonize the mouth that may reach the lungs.



• From the Dept of Geriatric & Respiratory Medicine, Tohoku University School of Medicine, Sendai, Japan and reported in Pulmonary Reviews.com Vol.7 No.9 September 2002



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# Oral Health and Pneumonia

□ Pneumonia accounts for 1.2 million hospitalizations annually with over \$8 billion spent. (2006 CDC)



- When bacteria, viruses or, rarely, fungi living in your nose, mouth, sinuses, or the environment spread to your lungs, you can develop pneumonia or other infections.
- You can catch the bacteria or viruses from people who are infected with them, whether they are sick or not.



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## Treatment Objectives

- Replacement of teeth
- Periodontal health
- Dental clearance



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## Replacement of Teeth



- Dentures
- Partials
- Bridges
- Implants



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## Implant Overdentures



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## Radiograph of Dental Implants



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## Failing Implant



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## Periodontal Treatment

### Deep Cleaning



### Grafting



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## Dental Clearance

- Head and Neck Radiation
- Cardiovascular Surgery
- Joint Replacement
- Organ transplant



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## Treatment Dilemmas



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**Q & A**

UNIVERSITY OF MUHAMMADIYAH MALANG  
FACULTY OF PEDAGOGY

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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Quick Hits - Moderated Geriatrics Q & A***  
John Surry, MD

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

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## Quick Hits

Geriatrics  
Gettysburg  
March 8, 2019



SODISH

1

## I Declare No Conflicts of Interest



SODISH

2

1. Which one of the following statements regarding neuropsychological evaluations in adults is incorrect?

- A. Although the cognitive screening tests like the Mini-Mental Status Exam are brief, easily administered and screen for general cognitive impairment they are poorly designed to assess for deficits in specific cognitive domains.
- B. Each neuropsychological test requires several hours to complete but provides information regarding the nature and severity of specific cognitive domain deficits and produces primary and secondary diagnoses allowing for individualized rehabilitative and treatment plans.
- C. Neuropsychological tests for measuring executive functioning include Symbol Search and Letter-number Sequencing.
- D. Neuropsychological testing is often complementary to neuroimaging and electrophysiological procedures.
- AFP January 15, 2019 Volume 99, Number 2 pp. 101-108



1. The answer is C. Executive functioning can be tested for with the Stroop Task, the Trail Making Test and the Wisconsin Card Sorting Test. Symbol Search tests for mental processing speed and Letter-number sequencing tests for attention and working memory.

- The Mini-Mental Status Exam is no longer free.
- Try the free Montreal Cognitive Assessment at <http://www.mocatest.org>
- or the free Saint Louis University Mental Status Exam at <https://www.slu.edu/medicine/internal-medicine/agingsuccessfully/assessment-tools/mental-status-exam.php>
- Table 2 lists all the common neuropsychological test by domain (14).
- Table 5 lists the most frequently referred clinical conditions and the common primary care referral questions and expectations.



2. Anemias in the elderly are associated with increased morbidity and mortality and have several causes. Which statement is false?

- A. The prevalence of anemia in the elderly is between 7% and 11% in community dwellers, 47% in nursing homes and 40% in the hospitalized.
- B. Morbidities from anemia in the elderly include decreased mobility and diminished quality of life.
- C. A serum transferrin receptor-ferritin index of greater than or equal to 1.5 determines which patients whose serum ferritin values are midrange need iron replacement and referral for endoscopic evaluation.
- D. An elevated homocysteine level points to a Vitamin B12 deficiency when a patient with a macrocytic anemia, normal peripheral blood smear, a reticulocyte index less than or equal to 2 % and borderline to low Vitamin B12 and Folate levels is evaluated.
- AFP October 1, 2018 Volume 98, Number 7 pp. 437- 442

2. The answer is D. An elevated methylmalonic acid level is seen in Vitamin B12 deficiency. An elevated homocysteine is seen in Folate deficiency.

- Morbidities also include risks of fatigue, falls, depression, dementia, and delirium in hospitalized patients.
- There are increased mortalities noted in community-dwelling elderly, nursing home residents, patients undergoing noncardiac surgery and the elderly with preexisting heart and kidney diseases.
- For microcytic or normocytic anemias check a serum ferritin level. If it is low (< 46 ng per ml) consider iron deficiency anemia as cause. If it is high (> 100 ng per ml) consider congenital hemoglobinopathies. If it is midrange (46 to 100 ng per ml) order a serum transferrin receptor-ferritin index.
- If a serum transferrin receptor-ferritin index is less than 1.5 obtain a basic metabolic panel (GFR). If GFR < 60 probable kidney disease. If GFR > 60 consider chronic disease or an unexplained anemia.

3. The ability of a patient to understand the benefits, risks and alternatives to a proposed treatment or intervention or lack thereof is the capacity to make medical decisions. Risk factors for impaired medical decision making capacity include:

- A. Fear or discomfort with institutionalized health care settings.
- B. Age of less than 18 or greater than 85.
- C. Chronic neurologic or psychiatric conditions.
- D. All the above.
- AFP July 1, 2018 Volume 98, Number 1 pp.40- 46

3. The answer is D. Other risk factors for impaired capacity to make medical decisions include cultural and language barriers as well as low education level.

- There are four key areas of questioning in the evaluation of medical decision making capacity.
- The ability of patients to understand their treatment and care options.
- The ability to apply that information to their situation.
- The ability to reason with that information in a manner supported by the facts and the patients' values.
- The ability to communicate and express a choice clearly.
- Figure 1 provides an excellent capacity assessment form

4. A 75 year old male admits during his annual Medicare Visit that he has fallen at least once during the past year. Appropriate next steps in his evaluation include all but one of the following.

- A. Check for weight loss, check blood pressure and pulse.
- B. Review prescription and OTC medication usage.
- C. Refer to Physical Therapy for evaluation and treatment.
- D. Timed Up and Go Test .
- AFP June 15, 2018 Volume 97, Number 12 pp. 776- 784

4. The answer is C. More information should be obtained before making a referral to PT. For instance did he trip on throw rugs, fall in the dark or did he fall because of visual problems or new bifocals or trifocals? Did he drink alcohol or take new medications when he fell? Injury?

- Taking vital signs may demonstrate orthostatic hypotension or bradycardias or pulse deficits or pulse irregularities.
- Unintentional weight loss over the past year or malnutrition may suggest malignancy or alcoholism leading to weakness or sensory deficits.
- Employ Beers criteria or STOPP/START tools available on line. See Table 1.
- Use the Timed Up and Go Test:
- He sits in a comfortable straight back chair. He may use his assistive device if he uses one normally. He should rise off the chair on your command to go without pushing off with his arms. He walks at normal pace to a mark on the floor 10 feet from the chair, turns returning to the chair and sits down. He should accomplish this in less than 12 seconds. If it takes longer than 12 seconds or he sways, stumbles, staggers or has gait abnormalities, he should be referred to PT for evaluation and treatment.

5. A 65 year old post menopausal diabetic female complains of a thin, clear vaginal discharge, vaginal dryness and itching, and dyspareunia. She has had unprotected vaginal intercourse with two partners in the past year. She is a smoker and performs vaginal douching frequently to eliminate a fishy odor.

What should you do next?

- A. Obtain blood test for Serology and HIV.
  - B. Treat with topical estrogen cream.
  - C. Obtain a Pap Smear.
  - D. Obtain vaginal secretions for microscopy, pH, KOH, Whiff Test and cultures.
- AFP March 1, 2018 Volume 97, Number 5 pp. 321- 329

5. The answer is D. Vaginal secretions may be obtained by the physician or the patient using swabs at the time of the visit and promptly processed. A urine may also be obtained at this time.

6. 25 % of men and 16% of women between 60 and 79 years of age have either diagnosed or undiagnosed Coronary Artery Disease or Cardiovascular Disease Equivalents (CVA or PVD). A correct statement regarding the management of stable Coronary Artery Disease is:

- A. High-intensity statin therapy should be continued until 80 years of age.
  - B. ACE Inhibitors are considered first line therapy.
  - C. Short acting Calcium Channel Blockers are used for the management of patients who are not adequately controlled with Beta Blockers.
  - D. Beta Blockers should be prescribed with caution in elderly patients due to the potential of increased stroke risk.
- AFP March 15, 2018 Volume 97, Number 6 pp. 376- 384

6. The answer is D. Beta Blockers are the first line drug for stable CAD in select patients but must be used with caution due to potential increased stroke risk. High-intensity statins should not be used after 75 years of age.

- ACE Inhibitors are used for patients with hypertension, diabetes, chronic kidney disease, abnormal left ventricular function, systolic heart failure or recent MI. Caution in patients with angioedema, renovascular disease or hyperkalemia.
- Beta Blockers are first line therapy for patients with a history of MI, acute coronary syndrome, systolic heart failure, angina, atrial fibrillation or atrial flutter. Caution with patients who exhibit bronchospasm, depression, bradycardia and second and third degree heart block.
- Calcium Channel Blockers are used for patients who are not controlled or can not tolerate Beta Blockers and for Raynaud patients. Can be used for atrial fibrillation and flutter or with angina pectoris. Caution in patients with second and third degree heart block. Only use nondihydropyridines (long acting) CCB. Short acting CCB can cause reflex tachycardia.

7. A 70 year old male complains of 2 days of right periorbital pain associated with malaise, headache and low grade fever. The pain is variable in intensity and has a stinging/ burning quality. Regional exam is normal. The next step is:

- A. Apply an eye patch.
  - B. Return for a follow-up visit within 48 hours or sooner if new symptoms develop.
  - C. Order an urgent Ophthalmological consult.
  - D. Prescribe Antibiotic Ophthalmic drops.
- AFP November 15, 2017 Volume 96, Number 10 pp. 656- 663

7. The answer is B. This clinical scenario describes prodromal Shingles. If on follow up he develops Ophthalmic Zoster, referral to Ophthalmology is necessary. Immediately initiate therapy with antiviral therapy. Prompt treatment reduces risk of post herpetic neuralgia.

- Acute Herpes Zoster is treated with one of the guanosine analogues for 7 days: Acyclovir 800 mg po 5 x / day; Valacyclovir 1000 mg po TID; Famciclovir 500 mg po TID. Best results if started within 72 hours of rash.
- Adjunctive therapy is designed to reduce pain and promote healing of lesions but does not offer benefit for post herpetic neuralgia. Tapered dosing using either prednisolone or prednisone are outlined on Table 1.
- Analgesia with either Acetaminophen or Ibuprofen for pain.
- Post Herpetic Neuralgia is treated topically with Capsaicin 0.075% cream applied topically QID or Lidocaine 5% patch TID. Systemic treatments include Amitriptyline taper dose (Table 2), Gabapentin 300 mg to 600 mg po TID, or Pregabalin 150 mg to 300 mg po daily in two or three doses.
- Prevention with Zostavax after 50 years is more effective if given between 60 and 69. Shingrix is given in 2 doses 2 to 6 months apart once available.

8. There are an estimated 800,000 strokes annually in the United States. 25 % of these strokes are recurrent. 691,000 of the total number of strokes are ischemic. Which of the following is not recommended?

- A. Patients with TIAs or history of an ischemic stroke should be placed on anti-platelet therapy.
  - B. Weight loss is recommended for obese patients.
  - C. Patients with TIAs or recurrent stroke presumed to be of atherosclerotic origin should be placed on high-intensity statin therapy regardless of their LDL cholesterol levels.
  - D. Patients who have had TIAs or stroke should quit smoking and reduce alcohol consumption to a maximum of 1-2 drinks for men and 1 drink for women.
- AFP October 1, 2017 Volume 96, Number 7 pp. 436-440

8. The answer is B. Even though obesity is a risk factor for disease such as diabetes, hyperlipidemia and hypertension that are proven risks for strokes, there is no evidence that weight loss will prevent recurrences.

- Obstructive sleep apnea is found in 50% to 75% in patients with previous stroke or TIAs. Along with smoking, alcohol use, and sedentary activity, sleep apnea is a risk factor for ischemic stroke or TIAs.
- Warfarin is not recommended for prevention of recurrent ischemic stroke due to increased bleeding risk over other antiplatelet therapies.
- The U.S. FDA recommends one of three options: aspirin, clopidogrel or aspirin/dipyridamole for risk reduction of recurrence. The relative risk reduction is 22% for any of these three regimens.
- The CHANCE trial demonstrated that aspirin plus clopidogrel if started within 24 hours of a TIA or minor ischemic stroke and continued for 21 days may prevent recurrence. After that point, there is no benefit with this combination versus use of aspirin or clopidogrel alone but increased risk of bleeding. Therefore prolonged use of this combination is not recommended.

9. A non-modifiable risk factor for falls in the elderly is:

- A. Black race.
- B. Men.
- C. Age greater than 70 years.
- D. Discharged from the hospital within the last month.
- AFP August 15, 2017 Volume 96, Number 4 pp. 240- 247

9. The answer is D. Other nonmodifiable risk factors for falls in the elderly include white race, women, older than 80 years, arthritis, cognitive impairment, dementia, history of CVA or TIAs, and history of fractures/ falling.

- Drugs associated with falls include anticonvulsants, antidepressants, antihypertensives, diuretics, antiparkinsonian meds, antipsychotics, benzodiazepines, nonbenzodiazepines, benzodiazepine receptor agonist hypnotics, digoxin, laxatives, opioids, NSAIDS, sedative and hypnotics.
- Potentially modifiable risk factors are outlined in Table 2.
- Key screening questions: Fall in the past year? How many times? Injured?
- If no to all questions patient is low risk. Next educate patient, suggest Vitamin D with or without calcium and refer for strength/ balance programs.
- If yes to key screening questions evaluate for gait, strength and balance. If 0- 1 fall without injury patient is at moderate risk. If greater than 2 falls with or without injuries or 1 fall with injury patient is at high risk. Next conduct multifactorial risk assessment. See Figure 1.

10. A 75 year old female with moderate dementia has been gradually titrated to her current dosage of 20 mg HS of donepezil and 10 mg BID of memantine. She now complains of decreased appetite, dizziness and a syncopal episode. Which drug could account for these symptoms?

- A. Donepezil.
- B. Memantine.
- C. Both donepezil and memantine.
- D. Neither drug.
- AFP June 15, 2017 Volume 95, Number12 pp. 771- 778

10. The answer is A. Cholinesterase inhibitors (donepezil, galantamine, rivastigmine) should be used for cognitive and functional decline in mild to moderate Alzheimer Disease while memantine should be used in moderate to severe Alzheimer Disease.

- Other side effects of donepezil include atrioventricular block, torsades de pointes, diarrhea, nausea, vomiting, headache, hypertension and weight loss.
- Side effects of memantine include confusion, dizziness, constipation, diarrhea, vomiting, and rarely acute kidney injuries and cerebrovascular events. Memantine is used in combination with donepezil.
- Galantamine side effects are same as donepezil while rivastigmine is also associated with abdominal pain, atrial fibrillation and myocardial infarction.
- Vitamin E 1000 IU BID added to cholinesterase inhibitors or memantine exerts a protective effect on cortical neurons slowing functional decline.
- There is no proven benefit with tested statins, NSAIDS, ginkgo or omega-3 fatty acids.

11. End of life care requires judicious management of symptoms such as dyspnea, gi symptoms, delirium, agitation, pain, excessive oropharyngeal secretions and pain. The medications used in the Hospice Care Kit do not include:

- A. Haloperidol or resperidone for agitation and nausea.
- B. Octreotide (sandostatin) for bowel obstruction of malignancy.
- C. Morphine or oxycodone for shortness of breath and pain.
- D. Lorazepam for anxiety during the last few days of life only.
- AFP March 15, 2017 Volume 95, Number 6 pp. 356- 361

11. The answer is B. Other medications used in the Hospice Comfort Kit include Acetaminophen for fever and Hyoscyamine or Atropine Ophthalmic drops for excessive secretions.

- Proactive regimens are employed to prevent symptoms.
- As swallowing becomes more difficult medications are delivered rectally, sublingually, or transdermally.
- Long acting opiates ( transdermal fentanyl, oxycodone extended release, and morphine extended release) are not recommended for initial titration for management of pain or dyspnea.
- Table 1 outlines various opiates and initial opiate doses.
- Table 2 lists antiemetic medication options and dosages.
- Table 3 lists medications and dosing for prevention and treatment of constipation.
- Table 4 offers two other options for treatment of excessive oropharyngeal secretions, Glycopyrralate (oral, subq, patches) and Scopolamine patches.

12. Visual loss occurs in 25% of patients older than 80 years due to age related macular degeneration and cataracts, glaucoma and diabetic ocular complications. Which one of the following statements is true?

- A. Medical testing before cataract surgery improves outcomes.
  - B. The United States Preventive Services Task Force recommends annual visual screening in the elderly over 75 years of age.
  - C. Fenofibrate has been shown to slow the progression of diabetic retinopathy regardless of its effects on plasma lipids.
  - D. Long term studies confirm the benefit of laser trabeculoplasty in reducing intraocular pressure in primary angle closure glaucoma.
- AFP August 1, 2016 Volume 94, Number 3 pp. 219- 226



12. The answer is C. The American Academy of Ophthalmology recommends against routine pre-op evaluation for cataract surgery unless specific medical indications exist. USPSTF states there is insufficient evidence to support routine visual screening in adults after 65 years of age.

- Laser trabeculoplasty appears safe and effective for treatment of primary open-angle by lowering intraocular pressure and preserving vision.
- 50 million cases of cataracts estimated by 2050. 70% of whites, 53% of blacks and 61% of Hispanics over age 80 will develop cataracts. Risk factors are smoking and ultraviolet exposure.
- ADA has revised glycemic control targets for elderly diabetics to HgbA1c of 8.5% due to concerns of hypoglycemia and increased all-cause mortality in elderly with tight glycemic control.
- Beta carotene present in the original AREDS vitamins caused increased lung cancer rates in current and former smokers. Beta carotene was removed from AREDS2 vitamins for that reason and appears equally effective in treatment of Age Related Macular Degeneration.



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**AFP January 15, 2019 Volume 99, Number 2 pp. 101-108**

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**AFP October 1, 2018 Volume 98, Number 7 pp. 437- 442**

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**AFP July 1, 2018 Volume 98, Number 1 pp.40- 46**

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**AFP June 15, 2018 Volume 97, Number 12 pp. 776- 784**

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**AFP August 15, 2017 Volume 96, Number 4 pp. 240- 247**

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**AFP June 15, 2017 Volume 95, Number 12 pp. 771- 778**

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**AFP March 15, 2017 Volume 95, Number 6 pp. 356- 361**

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**AFP August 1, 2016 Volume 94, Number 3 pp. 219- 226**

**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***The Lila Stein Kroser, MD Memorial Lecture***  
Margot L. Savoy, MD, MPH

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

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**Learning Objectives**

After attending this lecture participants will be able to:

- Identify opportunities for stepping into purpose-driven physician leadership roles
- Name at least one communication strategy for amplifying your voice
- Identify opportunities to apply strategies that promote physician wellness



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1. Don't wait for invitations.  
2. Bring your girls with you.  
3. Speak to be heard.  
4. Protect yourself.

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“If they don't give you a seat at the table, bring a folding chair.”

— Congresswoman Shirley Chisholm

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Lesson 1: Don't wait for invitations.



Me: How did you get invited to the meeting?  
Him: I told them I wanted to start coming.  
Me (inside): \*clutch pearls\* You can do that?!  
Me (outside): I see.

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Lesson 1b: Convene your own meetings.



Your meeting? Your chairs!

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“A mentor is someone who allows you to see the hope inside yourself.”

— Oprah Winfrey



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Lesson 2: Bring your girls with you.

**Mentors advise.  
Sponsors advocate.**

(Get both. Be both.)



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Lesson 3: Speak to be heard.

**No one can hear the ideas in your head.**



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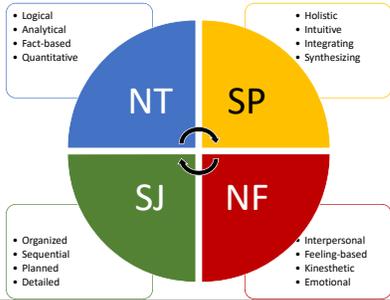
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**Lesson 3b: Say it how they hear best.**

There are 4 (general) types of folks in the world...



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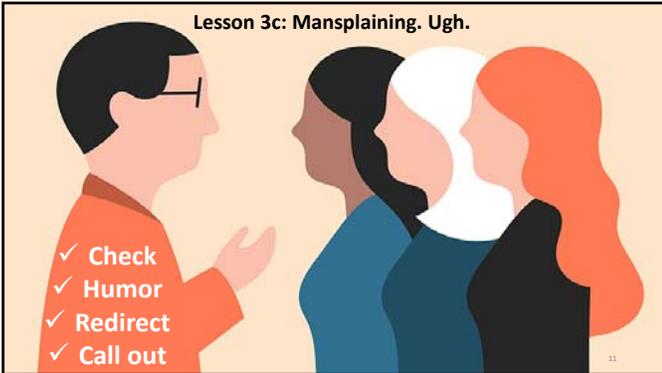
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**Lesson 3c: Mansplaining. Ugh.**



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**Lesson 4: Protect Yourself.**

**Delegate. Say yes to you. Boundaries.**



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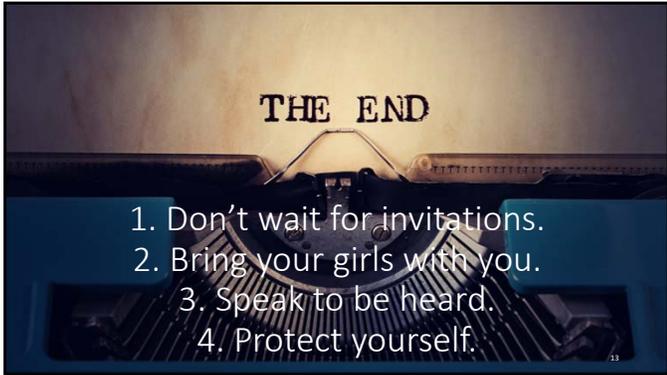
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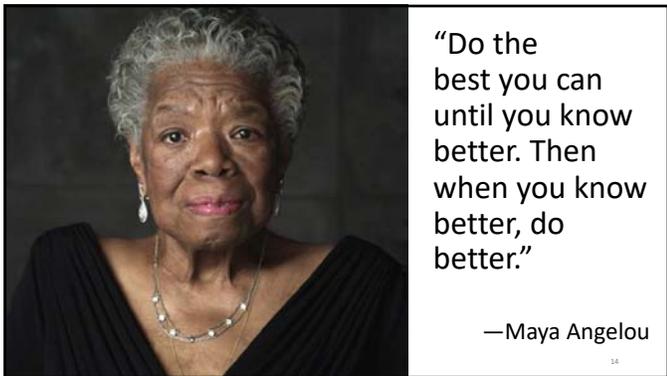
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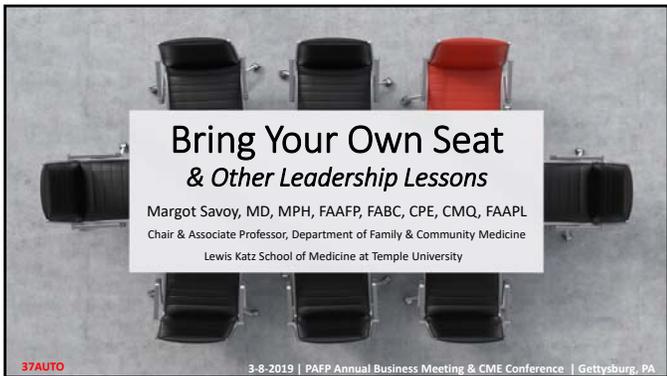
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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Lying to Ourselves, Is This Us?... Ethical Dilemmas in the  
Military and in Medicine***

Lenny Wong, Ph.D

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**\*\*SESSION HANDOUTS ARE NOT AVAILABLE\*\***

**[Click here to return to the table of contents.](#)**

**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Panel Discussion - Ethical Dilemmas***

Michael Gaudiose, MD, Lenny Wong, Ph.D, Dennis Gingrich, MD,  
and Zane Zendarski, DO

**Disclosures:**

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**\*\*SESSION HANDOUTS ARE NOT AVAILABLE\*\***

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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Deprescribing and Polypharmacy in the Geriatric Population***  
Theresa Langeheine, Pharm.D, BCPS

**Disclosures:**

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# Deprescribing and Polypharmacy in the Geriatric Population

Theresa Langeheine, PharmD, BCPS  
WellSpan York Hospital  
March 9<sup>th</sup>, 2019



OSPENS

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## Objectives

Describe	Aging population and medication use
Analyze	Geriatric pharmacokinetic/pharmacodynamic changes
Utilize	Medication assessment tools
Reduce	Polypharmacy = "deprescribing"
Improve	Geriatric prescribing at WellSpan York Hospital



OSPENS

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## Patient case

86yo F  
CC: worsening weakness and ambulatory dysfunction;  
weight loss due to poor caloric intake and refractory abdominal pain  
PMH: dementia, osteoarthritis, diverticulitis, hypertension  
Wt: 41.6 kg  
CrCl 44.2 ml/min  
Vitals: afeb HR 63 RR 16 BP 134/74 96% on RA  
QTC interval 477 (on admission)  
Nutrition: Ensure TID  
Patient admitted to a general floor



OSPENS

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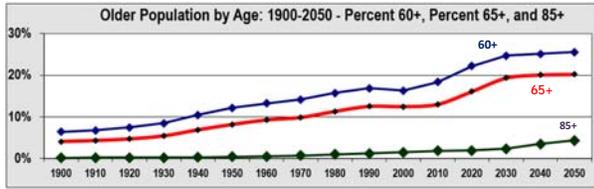
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## The Aging Population – United States



<http://www.silvercare.org/en/statistic/>



OPREMS

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## Geriatric Statistics

- Responsible for 40% of prescribed medications
- Polypharmacy
  - ≥ 5 Rx medications – 35.8%
  - ≥ 5 combined Rx, OTC, supplements – 67.1%
- Adverse drug events (ADE)
  - 88% of preventable hospitalizations
  - 5+ medications – 88% risk of adverse drug event (ADE)
- Potentially Inappropriate Medications (PIM)
  - 33% of medications on geriatric medication list

Mahoney, D. Dovepress. 2018  
Bourgeois, FT Pharmacoeconomol 2010



OPREMS

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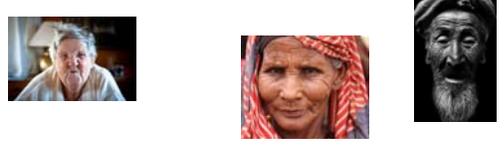
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## Pharmacodynamic/Pharmacokinetic Changes in Geriatric Patients

Images courtesy of Google images



OPREMS

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# Pharmacodynamics (PD)

Site action affinity  
Receptors  
Effect  
Concentration

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# Geriatric PD Changes

Central Nervous System	• ↓ anesthesia dosage requirements
Cardiovascular System	• ↑ doses for $\beta$ agonists and $\beta$ blockers
Respiratory System	• ↑ concentration of $\beta$ agonists

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# Geriatric PD changes

Gastrointestinal System	• ↑ sensitivity to gastric irritants (NSAIDs) • ↓ levels of circulating Vitamin D
Renal System	• Decrease in GFR
Musculoskeletal System	• ↑ incidence of insulin resistance

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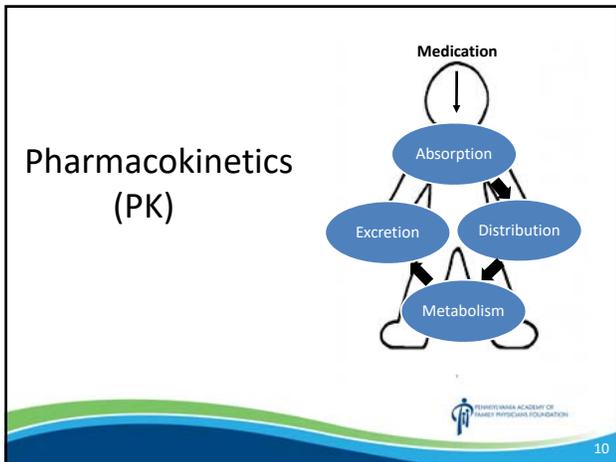
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## Absorption

↓	Saliva secretion	Oral disintegrating tablets (ODT)
↑	Gastric pH	Sucralfate, calcium carbonate, enteric coated medications
↓	Gastric acid secretion	Sucralfate
↓	Gastric surface area	Extended release formulations
↓	Gastrointestinal motility	Extended release formulations
↓	Active transport mechanisms	Cyanocobalamin, iron, calcium

MSD Manual Professional Edition, (2019), Pharmacokinetics in Older Adults - Geriatrics

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## Distribution

↓	Hepatic blood flow	Phenytoin
↑	Adipose tissue	Fentanyl
↓	Serum albumin	Phenytoin, warfarin
↑	Distribution of lipid-soluble drugs	Diazepam
↓	Distribution of water-soluble drugs	Gentamicin, digoxin

MSD Manual Professional Edition, (2019), Pharmacokinetics in Older Adults - Geriatrics

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## Metabolism

↓	Hepatic oxidation reactions	Diazepam
↑	Steady state levels	Digoxin, cephalexin, morphine
↑	Half lives	Vancomycin
↑	Levels of active metabolites	Morphine, meperidine
↓	First pass metabolism (increased bioavailability)	Metoprolol, nortriptyline

MSD Manual Professional Edition, (2019), Pharmacokinetics in Older Adults - Geriatrics

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## Excretion

↓	Renal perfusion	Angiotensin converting enzyme inhibitors (ACEIs)
↓	Kidney size	Lithium
↓	Glomerular filtration rate	Nitrofurantoin, non steroidal anti-inflammatory agents (NSAIDs)
↓	Tubular secretion	Vancomycin
↑	Tubular reabsorption	Salicylates, phenobarbital

MSD Manual Professional Edition, (2019), Pharmacokinetics in Older Adults - Geriatrics

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## Polypharmacy

Defined as a disease:

- Risk Factors
- Symptoms/consequences
- Exacerbating factors

Treatment is "deprescribing"

D'Arrigo, Terri, 2018, Pharmacy Today

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## Prescribing Cascade

Patient has trouble sleeping due to pain

Patient chooses acetaminophen/diphenhydramine

Patient subsequently develops constipation and dry eyes

Patient chooses docusate/senna and lubricating eye drops



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## Prescribing Cascade

Patient has increased pain

Patient chooses a non-steroidal anti-inflammatory agent

Patient subsequently develops increased swelling and heartburn

• After going to their provider, furosemide and famotidine are prescribed



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## Factors predisposing to Prescribing Cascade

- Individual and team factors
- Patient-related factors
- Work-environment factors
- Task-related factors



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## Beers Criteria

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## Beers Criteria

Advantages	Disadvantages
Expert consensus and extensive literature review	Does not discuss drug-nutrient interactions, medication underuse
Three medication categories – older adults, drug-disease state interactions, caution in older adults	Does not discuss CAM, OTC or medication adherence
Most cited and widely used screen tool for Potentially Inappropriate Medication (PIM) used in the elderly	Lacks clear recommendations for appropriate dosing and dosing frequency

Whitman AM, Oncologist. 2016

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## STOPP/START Screening Tool

STOPP: Screening Tool of Older People's potentially inappropriate Prescriptions.

Prescriptions that are potentially inappropriate in persons aged ≥ 65 years

START: Screening Tool to Alert doctors to Right (i.e. appropriate, indicated) Treatments.

Treatments that should be considered for people ≥ 65 years of age, where no contraindication exists

Herford dahrccg.nhs.uk. 2019

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## STOPP Screening Tool

### Screening tool of older person's prescriptions (STOPP)

Central nervous system	First generation antihistamines
Cardiovascular system	Aldosterone antagonists
Respiratory system	Systemic corticosteroids

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## STOPP Screening Tool

### Screening tool of older person's prescriptions (STOPP)

Gastrointestinal system	Proton pump inhibitors for > 8 weeks
Hematologic system	Concomitant NSAIDs/Vitamin K antagonists
Endocrine system	Metformin if GFR < 30 ml/min

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## STOPP Screening Tool

### Screening tool of older person's prescriptions (STOPP)

Renal system	NSAIDs with renal failure, ESRD or dialysis
Urogenital system	Antimuscarinic medications
Musculoskeletal system	Prescription NSAIDs with peptic ulcer disease

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## START Screening Tool

### Screening tool to alert to right treatments (START)

Potential prescribing omissions	Vaccines
	Metformin
	Aspirin
	Statin therapy



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## STOPP/START Criteria

Advantages	Disadvantages
Effective at identifying polypharmacy targets for intervention	Require additional validation in different clinical settings
Tools applied to primary care, nursing home and inpatient settings	Further studies required looking at long term patient outcomes
Assesses drug-drug disease interactions, duplicate therapies and therapies that increase falls risk	Does not evaluate the use of CAM, OTC or medication underuse



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## Screening Tools Comparison

	MAI	Beers Criteria	STOPP/START
OTC	Y	N	N
CAM	Y	N	N
Med administration	Y	N	N/A
Cost	Y	N	N/A
Validated	Y	Y	Y
Allergies	N	N	N/A
ADRs	N	Y	Y
Medication adherence	N	N	N/A
Medication underuse	N	N	N
Subjective	Y	N	Y

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# Deprescribing

Current medication list/indication

Risk vs benefit of deprescribing intervention

Medication – future benefit vs harm

Prioritize drugs for discontinuation with lowest benefit-harm

Implement change/monitor for improvement in outcomes or onset of adverse effects.



Scott, Ian. JAMA 2015.



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# Deprescribing Algorithm



Medication De-Prescribing in Patients, American Association of Diabetes Educators, Medication De-Prescribing in Patients with Diabetes after Implementing Lifestyle Changes, Driving Change and Innovation, 7/16/17



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Back to our patient...



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## Home Medications

Donepezil	Lactobacillus acidophilus
Metoprolol succinate XL	Acetaminophen
Sucralfate	Cyanocobalamin
Pantoprazole	Polysaccharide iron complex
Docusate sodium	Zinc oxide
Docusate sodium/sennosides	Trazodone



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## Medications during Hospitalization

Donepezil	Cyanocobalamin – further workup
Metoprolol succinate XL	Polysaccharide iron complex – further workup
Docusate sodium/sennosides	Mirtazapine
Lactobacillus acidophilus	Lorazepam IV/PO
Acetaminophen PO/PR	Sucralfate
Ondansetron IV/PO	Pantoprazole
ICU electrolytes	Docusate sodium
Zinc oxide	Prochlorperazine
	Cefpodoxime
	Trazodone



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## MAI – one medication example

Pantoprazole	
Is there an indication for the drug?	N
Is the medication effective for the condition?	N
Is the dosage correct?	Y
Are the directions correct?	Y
Are the directions practical?	Y
Are there clinically significant drug-drug interactions?	Y
Are there clinically significant drug-disease interactions?	Y
Is there unnecessary duplication with other drugs?	Y
Is the duration of therapy acceptable?	N
Is this drug the least expensive alternative compared to others of equal utility?	N

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## Patient Case – MAI application

	MAI Score
Pantoprazole	12
Sucralfate	12
Cyanocobalamin	7
Polysaccharide iron complex	7
Trazodone	7
Docusate Sodium	4
Docusate sodium/sennosides	4
Zinc oxide	4
Acetaminophen	2
Donepezil	0
Lactobacillus acidophilus	0
Metoprolol succinate XL	0

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## Beers Criteria – Patient Case Example

- Beers list medications = 6 (trazodone, prochlorperazine, lorazepam (IV/PO), pantoprazole, mirtazapine)
- Avoid lorazepam IV/PO
  - Age-related
  - Comorbidities present
  - Drugs with similar side effect profiles
- Avoid long term proton pump inhibitor (PPI) use
- Use mirtazapine with caution



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## STOPP/START – Patient Case Example

- Stop prochlorperazine
- Stop pantoprazole
- Start influenza vaccine
- Start pneumococcal vaccine
- Start shingles vaccine



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## Meds during hospitalization – after Deprescribing Tools

Donepezil	Cyanocobalamin – further workup
Metoprolol succinate XL	Polysaccharide iron complex – further workup
Docusate sodium/sennosides	<del>Mirtazapine</del>
Lactobacillus acidophilus	<del>Lorazepam IV/PO</del>
Acetaminophen PO/PR	<del>Sucralfate</del>
Ondansetron IV/PO	<del>Pantoprazole</del>
ICU electrolytes	<del>Docosate sodium</del>
Zinc oxide	<del>Prochlorperazine</del>
	<del>Cefpodoxime</del>
	<del>Trazodone</del>



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## Meds during hospitalization – after Pharmacist Intervention

Donepezil	Cyanocobalamin – further workup
Metoprolol succinate XL	Polysaccharide iron complex – further workup
Docusate sodium/sennosides	<del>Mirtazapine</del>
Lactobacillus acidophilus	<del>Lorazepam IV/PO</del>
Acetaminophen PO	<del>Sucralfate</del>
<del>Ondansetron IV/PO</del>	<del>Pantoprazole</del>
<del>ICU electrolytes</del>	<del>Docosate sodium</del>
<del>Zinc oxide</del>	<del>Prochlorperazine</del>
	<del>Cefpodoxime</del>
	<del>Trazodone</del>



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## Other Pharmaceutical Care Recommendations

- Untreated indication – osteoarthritis
- Drug interactions (drug/drug, drug/food)
- Medication use without an indication



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## Blue Book Medication Reduction Initiative

Championed by Dr. Jonathan Whitney

Inpatient/outpatient population goal → 20% meaningful reduction of lorazepam, zolpidem and cyclobenzaprine orders



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Beers medication reduction initiative with goals of potentially decreasing falls, delirium or orthostatic hypotension

On admission, the chief complaint is most important – BUT, avoidance of potential hazards can also have positive impact



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So, this could be what happens if we are not paying attention to one of the legs...



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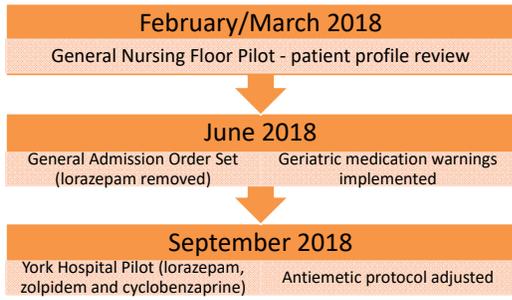
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## York Hospital Timeline



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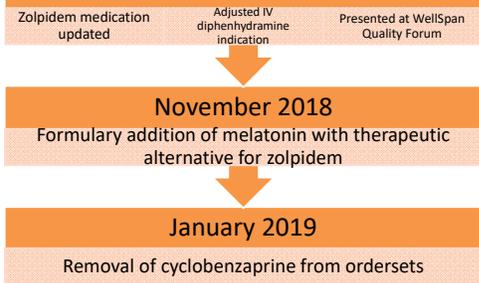
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## October 2018



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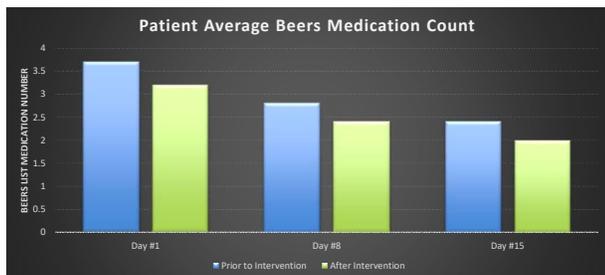
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## York Hospital General Nursing Floor Pilot



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## Inpatient prescribing of lorazepam, zolpidem and cyclobenzaprine for patients ≥65 years old

	FY2018 Q3	FY2019 Q1	Change (%)
Patient Days*	42,624	41,933	
# of Orders	2,531	1,967	- 21%
# of Administrations	3,923	3,087	- 20%

\* Adjusted per patient day



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## Did you know?

Jeanne Louise Calment was the oldest human who lived for 122 years and 164 days.

Born in France on February 21, 1875

Died at a nursing home in Arles, Southern France, on August 4, 1997.



Bigwood JG. Jeanne Louise Calment. Find A Grave: <https://www.findagrave.com/memorial/1864/jeanne-louise-calment>. Published January 1, 2001. Accessed January 23, 2019.



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Less is more



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Love your Heart, Calm your Mind & Feel your Breath***  
Mihir Modi, DO, FAAFP, CIHA

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

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**Holistic Medicine**  
"Love your Heart, Calm your Mind & Feel your Breath"



**THE ULTIMATE DEFENSE**  
**MIHIR G. MODI, D.O., FAAFP, CIHA**  
**WELLSPAN HEALTH FAMILY PHYSICIAN**

790AFT  1

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**Disclosure**

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**Introduction**  
**Thank you / Superheroes**

**Thank You for the Special Opportunity to Participate in the PAFP & Wellspan Health CME**  
**It is Truly an Honor!**



**All of you are the Real Superheroes / True Champions!**

790AFT  3

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## Learning Objectives

- Identify Various Strategies / Tools of Mind-Body Medicine to Develop Your Well-Being & Build Resilience.
- Discuss Nutrition's Vital Role in Your Overall Health.
- Integrate the Skills taught into Your Daily Routine.



79DAFT

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## Karli “ A Beautiful Story “



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## Hurricane Analogy

**MINDS → FULL!**  
Constant Thoughts are Swirling around in our Brains!



**EYE ( Center ) → CALM  
PAUSE!**

**GOAL → Cultivate an Inner Environment of Peace & Silence  
( Live Each Day Heartfully & Mindfully! )**



79DAFT

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### 3 Simple Questions

1. How many of you lead busy lives?
2. Are there times - you feel stressed out?
3. Do you ever forget to take care of yourself?



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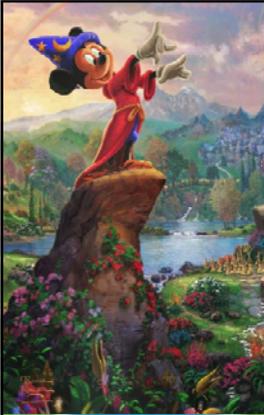
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Are you ready to experience some Magic?

- PAY CAREFUL ATTENTION!
- THIS TALK IS FOR YOU!

Thomas Kinkade – Fantasia Painting



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### Beautiful Quote Nikola Tesla



If you want to find the Secrets of the Universe, Think in terms of Energy, Frequency & Vibration.

Tesla logo - z7z Jewelry



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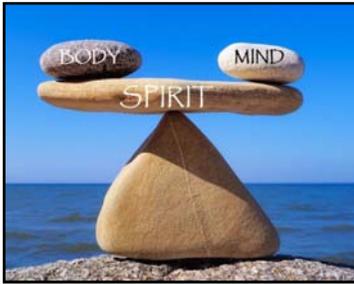
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## Mind-Body-Soul Life Balance



www.tappytwins.com



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## Well-Being Is a Skill! Dr. Richard Davidson



- **Neuroplasticity:**  
Our brains are shaped by our experiences.

By cultivating virtuous qualities, by training our minds, we can change our brains in ways that will allow us to flourish.

- **Epigenetics:**  
Science of how genes are regulated.  
Born with a genetic code – DNA



Youtube.com

Can change – extent to which any given gene is turned on or off.



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## "The Scientific Evidence" MRI Studies

**Research Studies**

Cortical thickness of the brain

Changes in gray and white matter.

**Cortical areas thicker in meditators**



**Insula**



**Pre/Postital**



Kang D et al. The effect of meditation on brain structure: cortical thickness mapping and diffusion tensor imaging. *Sci. Cogn. (Brno University)*. 2012; January; 6(1):2-10.

Farb D et al. The impact of brain anatomy of meditation practitioners: alterations in cortical gyfification. *Front. Hum. Neurosci.* 2012; 6:149-55.



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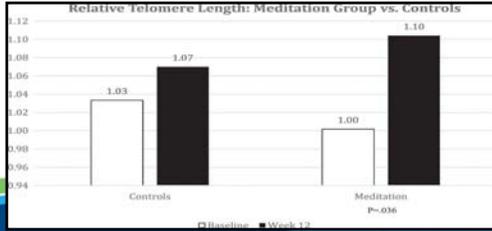
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## "The Scientific Evidence"



Slideshare.net



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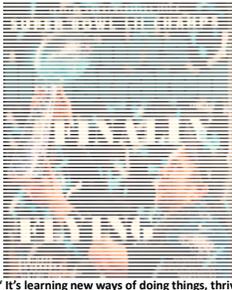
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## Resilience



"It's learning new ways of doing things, thriving in an ever-changing environment." (Nick Foles, Super LII MVP)



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## Here's your Tool Box!



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# MIND



Image: Dreamstime.com

THE YAMAHA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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# Meditation

- **Derivation:** Mudita – “Finding the Joy of Life within One Self”
- **Experiment on Ourselves!**
- **Similar to Digging a Well**
  - 1<sup>st</sup> → Soil ( Top)
  - 2<sup>nd</sup> → Rocks
  - 3<sup>rd</sup> → Rubbish
  - 4<sup>th</sup> → Fresh Water ( Bottom )
- **Process** → Thinking about 1 Thing Continuously
- **Results** → Clarity & Simplicity → Peace of Mind
- **Character Building** → Balancing the Senses
- **Changes our Approach ( Outer World )** → Lens of Gratitude / Love!

THE YAMAHA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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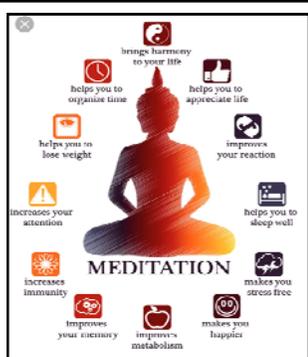
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Source: iJugaadBlog

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**4 Tips on Setting Up a Successful Meditation Practice**

1. Perform before Sunrise ( Stillness )
2. Daily Set Routine → 20-30 mins or longer
3. **Ideal Environment:**  
Tranquil place / Free of Distractions  
Comfortable Clothing / Chair, Warm Blanket
4. Individual & Group Practice → Way of Life!



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**What is Mindfulness?**

1. Paying Attention
2. On Purpose
3. Nonjudgmentally
4. Moment by Moment  
to the Unfolding of Experience!



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**4 Simple Mindfulness Practices**  
( Daily Life )

- 1. **AWAKENING / AM:** “What is my Purpose for Today?”
  - A. Sit in Bed or Chair – Relaxed Posture with Eyes Closed
  - B. Take 3 Long, Deep, Nourishing Breaths  
In → Nostril / Out → Mouth
  - C. Meditation → 20 Mins ( i.e. Heartfulness )
  - D. Drink warm glass → Lemon Water, Coffee or Tea



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### 4 Simple Mindfulness Practices

#### (Daily Life)

- 2. **EATING:** Mealtime / Snacks → Enjoy every Bite!
  - A. Stay Hydrated! Dehydration can present as Hunger.  
Drink water → 1<sup>st</sup> thing in AM & between meals.
  - B. Healthy Snacks! → Pistachios, Almonds, Sunflower seeds, Carrots, Apple
  - C. Avoid → Refined Carbs, Sugary Foods & Junk Food!
  - D. Eat according to your Hunger → Listen to your Body / Belly.
  - E. Practice Slow & Mindful Eating.
  - F. Quality Sleep! Sleep Deprivation → Sub-Optimal Food Choices.



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### 4 Simple Mindfulness Practices

#### (Daily Life)

- 3. **PAUSE** → FOCUS ON BREATH!
  - Fast Brain → Autopilot
  - Slow Brain → Deliberate Actions
  - Examples: Daily Meditation → Special Shirt / Clothing
  - Favorite Mug - Reminder to Pause, Sip Coffee / Tea
  - Apple Watch / Breathing App
  - Knock on Door, Take Breath → Enter Pt's Room



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### 4 Simple Mindfulness Practices

#### (Daily Life)

- 4. **PM / BEDTIME:**
  - HEARTFULNESS:**
    - A. Cleansing ( 15 mins ) → End of Work Day
    - B. Meditation → Bedtime
    - C. Gratitude → 3 Items from that Day
  - MINDFULNESS:**
    - A. Avoid Electronics / TV!
    - B. Yogurt with Probiotics / Banana / Grapes
    - C. Warm / Cool Shower → Release Tension from the Day
    - D. Calming Body Lotion / Essential Oils
    - E. Ambient Room Temp → 68 degrees.
    - F. Listening to Relaxing Music / Nature Sounds
    - G. Reading a Book
    - H. Prayer



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**Body Scan**

- **BODY SCAN**  
Sit Comfortably / Gently Close - Eyes

**BREATH = ANCHOR!**

IN = Note → Tension / Sensations  
OUT = Invite Area → Soften / Relax

Focus on Body Part / Region → 3 Breaths

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**Body Scan**  
Relax = Mnemonic

**R = bReath** → Relaxation

**E = Exhalation / Energy** → Specific Body Part – Relax it.

**L = Legs / Feet** → Head

**A = Attention**

**X = X marks the Spot** → Heart ( Final Destination )

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## Heartfulness Meditation



Source: Awakens/insights.com



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## What is Heartfulness?

- Heartfulness → Heart-based Meditation Practice  
Thinking → Feeling  
Complexity of Mind → Simplicity of Heart
- Cultivated → Inner Stillness & Silence
- Arises when One Opens Their Heart, Becoming More Loving,  
Compassionate & Kind to One's Own Self & to All of Humanity.

### BENEFITS

1. Reduced Stress / Anxiety
2. Improved Focus
3. Dec Pain
4. Better Sleep



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## Heartfulness Relaxation

Focus Attention → Source of Light 



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**Body Scan**

AUDIENCE  
PARTICIPATION



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**Heartfulness**

**3 Minute Group Meditation**

PLEASE START MEDITATION!

THAT'S ALL!



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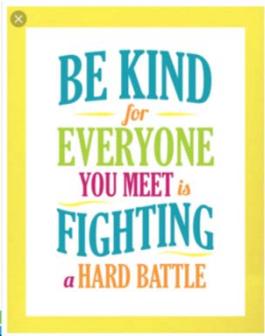
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**Plato Quote**



www.quotemaster.org



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## BODY



allthatsinteresting.com & www.clker.com

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## Nutrition

The Mediterranean Diet  
"Best Diet of 2019" – US News & World Report



Aleman Et al, 2016

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## Cleanse & Strengthen Your Body!

### Part 1

1. Eat → Organic Plant based Diet

Recent W.H.O Analysis → The Lancet 1/19

Inc. Fiber & Whole grains → 15-31% Reduction - Death & Disease  
Eat 25-29 grams of fiber / day ( i.e. Heart Disease, Cancer & DM II)

2. Drink → Lots of Water

( ½ - 1 oz / Pound Body Weight ) per Day  
150 pd Individual → 75-150 Ounces / Day



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## Cleanse & Strengthen Your Body!

### Part 2

3. A. Cardiovascular Exercise   
Moderate Activity → 150 mins / week  
Vigorous Activity → 75 mins / week
- B. Strength Training  - All Major Muscle groups  
At least 2 Days / week
- C. Stretching   
- Min 3 days / week x 5-10 mins
4. Cleansing Meditation / 3 Daily Gratitude Items / Prayer 
5. Sleep → 7.5 Hrs



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## Feel your Breath!

### Inhalation:

- Imagine breathing in Divine Love throughout Your Being.
- Heart filling up with Love! ( i.e. Red Balloon )

### Exhalation:

- Radiate the Feeling of Love & Gratitude to All Humanity!

Let's All Practice!



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## Stress Reduction on the Fly Minis

### Response to a Stressor / Anticipation of a Stressor

1. Quietly → Take a Deep Breath In.
2. Slowly & Consciously → Let your Breath Out.
3. As you Breathe Out → Repeat a Calming Word or Phrase.
4. Repeat → 3-4 Times.

Now, Let's Practice doing a MINI!



Dr. Herbert Benson



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## Welcome to Paradise!



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## Imagery / Visualization

The Mind is Present → Every Cell of the Body!

- A. **Cardiac pts**  
Visualize Coronary Arteries  
Imagine → Blockages Dissolving or Disappearing!
- B. **Cancer pts**  
Healthy Cells → Replacing Cells with Cancer!
- C. **Everyone**  
Believe in Yourself & Envision Success!



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## KEY POINTS

		TOOL	
MIND		Wrench	→ Mindfulness Meditation Body Scan
+			
BODY		Paint Brush	→ Breathing Exercises Yoga, Nutrition
+			
SOUL		Flashlight	→ Heartfulness Meditation "What is your story?"
-----	-----	-----	-----
YOU		Level	→ Life Balance!



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**Heartfulness Prayer**

"I need your help, Master.  
Make me humble,  
Make me your true servant."

Kamlesh Patel

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**Prayer for Humanity  
&  
Power of Hugs**

Everyone Deserves Happiness!

Many Blessings for All!

Give a Hug Today!

Source: Hallmark Cards

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**Philadelphia**  
**"The City of Brotherly Love"**

A + B → C

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**Love, Kindness & Meditation**

Individual

Global Social

HEALTHYVIBRA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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*Goal → Life Balance!*



**FIND BALANCE IN YOUR MIND, BODY & SOUL**

DOYOUYOGA.COM

**Live Each Day Heartfully & Mindfully!**

HEALTHYVIBRA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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**Heartfelt Thanks!**



heartfulness

**"May the Force Be With You"**

HEALTHYVIBRA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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## References

- Heartfulness.org
- Vibe by Robyn Openshaw
- Heart Intelligence  
by Doc Childre, Howard Martin, Deborah Rozma & Rollin McCraty
- Let's Meditate App
- Insight Timer App
- Jon Kabat Zinn - MBSR ( Founder )
- Dr. Herbert Benson
- Omega Institute
- 5 Simple Mindfulness Practices for Daily Life – Parneet Pal, et al.  
Mindful Magazine 4/2016



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## Heartfulness Relaxation

Sit Comfortably / Gently Close your Eyes / Feel your Breath.

Slowly, **Move Your Attention** to your **Toes**.

You may **Wiggle** them a Little.

**Allow** your **Toes** to **Relax**.

**Feel** a **Very Relaxing Energy** Entering your **Feet** from the Earth...

**Allow** your **Feet** to **Completely Relax**.

**Let** this **Energy** slowly **Move Up**, **Relaxing** your **Ankles**,  
your **Lower Legs**, the **Calf Muscles**, your **Knees**,  
**Thighs** & your **Hips**.

**Feel** All these **Body Parts** **Deeply Relax**



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## Heartfulness Relaxation

**Let** this **Energy** Slowly **Move Up**.

**Relaxing** your **Lower Back** & your **Upper Back**.

**Feel** your **Entire Back** Relax

Now, **Move Your Attention** to your **Abdomen**

**Relax** All the **Muscles** of your **Abdomen**

**Move into** your **Chest**

**Allow** your **Chest** to **Deeply Relax**

**Move onto** your **Shoulders**

**Feel** your **Shoulders** getting **Lighter** as if they're **Melting Away**.

**Let** this **Energy** slowly **Move into** & **Relax** your **Upper Arms**, **Elbows**, your **Lower Arms**, your **Hands** & your **Fingers** all the way to the **fingertips**.

**Relax** your **Neck muscles**.



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## Heartfulness Relaxation

- **Move your Awareness** → your **Face**.  
Relax the **Jaws ... Mouth ... Nose ... Eyes ... Earlobes**  
Facial muscles ... **Forehead**
- Gently **Move into Your Mind**  
**Allow Your Mind to Deeply & Completely Relax**  
Relax the **Top of your Head & Back of your Head**
- Gently **Scan your WHOLE BODY** from **Top of Head to Tip of your Toes**  
**Feel** → Your **ENTIRE BODY is Relaxed**
- **Move your Attention** → your **Heart**.  
**Feel** → Immersed in the **Love & Light Already Present Within your Heart**.



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## 6 Simple Mindfulness Practices (Daily Life)

4. **EXERCISE:** Specific Goal / Pay Attention → Body Sensations & Surroundings
- Warm Up → 5 mins  
( i.e. Jumping Jacks , Stretching )  
Match Rhythm of Breath to Your Movement
  - Settle into a Rhythm → 10-15 mins  
Listen to Music / Watch TV
  - Challenge Yourself → 10-15 mins  
(i.e. Faster Speed, Inc Reps, Heavier Weights )
  - Cool Down → 5 mins
  - Rest → 5 mins



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## 6 Simple Mindfulness Practices (Daily Life)

5. **DRIVING:** Awareness of Body / What you See & Hear
- First, Take a Few Deep Breaths
  - Notice → Feel of Hands on the Steering Wheel / Foot on Gas Pedal  
Contour of Body in Seat
  - Pay Attention → Sounds you Hear.
  - Enjoy your Drive → Changing Scenery / Beauty All Around You.
  - Observe → Other Drivers



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## 10 Tips on Setting Up a Successful Meditation Practice

6. Posture: Seated or Sitting , not Lying Down  
Feet Touching Ground, Hands at Side or Loosely Clasped
7. Reward System
8. Accountability
9. Individual & Group Practice
10. Way of Life!



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## Cultivate a Healthy Gut

HIPPOCRATES → “All Disease Begins in the Gut.”

- PROBIOTICS: Living Microorganisms → Beneficial Effect  
- Digestive Tract & Immune System  
(i.e. Yogurt, Miso Soup, Olives – Brine cured)
- PREBIOTICS: Dietary fibers →  
- Promote Growth of Beneficial Gut Bacteria.  
(i.e. Bananas, Garlic, Onions, Asparagus, Whole Grains)



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## Yoga

- Definition: Union of Mind, Body & Soul
- Movement & Breath
- Breath = Energy
  
- Sun Salutation
- Chair Yoga
- Laughter Yoga
- Warrior & Balance Poses



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## Well-Being Is a Skill!

Dr. Richard Davidson

- **Innate Basic Goodness:**  
Prefer warm-hearted, cooperative, altruistic interactions rather than greedy or aggressive interactions



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## Breathing with Awareness of Purpose

IN      BREATHE      OUT  
          →

1. Good for Me → Good for Everyone
2. Positivity → Optimism
3. Appreciation → Joy
4. Understanding → Love



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## Office Strategies for Success!

- Daily Inspirational Quote
- Rounding
  - What's working well?
  - What needs improvement?
  - Any additional tools you need to do your job?
  - Who would you like to recognize in the office?
- AM Huddle – pre-visit
- 5-10 min "Sharing for Connection" Powerpoint Presentation
  - Each meeting by a Committee Member
- Birthday Buddies



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## Leadership Key Qualities

- Heartful
- Charisma
- Passion
- Good Communicator
- Visionary



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## 10 Ways to Raise your Vibe!

- Heartfulness Meditation
- Deep Breathing
- Love
- Appreciation / Gratitude
- Compassion / Caring
- Kindness
- Doing Challenging & Meaningful Mental or Physical Work
- Positive Thoughts -> Mind / Every Cell of Body!
- Being around Positive People
- Being Outdoors



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## Words of Wisdom

Live Simply,  
Love Generously.  
Care Deeply,  
Speak Kindly...  
&  
Leave the Rest to God.



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## Quick Coherence Technique

### (1 min Heart-focused Breathing)

Use to recover from Challenging Situations.

**Step 1.** Focus Attention on Heart region

Imagine breath flowing in & out of heart / chest area  
Breathe a little slower & deeper than usual.  
Suggestion : Inhale 5 seconds, Exhale 5 seconds

**Step 2.** Make sincere attempt to experience a regenerative feeling  
( i.e. Appreciation / Care / Love for someone  
or something special in your life )

NOW, LET'S HAVE EVERYONE TRY IT FOR 1 MIN!



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## Heart Lock-In Technique

Practice to build your intuitive connection.

**Step 1.** Focus your attention in heart region

Imagine breath flowing freely in & out

**Step 2.** Activate & sustain a regenerative feeling such as

Appreciation, care or compassion.

**Step 3.** Radiate that renewing feeling to yourself & others.



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## Self-care Practices (Healthy Mind)

### MIND

1. Try Something New!
2. Laugh Often / Humor ( Daily Life )
3. Meditation



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## Self-Care Practices ( Healthy Body )

### BODY

1. **Yoga / Tai Chi**
2. **Enjoy – Long Bath, Shower or Massage**
3. **Sing / Dance ( Favorite Music! )**
3. **Wear Nice Clothes / Jewelry**



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## Self-Care Practices (Healthy Soul)

### SOUL

1. **Volunteer / Help Someone!**
2. **Immerse in Nature**
3. **Prayer / Attend Church , Temple**



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## A Family Physician... (The Essence)

- **A Family Physician...**  
Is grateful for the privilege of taking care of you & your loved ones.
- **A Family Physician...**  
Serves as an Educator, Cheerleader & an Advocate for Wellness & Prevention
- **A Family Physician...**  
Has fun caring for your children & playing with them & seeing the smiles on their faces.



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**A Family Physician...**  
**(The Essence)**

- **A Family Physician...**  
Will always cherish the special bonds / relationships established over the years while taking care of you & your family.
- **A Family Physician...**  
Is involved in his or her community.
- **A Family Physician...**  
Truly loves what he or she does, always working with a sense of purpose --- provide the best quality care for YOU.



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**A Family Physician...**  
**(The Essence)**

- **A Family Physician...**  
Is present every step of the way in your life journey, Sharing in your joy & triumphs, heartaches & providing hope & comfort during difficult times.
- **A Family Physician...**  
Offers a personal touch, knowing each member of your family.



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**A Family Physician...**  
**(The Essence)**

- **A Family Physician...**  
Actively Listens as a Patient Shares His or Her Unique Life Story.
- **A Family Physician...**  
Enjoys Hearing about & Learning from their Patient's Personal Experiences.



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## A Family Physician... (The Essence)

- **A Family Physician...**  
Enjoys interactions with the wonderful office staff & working towards the common goal of keeping our community healthy.
- **A Family Physician...**  
Considers himself / herself the luckiest person alive.

Thank you & God Bless All of You  
from a proud Family Physician.

Mihir G. Modi, D.O., FAAFP



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## 5 Reasons to Consider Fasting

1. Improves Immune Regulation
2. Stimulates Cellular Autophagy
3. Enhances Genetic Repair Mechanisms
4. Improves Insulin Sensitivity
5. Reduces Hyperinflammatory process in Autoimmune Diseases  
(i.e. Systemic Lupus, Rheum Arthritis, Colitis & Crohn's Disease)

Reference: Bob & Bobby / HealthTalks Online



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## Now, It's Time to Fully Enjoy Your Hershey's Kiss!



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## Mindful Eating Exercise ( Hershey Kiss )

- Everyone take a Hershey Kiss  
Unwrap / Place ( Palm of Hand )
- Experience it with a Beginner's Mind  
( i.e. Imagine - 1<sup>st</sup> time Eating One! )



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## Mindful Eating Exercise

### SIGHT → Notice

- (1) Shape
- (2) Color
- (3) Volume of space

### TOUCH → How does it Feel?

- (1) Close your Eyes / Experience it
- (2) How does it Feel?  
Smooth / Sticky / Hard or Soft / Weight



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## Mindful Eating Exercise

### SMELL

- (1) Place Hershey Kiss by Nose
- (2) Breathe in its' Scent
- (3) How does it Smell? Sweet

How is your Mouth or Gut Reacting?



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## Mindful Eating Exercise

### LIPS / MOUTH / TONGUE:

- (1) How does it feel? ( Lips )
- (2) Bite - Hershey Kiss / Feel Burst of Taste!
- (3) Slowly Chew / Well Chewed → Swallow it
- (4) Feel its transit ( Esophagus → Stomach )
- (5) Residual Flavors? ( Mouth )



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## Imagery / Visualization

### INVITE YOU

#### Create Image of a Beautiful garden!

- Notice Layout
  - What is growing – Flowers, bushes, trees
  - Birds singing
  - Breeze rustling the leaves
  - Notice scent of the outdoors – mulch
  - Warm sun
  - Comfortable bench
  - Moist soil
  - Bag of seeds , plant the seeds
  - Each one represents something imp to you.
- Imagine you are a part of that garden, that soil.  
Imagine that dreams touching every part of  
your body, every organ , every nerve, every cell.



OPEN TO EVERY POSSIBILITY & OPEN TO THIS MOMENT!



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## Mindfulness Poem

### RUMI



#### The Guest House

This being human is a guest house.  
Every morning a new arrival.  
A joy, a depression, a merriment,  
some momentary awareness comes  
as an unexpected visitor.  
Welcome and entertain them all!  
Even if they're a crowd of sorrows,  
who violently sweep your house  
empty of its furniture,  
still treat each guest honorably.  
He may be clearing you out  
for some new delight.  
The dark thought, the shame, the malice,  
meet them at the door laughing,  
and invite them in.  
Be grateful for whoever comes,  
because each has been sent  
as a guide from beyond.

RUMI



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## The Guest House – Rumi

### Meaning & Interpretation

Metaphor of Guest House → Describe Life's Journey

- Each day is an opportunity to experience something new in our lives, even if it's unexpected.
- Makes us appreciate life's uncertainty & embrace Mindful Living
- Face uncomfortable thoughts with acceptance & courage  
Thus, these thoughts will lose their power & control over us.

**Summary:**

Entirety of Human experience is valuable & that we should cherish each moment that is presented to us.



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## Breathing Exercise

### 5 minutes

<https://www.mindful.org/a-five-minute-breathing-meditation/>



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## Deep Breathing Exercise

1. Take Deep Breath In
2. Hold for 5 seconds
3. Exhale Fully!

Repeat - 10 Cycles



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## Heartful Affirmations

- I am deeply connected with everyone around me ...
- Everything surrounding us, the air particles, people, the birds, the trees ... everything around me is deeply connected.
- I am genuine I my thinking ... All human beings are developing correct thinking, right understanding & an honest approach to life.
- I am calm, clear & confident with my words & deeds.
- I am happy, joyful & grateful for all my life experiences.
- I am becoming more empathetic, compassionate & loving.
- I am balanced. I meditate.



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Medical Malarkey: Medical Misinformation in the Digital Age  
and How to Correct It***

William Sonnenberg, MD

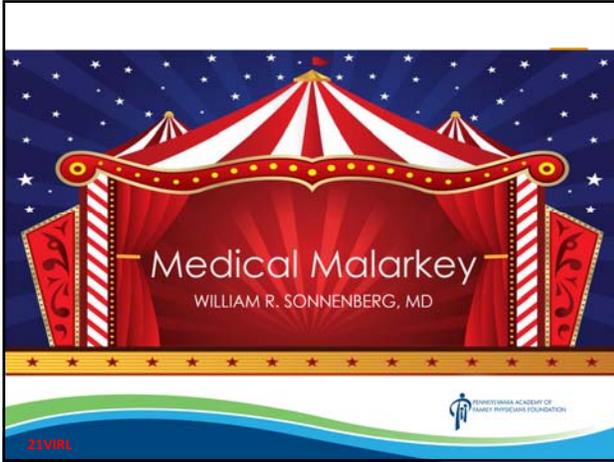
**Disclosures:**

The speaker is part of the speaker's bureau for Salix. There is no conflict of interest.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**



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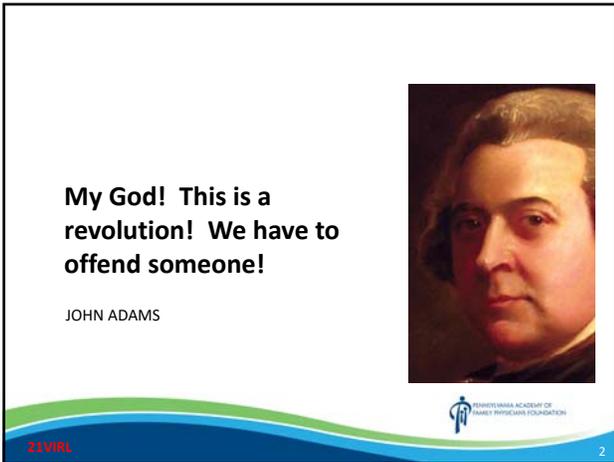
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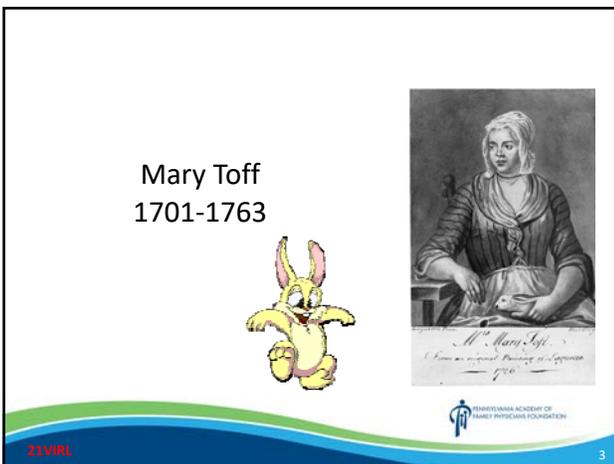
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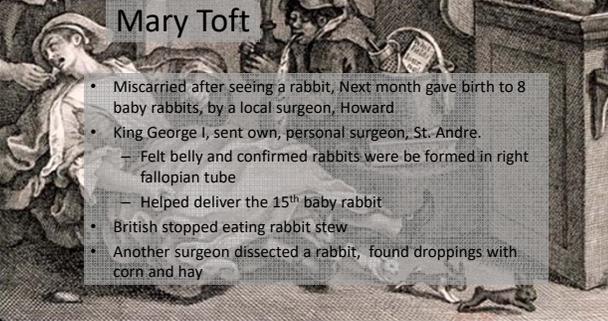
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## Mary Toft

- Miscarried after seeing a rabbit, Next month gave birth to 8 baby rabbits, by a local surgeon, Howard
- King George I, sent own, personal surgeon, St. Andre.
  - Felt belly and confirmed rabbits were be formed in right fallopian tube
  - Helped deliver the 15<sup>th</sup> baby rabbit
- British stopped eating rabbit stew
- Another surgeon dissected a rabbit, found droppings with corn and hay



21VHRU

PENNSYLVANIA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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“To argue with a person who has renounced the use of reason is like administering medicine to the dead.”

Thomas Paine



21VHRU

PENNSYLVANIA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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**ANYTHING BUT A COLD**

21VHRU

PENNSYLVANIA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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## Antibiotics for Bronchitis

- 90% are viral, 10%-30% multiple viruses
- Viral shedding is decreasing at presentation
- 2/3 are treated with antibiotics
- 55% of patients believe they help for URI's
- 25% use left over antibiotics

ROSS H. ALBERT, MD, PhD, Am Fam Physician. 2010 Dec 15;82(11):1345-1350.



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## Do Antibiotics Prevent Pneumonia?

- 814,000 pts, 1.5 million visits
- 65% Dx with bronchitis
- Significant minor adverse side effects in treated group
- Less hospitalizations for pneumonia in antibiotic group
  - NNT is **12,225**



Meropol SB et al. Ann Fam Med March/April 2013 vol. 11 no. 2 165-172



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**Green Mucous**  
**≠**  
**Bacterial Infection**



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### Why is Mucous Green?

- Not Bacteria nor "Sinus"
- Green protein myeloperoxidase from neutrophil and monocyte granules




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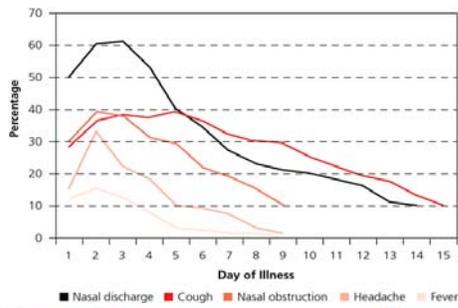
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### Natural Course Rhinosinusitis URI




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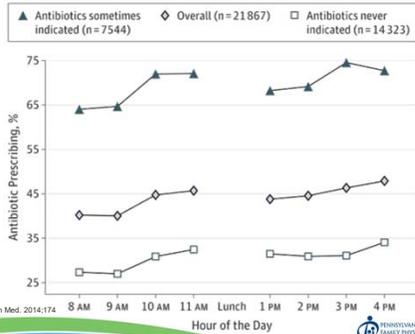
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### ABX Scripts and Time of Day



Linder et al. JAMA Intern Med. 2014;174




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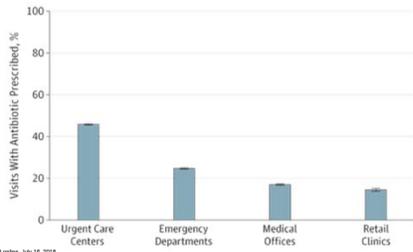
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## Antibiotic-Inappropriate Respiratory Diagnoses Leading to Antibiotic RX



AMA Intern Med. Published online July 16, 2018




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## Incentives Against Antibiotic Stewardship in Retail Clinics and UrgiCenters

- Patients seek these clinics specifically to get an antibiotic
- Clinicians concerned about not returning if the expectations aren't met
- Conflicts with business model



AMA Intern Med. Published online July 16, 2018

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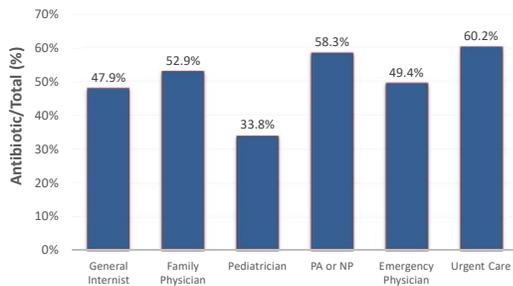
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## Antibiotics for Presumed Viral Illnesses by Specialty



Diab M, Hsieh T. Antibiotic use for viral acute respiratory tract infections remains common. *Am J Med*. 2018;131(10):e87-e87a.




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## Study implications

- Antibiotic use for viral infections has increased from 2007 to 2012
- 8.9% of patients get a 2<sup>nd</sup> antibiotic script for the viral infection
  - Peaks at day 3 and day 7
- Stop using the term “bronchitis”
  - “You have a chest cold that is caused by a virus and will probably last about 2 weeks. Antibiotics are unlikely to help and may hurt you.”
- Azithromycin is too cheap

David Maki, M.D. T. Antibiotic use for viral acute respiratory tract infections remains common. Am J Med Care. 2012;53(10):e42-425



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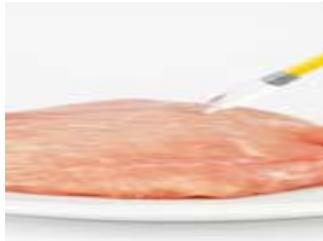
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Everybody wants their chicken “antibiotic free” but y’all beg for antibiotics for a viral infection



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## Fever Phobia



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**“Fever is a mighty engine which nature brings into the world to the conquest of her enemies,”**

THOMAS SYDENHAM



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## 98.6°F ?

- Studies from 19<sup>th</sup> century
- New Values
  - Mean 36.8 °C (98.2°F)
  - Upper limit 37.7°C (99.9°F)
- 6 am nadir, 4-6pm zenith.
- Mean variability of 0.5°C (0.9°C)



Carl Reinhold August Wunderlich

JAMA. 1992;268(12):1578



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## Physician Perception of Fever in Children

- 5% believe fever is safe
- 35% believe fever causes brain damage
- 8% believe causes death
- 29% believe anti-pyretics prevent brain damage
- Only 26% believe a sleeping child should be left undisturbed
- Almost all recommend sponging or bathing to reduce fever



Saudi Med J. 2001 Feb;22(2):124-8



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## Alternating Ibuprofen and Acetaminophen?



- 0.27° C lower at 1 hour with combination
- No improvement in comfort
- AAP advise against routine combination
- May increase risk for kidney or liver injury
- Different doses and intervals

Pediatric Child Health, 2014 Dec; 19(10): 531-532



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## Treatment of Fever

- Fever is a physiologic response
- Most fevers self limited and benign
- No evidence that fever makes illness worse
- Treatment merited to aid comfort
- Fever response does not determine if illness is viral or bacterial
- Don't waken child to treat fever



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## PENICILLIN ALLERGY



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## Risk of Penicillin Allergy

- 10% of population reports PCN allergy
  - 90% of these have no IgE sensitivity
- Significant IgE mediated allergy less common due to less parenteral PCN
- Severe anaphylactic reactions to oral amoxicillin rare

Shenoy, EG et al. JAMA. 2019;321(2):188-199



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## Low Risk

- Gastrointestinal symptoms
- Solely based on family history
- Pruritus without rash
- Yeast infection
- Fine popular rash



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## Risk of Incorrect Dx of PCN Allergy

- Treatment failures for infections best treated with penicillin
- Increased use of broad spectrum antibiotics
- More health care associated-infections such as C. dif
- Adverse reactions to other antibiotics



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## VITAMINS?



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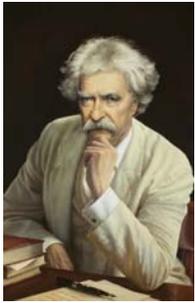
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**BE CAREFUL ABOUT  
READING HEALTH  
BOOKS. YOU MAY DIE  
OF A MISPRINT.**



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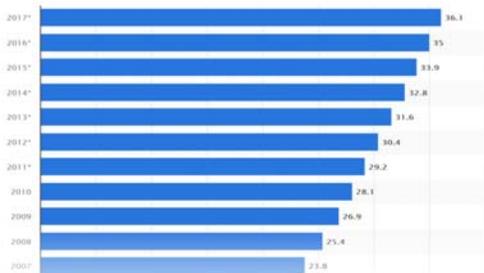
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## Vitamins, Big Business



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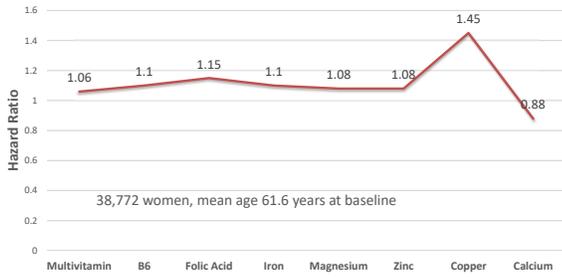
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## Multivitamins and Risk of Death



Arch Intern Med. 2011; Oct 10; 171(18): 1925-1933




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## Antioxidant Vitamins



- Vitamins A, C, and E plentiful in fruits, especially berries
- Male smokers taking vitamin A more likely to get lung cancer
- 2007 study of 68 randomized trials of antioxidant supplements showed 5% increase in mortality
- Wheat germ has highest vitamin E of any actual food, yet most vitamin E tablets have 10 times the E.




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## Physician Health Study II

- Trial of vitamin E and C in 14,641 male physicians 50 and older
  - 754 had CAD
  - 8 years follow-up
- Neither had effect on mortality
- Vitamin E increased risk of hemorrhagic stroke (HR 1.74)



JAMA. 2008;300(18):2123-2133




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## Women's Antioxidant CV Study

- 8,171 female health professionals at increased risk
- 40 years and older with 3 or more risk factors or hx of CVD
- Mean follow-up of 9.4 years
- No effect on CV events in high risk women



*Arch Intern Med.* 2007;167(15):1610-1618



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## High Dose Vitamin D and CV Disease

- Ages 50-84, 5110 randomized participants
- 200,000 unit initial dose, then 100,000 units monthly dose for mean of 3.3 years
- No help with CV outcomes (HR 1.02)



*JAMA Cardiol.* 2017 Jun 1;6(6):608-616



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## Vitamin E and Prostate Cancer

- Previous studies hinted at protection
- SELECT Trial
  - 17% increase in prostate cancer with 400 IU/day of Vitamin E
  - No help with selenium
- RDA for vitamin E is 22.5 IU/day



*JAMA.* 2011 Oct 12;306(14):1549-56



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## Beta-Carotene and Prostate Cancer

- ATBC Cancer Prevention Study
  - 23% increase in incidence
  - 15% increase in mortality
- Excess risk resolves when supplements stopped



Vivekananthan DP et al. Lancet. 2003;361(9374):2017



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## The Alpha-Tocopherol Beta Carotene Cancer Prevention Study Group

- Carotenoid-rich fruits and vegetables associated with reduced risk of lung cancer
- 29,133 male smokers in SW Finland
  - 18% higher risk of lung cancer with beta carotene
  - 8% higher total mortality in beta carotene
  - More deaths with alpha-tocopherol from hemorrhagic stroke

N Engl J Med 1994; 330:1029-1035



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## High Dose Vitamin B and Lung Cancer

- 808 participants of 77,118 developed lung invasive lung cancer
  - Male smokers on high dose B<sub>6</sub> three times as likely
  - Male smokers on high dose B<sub>12</sub> four times as likely
- No increased risk in females



Theodore M. Brasky, Emily White, and Chi-Ling Chen  
Journal of Clinical Oncology 2017 35:30, 3440-3448



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## WATER MYTHS

 PENNSYLVANIA ACADEMY OF  
FAMILY PHYSICIANS FOUNDATION

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 PENNSYLVANIA ACADEMY OF  
FAMILY PHYSICIANS FOUNDATION

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## Eight Glasses Water per Day?

- No literature support
- Healthy people have thirst
- Caffeinated beverages and mild alcoholic beverages hydrate too
- Precise osmoregulatory system



Valtin H. Am J Physiol Regul Integr Comp Physiol. 2002 Nov;283(5)

 PENNSYLVANIA ACADEMY OF  
FAMILY PHYSICIANS FOUNDATION

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## Raw Water

- Unprocessed water from nature
- "Tap water? You're drinking toilet water with birth control drugs in them."
- Fluoride mind control drug
- \$60 per 2.5 gallons



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## Jenny McCarthy

"So basically, I don't know what I'm talking about. But maybe I do."



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## Combustible Cigarettes are Down



- Declining since 1996
  - 2.5% eighth graders
  - 5% tenth graders
  - 10.5% of twelfth graders
- Decline of 80% in last 20 years
- Lowest level in 42 years



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## Cigarettes v. E-Cigarettes

- Combustible Cigarettes
  - Age restriction
  - Regulated by FDA
  - No flavors (except menthol)
  - Advertising restrictions
- E-Cigarettes
  - No age restriction
  - No FDA regulations
  - Choice of flavors
  - No marketing restrictions



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## Vaping

- Contains glycerol, flavoring, propylene glycol (stage smoke)
- >7700 flavors, 242 new flavors monthly
- Has passed up every other nicotine product by 2016
- Clandestine use possible
- Can buy on internet



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## Dual Use

- Often used in those who have never smoked
- White, older, male
- 76% of vaping adolescents also use regular cigarettes
- Lower quit rates



Wills TA et al: Risk factors for exclusive e-cigarette use and dual e-cigarette use and tobacco use in adolescents. *Pediatrics*. 2015 Jan;135(1):43-51.



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## Vaping is Not Benign

- Toxins, carcinogens, heavy metals (less than cigarettes)
- Flavorings have cytotoxic effects
- Ultrafine vapor penetrates deeper in lung
- Bronchiolitis obliterans (popcorn lung) from diacetyl
- Impairs antibacterial defense
- Fire or explosive risk



Rigotti NA. E-cigarette use and subsequent tobacco use by adolescents: new evidence about a potential risk of e-cigarettes. JAMA. 2015 Aug 18;314(7):673-4.



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## HOMEOPATHY



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## Brief History of Homeopathy

- Samuel Hahnemann 1796  
Ingested cinchona bark, experienced several hours of fever, shivering, joint pain – resembling malaria  
Created “laws of similar”  
Most important disease cause was psora (Greek for itch)
- Derived from suppressed scabies
  - Cause of epilepsy, cancer, jaundice, deafness, cataracts



Homeopathy Looks at the Horrors of Allopathy



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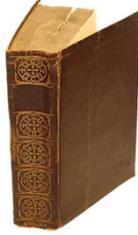
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## Basic Tenets

- “Like Cures Like”
  - Two diseases with similar symptoms – stronger will prevail
- Potentization
  - Diluent maintains “formative intelligence”, “coherence patterns”
  - C is 100 fold dilution
  - Succussion –vigorous shaking and striking on elastic surfaces, such as saddle or leather book




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## Dilutions



- Hahnemann advocates 60C dilution for most preparations
- 1/3 drop in all the water on earth would be 13C dilution
- Popular flu treatment with Oscillococtinum is 200C
  - $10^{80}$  atoms in entire universe
  - $10^{320}$  universes required for a single molecule

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## Table of Dilution

Dilution	Ratio	Notes
1C	1:100	
3C	$10^{-6}$	
12C	$10^{-24}$	Unlikely single molecule remains
30C	$10^{-60}$	Standard homeopathic dilution, to get single molecule, 2 billion doses per second to 6 billion people for 4 billion years
200C	$10^{-400}$	Dilution of Oscillococtinum

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Preparation of Oscillocoquinum

Decapitate duck

Remove 35 grams of heart and 15 grams of liver

Mix with pancreatic juice and glucose

Allow to ferment for 40 days

Dilute , dilute, dilute ...

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BOOSTING IMMUNITY?

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Do We Need Immune “Support”?

- Most people have highly effective immune systems
- Most clinical problems we face are too powerful immunity
  - Asthma, eczema, cytokine storm
- Immune system can be misdirected
  - Inflammatory arthritis, DM- type 1
- Scant evidence that immunity can be boosted

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## Cold Mediators

### Bradykinin- Local Symptoms

- Sore throat
- Nasal congestion
- Watery eyes
- Cough

### Cytokines- Systemic Symptoms

- Fever and Chills
- Headache
- Fatigue
- Malaise
- Anorexia
- Nausea
- Depression



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The entire Baby Boom population alive today had the #Measles as kids  
Bring back our #ChildhoodDiseases  
they keep you healthy & fight cancer.



Darla Shine  
Wife of White House Communications Chief Bill Shine



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## Darla Spreading “fake news”?

- Natural measles causes depletion of B and T cells
- Disables immune memory for 2-3 years
- One 49 year old female cured of blood cancer with genetically modified measles virus



Mira MJ et al. Science 08 May 2015;



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100PCS

COFFEE ENEMAS

## DETOXIFICATION?



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## Gwyneth Paltrow's Jade Vagina Eggs

- SOLD Out!
- "increase chi, orgasms, vaginal muscle tone, hormonal balance, and feminine energy in general."
- Porous, can house bacteria
- Goop agreed to pay \$145,000 in civil claims




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## Toxifying Foot Pads

- Removes toxins, restore "balance" within the body, and boost energy.
- Strengthen the immune system, reduce stress, improve circulation, improve sleep, enhance mental focus, relieve headaches and arthritis pain.
- Distilled water also darkens pads.




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## Himalayan Salt

- 98% salt, then magnesium, potassium, and calcium
- Help seasonal affective disorder as a lamp
- Absorbs water from and releases negative ions
- Rids air of dust



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## SINUS HEADACHE?



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## “Sinus” Headache

- Common patient self diagnosis
- “The United States is the only country in the world to have such a thing as sinus headache,”
- No evidence that chronic, ongoing sinus infections are linked to recurring headaches
- Influence of Madison Avenue
- Self-diagnosed sinus headaches are ultimately determined to be migraine in up to 98% of cases



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## Why the Misconception?

- Both sinus headache and migraine attacks can be triggered by weather changes
- Sinus headaches and migraine attacks can produce pain in the same areas
- Both can cause drainage and other sinus symptoms such as teary eyes.
- TV ads tout the “sinus headache”



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## Self-Reported or Physician-Diagnosed “Sinus” Headache Study

- 2991 patient with self or physician diagnosed “sinus” headache
- Most common symptom sinus pressure (84%), sinus pain (82%), and nasal congestion (63%)
- 80% were migraine and 8% migrainous

*Arch Intern Med.* 2004;164(16):1769-1772



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## Autonomic Symptoms in Migraine

- 45% of migraine attacks have at least one autonomic symptom
  - 45% both nasal congestion and ocular symptoms
  - 21% nasal symptoms only
  - 34% ocular symptoms only
- Parasympathetic activation of the sphenopalatine ganglion
  - Innervates tear ducts and sinuses



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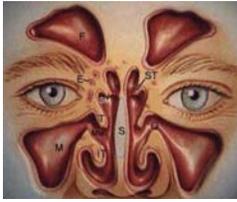
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## Anatomical Confusion



**Sinus Anatomy**



**Trigeminal Anatomy**



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## Acute Sinusitis v. Migraine

	<b>Sinusitis</b>	<b>Migraine</b>
<b>Family History</b>	No	Yes
<b>Headache Pattern</b>	Continuous	Intermittent
<b>Fever</b>	50%	0%
<b>Nasal Discharge</b>	Common (Colored)	Uncommon (Clear)
<b>Sinus Imaging</b>	Positive	Negative
<b>Disabling</b>	No	Yes



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**DIRECT TO  
CONSUMER  
ADVERTISING**



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### Why These Ads?

- Only USA and New Zealand
- Outlawed in most countries in 1940's
- Every one dollar spent on ads generates four dollars in sales
- Increases sales 9x over non-advertised meds
- 80 ads/hour
- Have ignored advise to fully informing physicians first
- Requested med is prescribed 44% of time



©2008b, 2011

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### Seldane Story – 1980's

- “pull the drug through the system”
- Only mention benefits of unnamed drug
- Sales went from \$34 million per year to \$800 million
- Pulled from market 1997
- Converted physician to business intermediary



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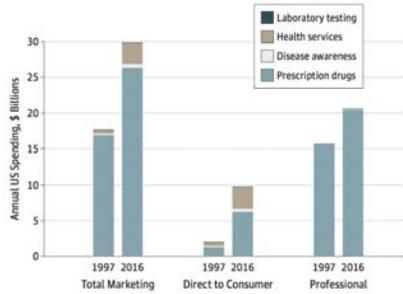
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## Medical Marketing 1997 v. 2016



Schwartz LM et al. JAMA 2019



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## Hallucinations in Parkinson's Disease



Poewe W. Practical Neurology 2008;8:230-241.

- 8% to 40%
- Associated with older, duration, cognitive impairment, sleep disturbance
- Occurs with eyes open
- People, animals, scenery, buildings
- Movement
- Brief in duration
- Often medication associated – amantadine, dopamine agonists
- May improve with rivastigmine



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## Pimavanserin (Nuplazid)

- Failed first two trials
- 199 patients, 6 week trial, 37% reduction in symptoms. v. 14% placebo
  - Changed criteria
- 52 centers
- Over \$37,000 per year



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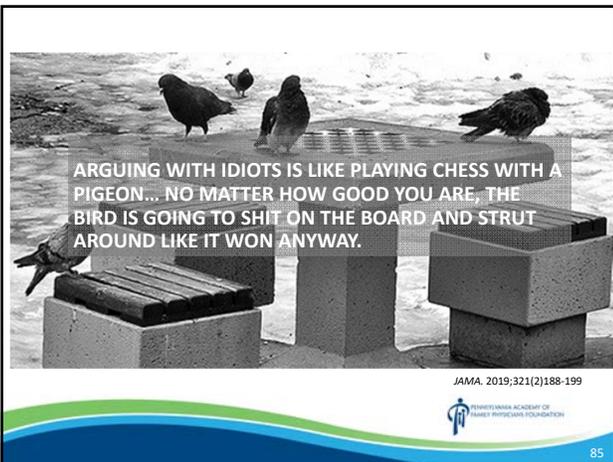
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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Narrative Medicine***  
Andre Lijoi, MD

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**

# Narrative Medicine: Building Resilience and Promoting Engagement Through Story

Andre F. Lijoi, MD, DABFM, CAQ-Ger  
Associate Program Director  
WellSpan York Hospital FMR  
PAFP Spring CME  
March 7-10, 2019



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## Objectives

- Define Narrative Medicine
- Know the Three movements of Narrative Medicine
- Participate in a close reading exercise.
  - Our “Text” today is a painting.
- Discuss, Share & write about:
  - One’s Perspective of this painting &
  - Make connections to professional and personal experiences
  - How this impacts what we bring to our work &
  - What we take away from it.



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## Narrative Medicine: Defined

- “Clinical practice fortified by the knowledge of what to do with stories.” \*
- “Capacity to skillfully receive the accounts persons give of themselves.” \*
- Recognize, absorb, interpret, be moved to action...
- Three movements:
  - Attention
  - Representation
  - Affiliation

\* Rita Charon, MD, Ph D - Lit



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*"To write prescriptions is easy, but to come to an understanding with people is hard."*

*Franz Kafka, A Country Doctor*

Ernest Ceriani, MD, Kremmling CO. Eugene Smith Photo, Life Magazine  
<https://timeline.com/life-american-country-doctor-9434632e1134>



79MAMA

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**CRAIG IRVINE, PhD**- Founding Director of the Masters Program in N.M.

"Listening . . . is a fundamental moral act."



**NELLIE HERMANN, MFA**- Artistic Director of the Program in Narrative Medicine

"Writing is a way of **accessing aspects of our mind and our experiences** that we had no access to previously."



**MAURA SPIEGEL, PhD**- Founding Core Faculty Member, Program in N. M.

"Intellectually and emotionally invested in a film narrative, **we get caught up in empathizing** and identifying with the characters and the action."

"Where am I in this patient's story?"



79MAMA

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### *Imagination...*

"The study of the arts and humanities are the most direct means to enable doctors to see the suffering that is around them..." (2018 Jefferson Lecture)

"It is the imagining, the summoning-up of another narrative world that allows us to . . . I am not going to say understand, but to come near, near to the plight of the person we are trying to help."

Rita Charon, MD, Ph D - Lit



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## Imagination

"Convention suggests that scientists are in charge of fact and artists are in charge of the imagination. Yet the membrane between facts and imagination is very permeable and each needs the other." (2018 Hoover Lecture, York Hospital)



Catherine Rogers, MFA, MS.  
Playwright, Performer



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## Logistics

- Look at Sir Luke Fildes' Painting
  - The Doctor
- Discuss:
  - Any detail that tells about the story.
  - Impact of story on us and others.
- Write to a prompt.
- Share what was written.



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## The Doctor by Sir Luke Fildes



The Doctor 1891



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## Watching Closely



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## Narrative Medicine

- Close Reading.
  - Listening carefully and watching closely.
- Receive the accounts people give of themselves.
- Share perspectives.
- Reflect on your experiences and perspectives.
- Write about them.
- A refreshment and an unction.



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Trauma Informed Care (ACES)***

Robert Reed, Esq. and Dave O’Gurek, MD, FAAFP

**Disclosures:**

The speakers have no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speakers have attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**

# Trauma Informed Care: Building Optimal Healing Environments



David T. O'Gurek, MD, FAAFP  
Associate Professor  
Department of Family & Community Medicine  
Lewis Katz School of Medicine at Temple University  
Robert Reed, JD  
Executive Deputy Attorney General  
Office of Public Engagement  
Office of Attorney General, Commonwealth of Pennsylvania



OSFLEX

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## Disclosures

- Presenters currently have no relationships of any kind with any company whose products or services in any way relate to the practice of medicine, medical education or research.



OSFLEX

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**R.H.**

CC: Neck and Back Pain



OSFLEX

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R.H.



- Establishing care
- Reports neck and back pain for “years”
- MVA in past as restrained driver, rear-ended
- Neck pain – “sharp” radiating down both arms and was told in the past he has “bulging discs”
- LBP – “sharp” at times but mostly constant “dull ache” with radiation into the buttocks and down both legs to the toes

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R.H.

- PMH
  - Migraines
- Meds
  - Sumatriptan
  - Oxycodone/acetaminophen
- Allergies
  - NKA
- FamHx
  - Mother “healthy
  - No siblings
  - Grandparents deceased, “natural causes - I don’t know”

- No associated
  - Fevers, chills, night sweats, weight loss, abdominal pain, numbness, tingling, weakness, or incontinence
- Previous therapies:
  - OTC NSAIDs and APAP
  - Ibuprofen 800 mg q 8 hours x 6 mo
  - Meloxicam 15 mg daily x 3 mo
  - APAP 1000 mg TID x 1 mo
  - Lidocaine ointment x 2 weeks
  - Gabapentin x 6 mo
  - Duloxetine x 10 mo
  - Physical therapy
  - ESI x 2 without improvement
  - Chiropractor
- Recent PCP was giving oxycodone/acetaminophen

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R.H.



- Grew up in Allison Hill neighborhood in Harrisburg
- Raised by mother and grandmother, mother was a victim of domestic violence from his father who left at age 7
- Dropped out of high school in 10<sup>th</sup> grade
- Currently living with girlfriend’s family in Allison Hill
- Tobacco with 7 pack year hx
- Denies alcohol use
- Smokes marijuana 4-5 times per week
- unemployed

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# Community Health

Harrisburg's Allison Hill

- Life Expectancy: 69 yrs

Swatara Township

- Life Expectancy: 81 yrs

CNI Score by Zip Code

4.00 to 5.00	Significant socioeconomic barriers
3.00 to 4.00	
2.00 to 3.00	
1.00 to 2.00	Lowest level of socioeconomic barriers

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# WELCOME TO MY WORLD

- Crime
- Violence
- Addiction
- Poverty
- Hopelessness
- Trauma

Look Like Anything in Your World?

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# 17,250

[>47 a Day]  
in THE UNITED STATES OF AMERICA

# MURDERS

# 2016

Bureau of Justice Statistics  
2016- 5.7 Million violent victimizations - 21/ 1,000 Americans  
15.9 property victimizations - 119.4 /1,000 Americans

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**44,965**  
**SUICIDES**  
[123 a Day]  
in THE UNITED STATES OF AMERICA  
**2016**

For every suicide there are 25 attempts

National Institute of Mental Health



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**OPIOIDS, HEROIN & ADDICTION**

**2017**

**5,456 People**  
**DIED IN PENNSYLVANIA**  
**FROM DRUG OVERDOSES**



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- ❖ Of 76 million children in the US, 46 million are exposed to violence, crime, abuse, and psychological trauma annually.
- ❖ That represents two out of every three children.



From Defending Childhood: The Attorney General's National Task Force on Children Exposed to Violence, December 2012



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# the ACE

adverse childhood experience study



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## ACE CATEGORIES

WHEN YOU WERE 18 OR YOUNGER



**MALTREATMENT**

- PHYSICAL ABUSE
- SEXUAL ABUSE
- EMOTIONAL ABUSE
- PHYSICAL NEGLECT
- EMOTIONAL NEGLECT



**HOUSEHOLD**

- MENTAL ILLNESS
- SUBSTANCE ABUSE
- DOMESTIC VIOLENCE
- LOSS OF PARENT/  
PARENTAL SEPARATION/  
DIVORCE
- INCARCERATION

1 POINT /CATEGORY – ADD TO GET TOTAL ACE SCORE



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## ACES SCORE OF 4 OR MORE

- Twice as likely to smoke
- Seven times more like to be alcoholics
- Six times more likely to have had sex before the age of 15
- Twice as likely to have been diagnosed with cancer
- Twice as likely to have heart disease
- Four times as likely to suffer from emphysema or chronic bronchitis
- Twelve times as likely to have attempted suicide
- Ten times more likely to have injected street drugs



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## Trauma and Substance Abuse

- Around 65% of all substance abuse treatment clients report experiencing childhood abuse
- Around 75% of women in substance abuse treatment report a history of trauma
- Around 92% of homeless mothers have severe trauma histories



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## Trauma Prevalence In Children

- 71% of children are exposed to violence each year
- 3 million children are maltreated or neglected each year
- 3.5-10 million children witness violence against their mother each year
- 1 in 4 girls & 1 in 6 boys are sexually abused before adulthood
- In a study of juvenile justice settings, 94% of children had experienced trauma



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## "Healthy" vs "Abused" Brain

3-Year-Old Children



Normal



Extreme Neglect

© 1997 Bruce D. Perry, M.D., Ph.D., ChildTrauma Academy



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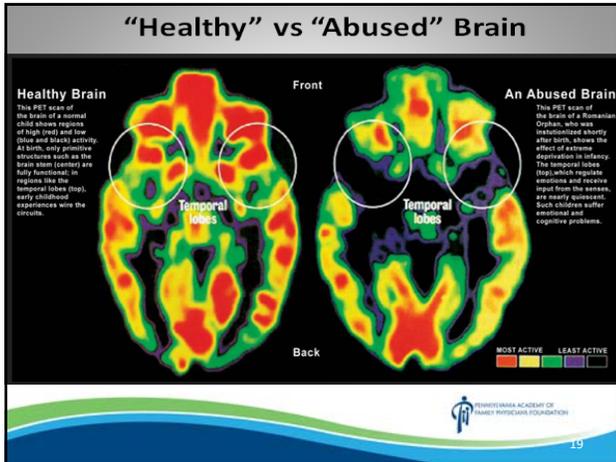
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## VARIOUS TRAUMA

Police, Fire, First Responders	Health Care/ Hospital staff
Probation & Parole Officers	Advocates: Victim/ Child/ Elderly
Correctional Officers	Rape/ Sex Abuse/ Domestic Violence
Prosecutors, Defense Counsel	Veterans
Judges, Juries, Witnesses	Families of Above

PHILADELPHIA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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## KEEPING KIDS IN SCHOOL AND OUT OF COURT:

### PHILADELPHIA'S POLICE SCHOOL DIVERSION PROGRAM

PHILADELPHIA POLICE SCHOOL DIVERSION PROGRAM

PHILADELPHIA ACADEMY OF FAMILY PHYSICIANS FOUNDATION

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# TRAUMA INFORMED CARE: CHANGING THE PARADIGM



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## Demand for changing the paradigm

AMONG PATIENTS IN SPECIALTY TREATMENT FOR CHRONIC PAIN, 1/3-2/3 HAVE BEEN DIAGNOSED WITH PTSD OR REPORT SIGNIFICANT LEVELS OF TRAUMA-RELATED SYMPTOMATOLOGY

Asmundson, et al 2009

PEOPLE WITH CHRONIC PAIN AND PTSD ARE MORE DISTRESSED AND IMPAIRED THAN THOSE EXPERIENCING ONLY ONE OF THESE CONDITIONS

Geisser, et al 1996

PEOPLE EXPERIENCING BOTH DO NOT RESPOND AS WELL TO STANDARD TREATMENT

Otis, et al 2006



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## SO, HOW DOES THIS TRANSLATE TO HEALTH CARE?

Building an Optimal Healing Environment



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### Primary Lens Change

- ❖ Instead of asking, "What's wrong with you?"
- ❖ Trauma-informed people ask, "What happened to you?"

Dr. Sandra Bloom, Psychiatrist  
Associate Professor Drexel University

Joseph Foderaro  
Psychoeducational Training Specialist  
Drexel University College of Medicine



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Traditional Paradigm	Trauma-Informed Paradigm
Patients are sick, ill, or bad	Patients have been hurt and are suffering
Behaviors are misinformed and misguided	Behaviors are survival skills developed to live through the trauma but are maladaptive in society
Patients can change and stop behaviors if they only had enough motivation to do so	Patients need support, trust, and safety to decrease maladaptive behaviors
Manage or eliminate behaviors negatively affecting health	Provide opportunities for individuals to heal from their trauma
Staff should come to work every day at their best and perform leadership expectations	Leaders need to create strong organizational culture to combat trauma and stress associated with work and individuals who have experienced trauma

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Healing Centered Engagement

Or

Trauma-Informed Care

- WHAT HURTS**
  - Interactions that are humiliating, harsh, impersonal, disrespectful, critical, demanding, judgmental

*Well, maybe if you ate less and exercised more, you would lower your risk of diabetes*
- WHAT HELPS**
  - Interactions that express kindness, patience, reassurance, calm and acceptance and listening
  - Frequent use of words like PLEASE and THANK YOU and I'M SORRY



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Healing Centered Engagement

Or

Trauma-Informed Care

- WHAT HURTS**
  - Congested areas that are noisy
  - Poor signage
  - Uncomfortable furniture
  - Anger and frustration
  - Rules that always seem to be broken
  - Policies and Procedures that focus on organizational needs rather than on patient needs
- WHAT HELPS**
  - Treatment and waiting rooms that are comfortable, calming, and offer privacy
  - No wrong door philosophy: we are all here to help
  - Sensible and fair rules that are clearly explained
  - Transparency in documentation and service planning



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Where and how do we start?



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## Step 1



<https://www.chcs.org/resource/5-steps-toward-trauma-informed-care/>

- Realize that a lot about who we are, and what we do, are because of things that happened to us



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## Step 2



<https://www.chcs.org/resource/5-steps-toward-trauma-informed-care/>

- Embrace trauma-informed values in yourself
  - Acknowledge some of your previous judgment was antithetical to this
- Challenge your approach
- Question
- Be open



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## Step 3



<https://www.chcs.org/resource/5-steps-toward-trauma-informed-care/>

- Ensure information in the waiting room or in the exam rooms provides details on the impact of trauma on health
  - <https://www.integration.samhsa.gov/clinical-practice/trauma-informed#Patients/Consumers>



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## Step 4



<https://www.chcs.org/resource/5-steps-toward-trauma-informed-care/>

- Set up a training for your team and your staff on trauma-informed principles
- Link to evidence-based screenings for IPV and depression
  - Consider ACE screening
  - Consider SDoH screening



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## Step 5



<https://www.chcs.org/resource/5-steps-toward-trauma-informed-care/>

- Assemble a team to get further educated and collaborate to transform your care setting
  - Practice Champion



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## Key Take Aways

- Cannot simply dive in
  - Need self-assessment first (implicit bias training)
  - Building a culture important
- Marathon vs Splint
- Critical to involve and learn from other industries



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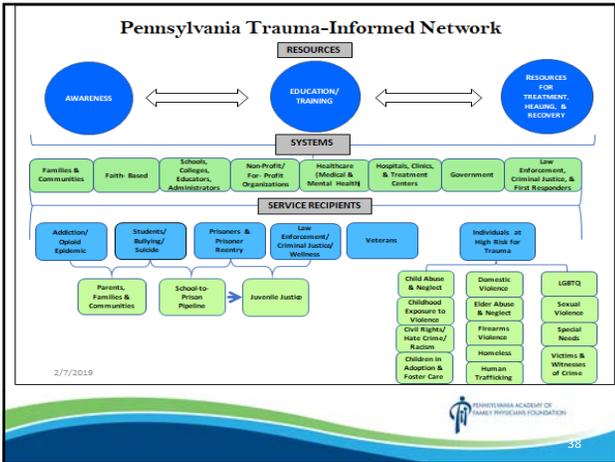
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I am a part of all that I have met;  
 Yet all experience is an arch where thro'  
 Gleams that untravell'd world whose margin fades  
 For ever and forever when I move.

How dull it is to pause, to make an end,  
 To rust unburnish'd, not to shine in use!  
 As tho' to breathe were life! Life piled on life  
 Were all too little, and of one to me  
 Little remains: but every hour is saved  
 From that eternal silence, something more,  
 A bringer of new things; and vile it were  
 For some three suns to store and hoard myself,  
 And this gray spirit yearning in desire  
 To follow knowledge like a sinking star,  
 Beyond the utmost bound of human thought.

- Ulysses by Tennyson

**RH**




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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***CVD and Renal Disease in T2DM – Individualizing  
Therapeutic Options to Reduce Comorbid Risk***  
Ellen Miller, MD

**Disclosures:**

This session is sponsored in part by Boston University School of Medicine.

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**\*\*SESSION HANDOUTS ARE NOT AVAILABLE\*\***

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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Splinting Workshop***

Lauren Inners, DO and Joseph Medellin, DO

**Disclosures:**

The speakers have no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speakers have attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speakers indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

**[Click here to return to the table of contents.](#)**

# Splinting Workshop

Lauren Inners, DO  
Primary Care Sports Medicine  
Wellspring Orthopedics - Hanover

Joseph Medelin, MD  
Wellspring York Hospital Sports Medicine Fellow



SSHAED

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# Disclosures

- Nothing to Disclose



SSHAED

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# Learning Objectives

- Fundamentals of splinting through a “see one, do one” hands-on approach.
- Learn splinting precautions
- Demonstrate application techniques that all participants can immediately implement into their practice to increase comfort level of provider
- Facilitate an interactive, hands-on, environment for the participants
- Practice splinting applications



SSHAED

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## Agenda

- Fundamentals of splinting
- Indications for splinting
- Preparation guidelines
- Tips for better splinting
- Overview of splint types
- Patient monitoring and discharge instructions
- Practice and hands-on help



SSHAED

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## Splinting Fundamentals

- ANATOMY!
- Acutely:
  - Immobilization
  - Protection
  - Aids in healing
  - Reduces pain
- Chronically:
  - Assists in healing
  - Long-term pain control
  - Progression of physical function
  - Slows progression of pathologic process



SSHAED

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## Splinting Advantages

- Allows for acute swelling using a non-circumferential model
- Decreases risk of pressure-related complications
- Faster and easier application and removal
- Commercial splints available and appropriate for select injuries
- May be static or dynamic



SSHAED

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## Splinting Disadvantages

- Lack of compliance
- Increased range of motion at injury site
- Not useful for definitive care of unstable or potentially unstable fractures



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## Conditions That Benefit from Immobilization

- Fractures
- Sprains
- Severe soft tissue injuries
- Reduced joint dislocations
- Inflammatory conditions
- Deep lacerations across joints
- Tendon lacerations



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## Indications for Splinting

- Temporary immobilization of fracture, soft tissue injury
- Protection of injured extremity when occult injury suspected but X-rays negative
- Immobilization to control pain from
  - Arthritis
  - Contusions
  - Soft tissue injury (ie. Laceration)



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## Contraindications to Splinting

- Unstable or open fractures
- Concern for compartment syndrome
- High risk for skin infection



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## Splinting vs Casting

- Splinting more common in the primary care/urgent care setting
- Acuity and severity of the injury
- Stability
- Degree of swelling or potential for swelling



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## Precautions to Splinting

- Document a pre-splint and post-splint exam!
- Check circulation before and after splinting (FACTS)
  - Function
  - Arterial Pulse
  - Capillary Refill
  - Temperature (skin)
  - Sensation
- Try to avoid pressure spots
- Avoid sharp edges to the splint
- Inform patient the splint may get warm during application



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## Complications of Splinting

- Compartment Syndrome
- Skin breakdown
- Dermatitis
- Joint stiffness
- Muscle atrophy



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## Splinting Materials

- Plaster vs fiberglass
- Water
- Gloves
- Cotton padding
- Stockinette
- Elastic bandages



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## Splint Application Tips

- Use COOL water for casting and splinting
  - Lukewarm water may be used for plaster
- When molding, use palms of hands – NO fingertips
- Use additional padding over bony prominences
- Use padding between fingers that will be enclosed in splint
  - Example – Between 4<sup>th</sup> and 5<sup>th</sup> fingers in Ulnar Gutter Splint
- Unless necessary, always place patient in functional position
  - Example – Intrinsic Plus position for Ulnar Gutter Splint



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## Steps for Splinting

- Measure area to be splinted (use uninjured side)
- Apply stockinette (10 cm longer on each end)
- If rolling your own splint:
  - Measure out webriil and roll 5 times
  - Measure out cast material, and roll at least 6-10 times – more if necessary (especially for lower extremity splinting)
- If using Ortho Glass, or pre-made splinting material:
  - Measure material needed for splint
  - Ensure padding on each end of the splint covers the splint material
- Secure with Kling or kerlex
- Apply padding (overlap by ½ with 2-3 layers)
- Apply mold
- Cover with elastic bandage (Ace wrap)
- Ensure there are no sharp edges or pressure spots
- Check circulation




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## Common Splint Types

AREA OF INJURY	TYPE OF SPLINT	TYPE OF CAST
Hand/finger	Ulnar gutter, radial gutter, thumb spica, finger	Ulnar gutter, radial gutter, thumb spica
Forearm/wrist	Volar/dorsal forearm, single sugar-long	Short arm, long arm
Elbow/forearm	Long arm posterior, double sugar-long	Long arm
Knee	Posterior knee, off-the-shelf immobilizer	Long leg
Tibia/fibula	Posterior ankle (mid-shaft and distal fractures), bulky Jones	Long leg (proximal fracture), short leg (mid-shaft and distal)
Ankle	Posterior ankle ("post-mold"), stirrup, bulky Jones, high-top walking boot	Short leg
Foot	Posterior ankle with or without toe box, hard-soled shoe, high-top walking boot	Short leg, short leg with toe box for phalanx fracture




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## Workshop Splint Type Focus

- Volar Splint
- Thumb Spica Splint
- 4<sup>th</sup> and 5<sup>th</sup> Metacarpal Splint- Ulnar Gutter
- Sugar Tong (single or double)




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## Case 1

- 9 yo girl fell roller skating and landed on an outstretched arm
- Localizes the pain to the left wrist with minimal swelling and bruising
- RHD



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## Volar Splint

- Indications
  - Wrist sprains
  - Carpal tunnel syndrome
  - Lacerations
  - Acute carpal bone fracture (excluding scaphoid or trapezium)
  - Childhood Buckle fracture of distal radius
- Follow-up
  - One week
  - If displaced or unstable fracture or lunate fracture, refer to ortho/hand surgery for the follow-up



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## Volar Splint

- Position of Function:
  - Wrist at neutral, or 20 degrees extension
- Extends from palmar crease to antecubital space
  - Extend past palmar crease if immobilizing a metacarpal fracture
- Keep thumb and fingers free for movement



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## Case 2

- 79 yo M closed a step ladder on his LEFT hand
- Presents with pain, swelling, and bruising at the base of his thumb
- RHD



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## Thumb Spica

- Indications:
  - Injuries to scaphoid/trapezium
  - Nondisplaced, nonangulated, extra-articular first metacarpal fractures
  - Stable thumb fractures with or without closed reduction
- Follow-up in 1 to 2 weeks
- Refer if:
  - angulated, displaced, intra-articular, incompletely reduced or unstable fracture
  - displaced fracture of scaphoid



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## Thumb Spica

- Position of Function
  - Holding a cup
- Extend from tip of thumb to antecubital space
- Spiral the splint over the dorsal aspect of the arm
- Allow fingers to move freely



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## Case 3

- 56 yo F slipped down a hill and caught herself with her hand behind her
- Presents with pain, swelling, and bruising about the 5<sup>th</sup> metacarpal
- RHD
- Owns an embroidery business



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## Ulnar Gutter

- Indications:
  - 4<sup>th</sup> and 5<sup>th</sup> proximal/middle phalangeal shaft fractures
  - Non-displaced, stable fractures of head, neck, and shaft of 4<sup>th</sup> and 5<sup>th</sup> metacarpals with mild angulation and no rotational deformities
  - Boxer's fractures (distal 5<sup>th</sup> metacarpal fractures)
    - Most common injury with uses ulnar gutter splint/cast
- Follow-up in 1-2 weeks
- Refer for:
  - Angulated, displaced, rotated, oblique or intra-articular fracture or failed closed reduction



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## Ulnar Gutter (Boxer's Splint)

- Intrinsic Plus Position
  - Fingers flexed to 90 degrees, wrist extended to 20 degrees
- Extend from close to tip of 4<sup>th</sup> finger to 2" distal antecubital space



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## Case 4

- 67 yo male slipped and fell on the ice and landed on an outstretched hand
- Presents with makeshift splint with a magazine and an ACE wrap
- Localizes the pain to the right wrist with notable swelling, significant pain with movement of the wrist in any direction
- RHD
- Works as a tech ed teacher



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## Sugar Tong Splint

- Indications:
  - Reduced distal radius fracture
  - Both bone (radius and ulna) forearm fracture
  - Too swollen to place into cast
  - Colles' fracture (dorsal angulation) and/or Smith's fracture (volar angulation)



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## Sugar Tong Splint

- Position of Function
  - Position of comfort
  - Slight flexion for Colles' fracture
  - Slight extension for Smith's fracture
- Extend from distal metacarpal heads to distal of the palmar crease
- Splint should encompass the elbow
- Allow distal fingers to move freely



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## Patient Instructions

- Patient should protect splint from getting wet
- Do not remove splint unless directed by physician
- If toes/fingers become blue, cold, numb or painful then patient should notify doctor immediately
- Exercise fingers/toes regularly each day unless otherwise directed



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Concussion: Office Evaluations Made Easy***  
Kevin Valvano, DO and Dave Cole, MD

**Disclosures:**

The speakers have no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speakers have attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speakers indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

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## Concussion: Office Evaluations Made Easy

PAFP and WellSpan Health CME Conference  
March 9, 2019

Kevin Valvano, DO  
WellSpan Sports Medicine and Urgent Orthopedics  
WellSpan Orthopedic Residency & Sports Medicine Fellowship Clinical Faculty

David Cole, MD  
WellSpan Primary Care Sports Medicine Fellow



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## Disclosures

- No financial disclosures



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## Objectives

- Discuss the definition of a concussion.
- Review the signs and symptoms of a concussion.
- Consider prolonged recovery risk factors in concussions.
- Review the appropriate diagnosis of a concussion.
- Discuss sideline management of a concussion.
- Consider practical diagnostic tools for concussion, such as the SCAT5 and VOMS.
- Discuss current treatment and recovery recommendations, including return to learn and return to play guidelines.




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## What is a Concussion?

- Concussion in Sport Group (CISG) defines a concussion as “a traumatic brain injury induced by biomechanical forces”. Features include:
  1. Caused by a **direct blow to the head, face, neck or body**.
    - Variable forces to the brain (linear/angular accelerations & impulse waves)
  2. Results in the rapid onset of **short lived impairment** of neurologic function that resolves spontaneously
  3. The acute clinical symptoms largely reflect a **functional disturbance rather than a structural injury**.
    - Typically no abnormality on standard structural neuroimaging studies
  4. A range of clinical signs and symptoms that **may or may not involve loss of consciousness**.
    - LOC seen in < 14% of cases
    - Resolution of the clinical and cognitive features typically follows a sequential course, but some cases may be prolonged



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## Diagnosing Concussion

- Each concussion is unique
  - constellation of heterogenous symptoms
- No single “gold standard” test
  - **Symptoms may evolve** over hours to days
- Concussion is a clinical diagnosis:
  - based on symptoms and high index of suspicion



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TABLE 2 Signs and Symptoms of a Concussion

Physical	Cognitive	Emotional	Sleep
Headache	Feeling mentally “foggy”	Irritability	Drowsiness
Nausea	Feeling slowed down	Sadness	Sleeping more than usual
Vomiting	Difficulty concentrating	More emotional	Sleeping less than usual
Balance problems	Difficulty remembering	Nervousness	Difficulty falling asleep
Visual problems	Forgetful of recent information		
Fatigue	Confused about recent events		
Sensitivity to light	Answers questions slowly		
Sensitivity to noise	Repeats questions		
Dazed			
Stunned			

Hintz, M. E., & Walter, K. D. (2010). Sport-Related Concussion in Children and Adolescents. *Pediatrics*, 126(3), 507-515.

### Prolonged recovery risk factors:

- History of concussion
- Female
- Younger Age
- ADD/ADHD
- Psychiatric diagnoses
- Prolonged loss of consciousness(LOC)
- History of Migraines



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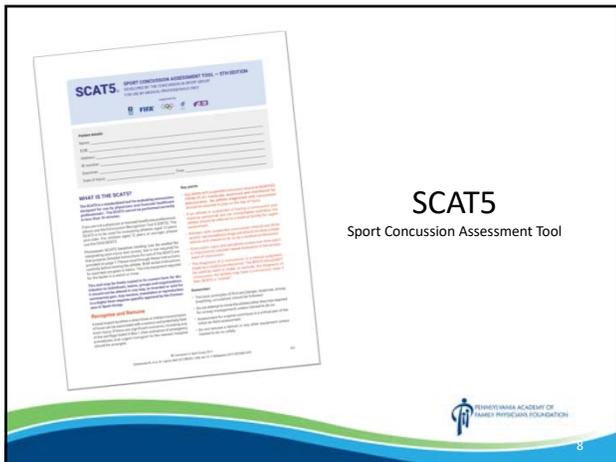
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## SCAT 5

- Symptom Evaluation
  - 22 symptoms; 1-6 severity scale; max 132
- Cognitive Screen
  - Orientation
  - Immediate memory (word lists)
  - Concentration (Digits, Months)
- Neurologic Screen
  - Modified BESS
  - Neurologic examination
- Delayed Recall

Pennsylvania Academy of Family Physicians Foundation

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**VOMS**  
Vestibular/Ocular Motor Screening

PERINATAL ACADEMY OF  
FAMILY PHYSICIANS FOUNDATION

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## Vestibular System

- **Network of small sensory organs** of the inner ear and connections to the brain stem, cerebellum, cerebral cortex, ocular system & postural muscles
  - Provides information regarding head movements & position to **maintain visual & balance control**
- Organized into 2 distinct functional units:
  - **Vestibulo-ocular system: visual stability** during head movements
    - Symptoms: dizziness and visual instability
  - **Vestibulospinal system: postural control**
    - Symptoms: balance issues
- Networks differ in neuronal circuitry
  - May have vestibulo-ocular impairment without vestibulospinal impairment

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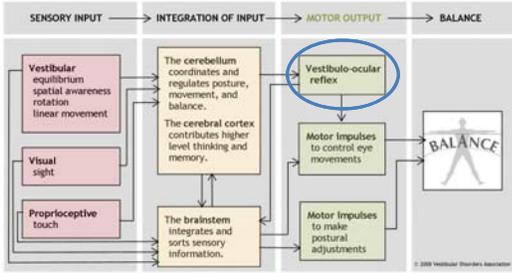
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Courtesy of the Vestibular Disorders Association:  
[https://vestibular.org/sites/default/files/page\\_files/Documents/Human%20Balance%20System\\_36.pdf](https://vestibular.org/sites/default/files/page_files/Documents/Human%20Balance%20System_36.pdf)

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FAMILY PHYSICIANS FOUNDATION

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## Baseline Symptoms

- Document HA, Dizziness, Nausea and "Fogginess" on scale of 0-10 prior to screen

### Vestibular/Ocular-Motor Screening (VOMS) for Concussion

Vestibular/Ocular Motor Test:	Not Tested	Headache 0-10	Dizziness 0-10	Nausea 0-10	Fogginess 0-10	Comments
<b>BASILINE SYMPTOMS:</b>	N/A					
Smooth Pursuits						
Saccades – Horizontal						
Saccades – Vertical						
Convergence (Near Point)						(Near Point in cm): Measure 1: _____ Measure 2: _____ Measure 3: _____
VOR – Horizontal						
VOR – Vertical						
Visual Motion Sensitivity Test						

<https://www.physiotherapyberta.ca/files/vomstool.pdf>



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## Smooth Pursuits

(Horizontal & Vertical)

- Tests ability to follow a slowly moving target
  - Finger distance 3 feet from the patient
  - Patient maintains focus on finger
  - Finger moves 1.5 feet from midline in each direction
    - Complete 2 repetitions
      - Finger moves at a rate of ~2 seconds from side to side
- Abnormal:  $\geq 2$  change in symptoms score



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## Saccades

(Horizontal & Vertical)

- Tests ability to move quickly between targets
  - Hold fingertips 3 feet from the patient & 1.5 feet to the right and left of midline
  - Eyes move as quickly as possible from point to point
    - Complete 10 repetitions
- Abnormal:  $\geq 2$  change in symptoms score



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## Vestibular-Ocular Reflex

(Horizontal and Vertical)

- Tests ability to stabilize vision as head moves
  - Patients arm & thumb extended at midline
  - Patient rotates head 20° while focusing on target
    - Metronome speed = 180 bpm (1 beat/direction)
    - 10 repetitions
- Abnormal:  $\geq 2$  change in symptoms score



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## Visual Motion Sensitivity

- Tests ability to fixate on a moving object
  - AKA tests ability to inhibit vestibular-induced eye movements
  - Patient stands with feet shoulder width apart
    - Examiner stands near patient
  - Patient extends arm & focuses on thumb
  - Rotate head, eyes & trunk 80° left and right
    - Metronome speed = 50 bpm (1 beat/direction)
    - 5 repetitions
- Abnormal:  $\geq 2$  change in symptoms score



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## Near Point Convergence (NPC)

- Tests ability to see a close object without double vision
  - Patient focuses on an object at arm's length
  - Examiner brings object towards the patient's nose
  - Holds object when diplopia is reported or outward deviation of one eye is noticed
    - Blurring of the image is ignored
  - Measure distance in cm
    - Repeat 3 times and average
- Abnormal: NPC  $\geq 5$  cm



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## Free Resources

- SCAT-5 PDF
  - <https://bjsm.bmj.com/content/bisports/early/2017/04/26/bisports-2017-097506SCAT5.full.pdf>
- VOMS PDF
  - <https://www.bamc.org/media/1393/voms-exam.pdf>
  - <https://www.physiotherapyalberta.ca/files/vomstool.pdf>
- Consensus statement on concussion in sport
  - the 5<sup>th</sup> international conference on concussion in sport held in Berlin, October 2016
  - <https://bjsm.bmj.com/content/51/11/838>
- Virginia Tech Helmet Ratings
  - <https://www.helmet.beam.vt.edu/>



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Non-Ultrasound Joint Injection Workshop***  
Jeffrey Zlotnick, MD

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speaker has attested that their presentation will be free of all commercial bias toward a specific company and its products.

The speaker indicated that the content of the presentation will not include discussion of unapproved or investigational uses of products or devices.

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## Joint Injection & Aspiration

The "In's" and "Out's"  
Without Ultrasound




**Jeffrey A. Zlotnick MD (CAQ) FAAFP**  
 Residency Director Sports Medicine Education  
 PSH-St Joseph's Family Medicine Residency  
 Director Sports Medicine Clinic  
 PSH- St Joseph's Medical Center  
 Reading PA

Asst. Clinical Professor of Family & Primary Care Sports Medicine  
 Rutgers – Robert Wood Johnson Medical School  
 Rutgers – New Jersey Medical School  
 Philadelphia College of Osteopathic Medicine  
 Penn State College of Medicine - Hershey

Senior Clinical Director MedFest (Health Athletes Initiative)  
 Special Olympics NJ  
 Consultant Special Olympics International-US



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## Joint Injections & Aspirations



Therapeutic Indications:

- Remove exudative fluid from a septic joint
- Relieve pain in a grossly swollen joint (traumatic effusion)
- Inject medications (anesthetics, synthetic glycosaminoglycans, corticosteroids) into an inflamed or painful joint, around a tendon, or trigger point



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## Equipment Needed

- Gloves
- Povidine wipes and alcohol wipes
- *Optional:* Sterile drapes & gloves
- 21 - 25 g 1.5" needles for injections
- 18 - 20 g 1.5" needles for aspirations
- 1 - 20 cc syringe for injections
- 3 - 50 cc syringe for aspirations
- *Optional:* Ethyl chloride spray for skin anesthesia
- *Optional:* 30 g needle 0.5 cc syringe for skin anesthesia





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## Contraindications



- Cellulitis or broken skin
- Poorly controlled anti-coagulant therapy or a severe primary coagulopathy
- Septic effusion (OK to aspirate, NOT inject)
- Suspected bacteremia (unless the joint is the source of the bacteremia, injection may introduce infection into joint)
- More than 3-4 previous corticosteroid injections into a weight bearing joint within a 12 month period
- Lack of response to 2 to 3 previous injections
- Unstable joints (for steroids)
- Joint prosthesis (high risk of infection)
  - Some ortho's will inject these



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## Conditions Improved with Joint Injection

- Rheumatoid arthritis
- Seronegative spondyloarthropathies
  - Ankylosing spondylitis
  - Arthritis associated w/ inflammatory bowel disease
  - Psoriatic arthritis
  - Reiter's Syndrome
- Crystal induced arthritis
  - Gout
  - Pseudogout
- Osteoarthritis



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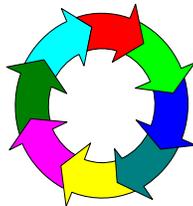
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## Conditions Improved with Joint Injection 2

- Fibrositis (localized or systemic)
- Bursitis
  - Subacromial
  - Trochanteric
  - Anserine
  - Prepatellar
- Adhesive capsulitis
- Fibromyalgia (trigger points)
- Costochondritis



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### Conditions Improved with Joint Injection 3

- Neuritis
  - Carpal tunnel
  - Tarsal tunnel
- Tenosynovitis
  - De Quervains
  - Trigger finger
  - Biceps (long head)
  - Tennis elbow
    - lateral epicondylitis
  - Golfer's elbow
    - medial epicondylitis
  - Plantar fasciitis



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### Relative Potency of Corticosteroids

Short Acting Preparations	Relative anti-inflammatory potency	Approx. equiv. dose (mg)
Cortisone	0.8	25
Hydrocortisone	1	20
Intermediate Acting		
Prednisone	3.5	5
Prednisolone	4	5
Triamcinolone	5	4
Methylprednisolone (Depo)	5	4
Long-acting		
Dexamethasone	25	0.6
Betamethasone	25	0.6

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### Synthetic Glycosaminoglycans

- Hylan GF 20(Synvisc), Hyaluronan (Orthovisc), & Na Hyaluronate (Hyalgan)
  - All are synthetic forms of hyaluronic acid
  - "Building blocks" of synovial fluid
- Series of 3 - 5 injections
- Indicated ONLY for OA of knees
- VERY expensive!! \$\$\$
  - MUCH cheaper than joint replacement
- No limit on # of repeat series



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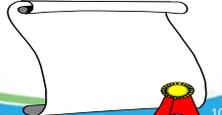
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**Dr. Z's GOLDEN Rules**  
(For Steroid Injections)

*Never EVER forget these!!!*

- Injecting in a joint is injecting in a OPEN space (If you gotta push, you're in the WRONG spot!!)
- Inject **AROUND** tendons, **NOT** in them!!!
- **CAREFUL** injecting near the Achilles tendon (**High** risk of rupture)
  - Retrocalcaneal bursitis



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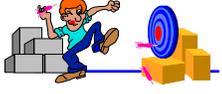
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**Dr. Z's GOLDEN Rules**  
(For Steroid Injections)

- Use enough volume to as to fill the joint space or to fully bathe the tendon
  - Usually 5 cc of anesthetic + the steroid
    - Less anesthetic is better!!!
- Usual dose of steroid is
  - 1 cc for large joints
  - 0.25 to 0.5 for smaller joints & tendons
- Inject slowly for less pain




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**Dr. Z's GOLDEN Rules**  
(For Steroid Injections)

- Use short acting anesthetic
  - Be aware of chondrolysis!
- Pain disappears immediately w/ anesthetic
  - Used diagnostically (Ya got the right place!)
- Pt's will experience a steroid flare that occurs in 12 - 24 hours
- Dr Z's "Magic formula" for large joints:
  - 1cc Triamcinolone 40, 5cc Xylocaine 1% Plain



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## Local Anesthetic Issues

- Bupivacaine, lidocaine, ropivacaine and mepivacaine have been found to show some toxicity to cartilage in some studies
  - Level of toxicity is controversial
  - Bupi/Lido > Mepi/Ropi
- Osteoarthritic cartilage more susceptible
  - Glenohumeral joint more sensitive in 1 study
- Toxic effects occur in the superficial cartilage layers and include damage to membrane integrity, and decreased chondrocyte viability



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## Local Anesthetic Issues

- For this reason some will only
  - Inject ONLY the corticosteroid
  - Use sterile normal saline 1-5cc
  - 1cc of local anesthetic



- Arthroscopy; [May 2014](#) Volume 30, Issue 5, Pages 607-612
- [Knee Surg Sports Traumatol Arthrosc](#), 2018 Mar;26(3):819-830. doi: 10.1007/s00167-017-4470-5. Epub 2017 Mar 13.
- [J Orthop](#), 2015 Dec; 12(Suppl 2): S200-S210.

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## Dr. Z's GOLDEN Rules

(For Steroid Injections)



**Avoid** using long acting or Oil based corticosteroids in a joint

- All steroids:
  - Reduce inflammation (desired effect)
  - Soften tendons (risk of rupture!!)
  - Induce cartilage breakdown (increase OA!!)
- Water soluble, short to intermediate acting are the safest (but limit to 3-4 per year max)



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### Dr. Z's *GOLDEN* Rules

(For ALL Injections)



Local anesthetic alone can be used for:

- Diagnosis of joint vs. tendon vs. "other" problems
- Injection of trigger points (Fibromyalgia)
- Examination of very painful, "hot", or acutely injured joints

Hyaluronic acid preparations are preloaded

- Need to aspirate "ALL" fluid in joint first



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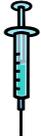
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### Technique



- Find & mark the spot using "high tech" marking tool (tip of a closed ballpoint pen)
- Sterilize using betadine and alcohol
- Anesthesia (ethyl chloride or lidocaine)
  - May use lidocaine before betadine/alcohol
- Place needle into middle of joint
  - Feel a "pop"
  - Aim for **MIDDLE** of joint
- Inject "like into free air"
- Remove needle and cover




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### Knee Anterior-Lateral Approach




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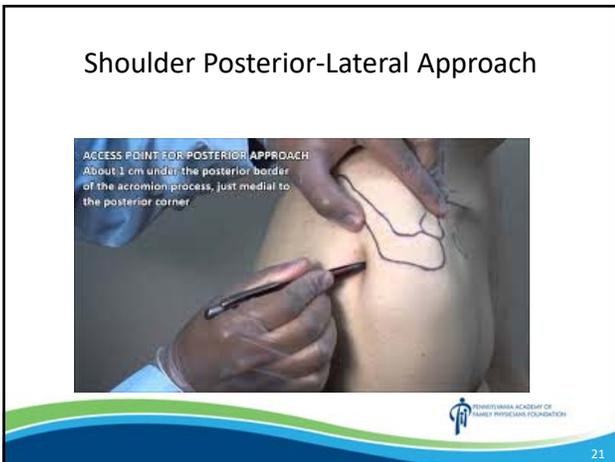
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## Into the Sub-acromial Space



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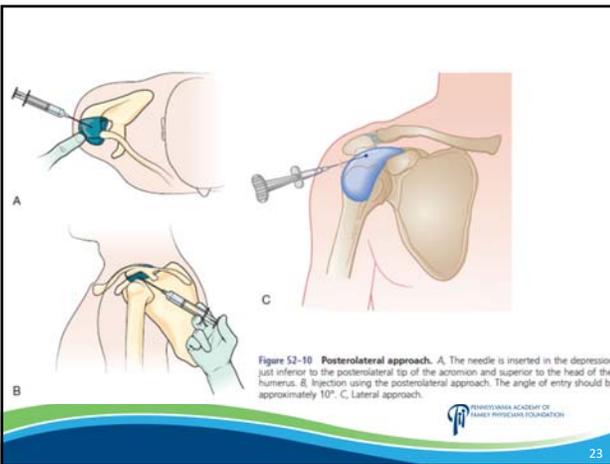


Figure 52-10 **Posterolateral approach.** A, The needle is inserted in the depression just inferior to the posterolateral tip of the acromion and superior to the head of the humerus. B, Injection using the posterolateral approach. The angle of entry should be approximately 10°. C, Lateral approach.

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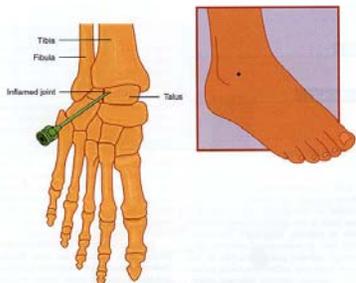
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## Ankle Anterior-Lateral Approach



FIGURES 88-1 AND 88-2

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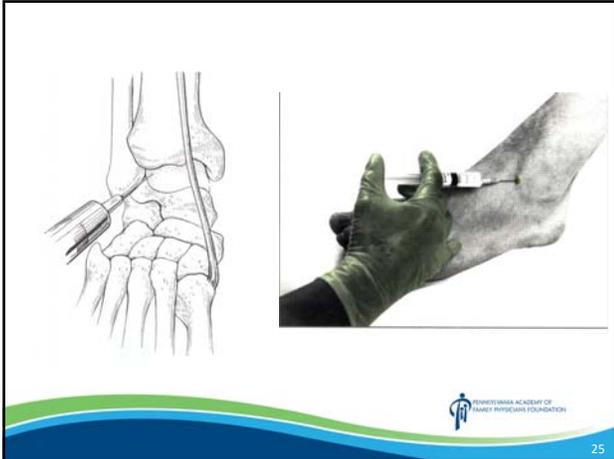
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### Carpal Tunnel Injection

Figure 1. The patient's wrist is flexed against resistance and palmaris longus tendon is observed, the radial side is the best place to infiltrate. With the wrist in a straight position, the needle is inserted 2 cm at an angle of 90°, ensuring that the solution is deposited in the carpal tunnel behind the flexor retinaculum.

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### DeQuervain's Injection

**De Quervain's Syndrome Treatment**

- **Steroid Injection**
  - Injecting steroids into the tendon sheath of the first dorsal compartment with the wrist over a rolled up towel.

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## Plantar Fasciitis



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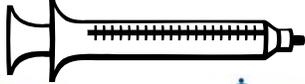
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*Any Questions??*

*• Lets start doing some practicing!*



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**Pennsylvania Academy of Family Physicians &  
WellSpan Health CME Conference  
March 8 – 10, 2019**

***Care of the Patient in Crisis: Trauma Informed De-escalation  
Strategies for the Office***

Sukhjeet Kamboj, MD, FAAFP and Nora Callinan, MD

**Disclosures:**

The speakers have no conflict of interest, financial agreement, or working affiliation with any group or organization.

The speakers have attested that their presentation will be free of all commercial bias toward a specific company and its products.

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**[Click here to return to the table of contents.](#)**

# Care of the Patient in Crisis: Trauma Informed De-escalation Strategies for the Office

Nora Callinan, M.D.  
Sukhjeet Kamboj, M.D., FAAFP



04/01/20

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No disclosures or conflicts of interest

© Cartoonbank.com



"Try this—I just bought a hundred shares."

04/01/20

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Upon completion of this seminar, the audience will be able to:

- Define the concept of trauma informed care
- Identify signs of escalation and crisis in human beings
- Practice active listening and grounding techniques as a core tool in de-escalation
- Apply principles of de-escalation and crisis management to real life scenarios



04/01/20

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Rationale



© 2013

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Trauma informed care

© 2013

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Trauma and the brain/body



Trauma & Brain Development



Typical Development



Developmental Trauma



Adapted from Holt & Jordan, Ohio Dept. of Education

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## Steps in Crisis Management



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## Critical Incidents That May Precipitate a Crisis

- **Developmental** (i.e., life-transition events): Birth of child, graduation from college, midlife career change, retirement
- **Existential** (i.e., inner conflicts and anxieties related to purpose, responsibility, independence, freedom, or commitment): Realization that one will never make a significant impact on one's profession, remorse that one has never married or had children, despair that one's life has been meaningless
- **Environmental** (i.e., natural or man-made disasters): Tornado, earthquake, floods, hurricanes, forest or grass fires
- **Medical** (i.e., a newly diagnosed medical condition or an exacerbation of a current medical problem): Multiple sclerosis, human immunodeficiency virus infection, infertility, myocardial infarction, cancer, medical problems that result in partial or total disability
- **Psychiatric** (i.e., actual syndromes and those that affect coping): Depression or suicidal thoughts, events precipitating acute or post-traumatic stress disorder
- **Situational** (i.e., uncommon, situation-specific events): Loss of job, motor-vehicle collision, divorce, rape



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### Step 1: Recognize signs of escalation

- Change in tone of voice or speed of speech
- Fidgeting/psychomotor agitation
- Sweating
- Shaking
- Balled fists
- Aggressive posturing
- Verbal aggression
- Change in eye contact



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### Step 2: Evaluate severity

- Observations (the 5 senses)
- Gut feeling
- Pre-determined knowledge from nurse or front end
- Talking to the patient



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### Step 3: Ensure Safety

- Acute danger to self or others:
  - Get out, and get help
  - Run, hide, fight
  - Utilize psychiatric crisis resources and support staff
- Safety level unclear:
  - proceed with caution
  - use your judgment/gut



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### Step 3: Safety continued

- Avoid turning your back, quick actions
- Maintain a clear path to the door for yourself and the patient
- Stay at the same eye level
- Maintain limited eye contact
- Keep an open posture
- Approach at an angle, rather than head on or from the back
- Be aware of tone of voice
- Be courteous



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### Step 4: Stabilize the Patient

- Offer choices whenever possible: "Mr. S, would you like to continue our visit today or maybe stop for now and meet another time?"
- Address needs: "Can I get you anything right now? A cup of water?"
- "What can I do to help you feel safer?"
- Answer questions honestly and factually
- Use reflective listening/affect labeling/open ended questions
- If relevant, use a grounding technique



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**Reflective Listening & Affect Labeling**

- Listen carefully to the person speaking
- Process what they are saying
- Reflect this back in a statement
  - Simple
  - Complex



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- Patient: "Nobody wants to help me, they just want me to keep suffering."
- Doctor: "You feel frustrated."
  
- Patient: "There's no point in trying, this medicine is going to give me side effects."
- Doctor: "You are skeptical." or "You feel nervous."
  
- Patient: "I'm only here because my wife made me come."
- Doctor: "You feel misunderstood."



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- Describe a time when you encountered a patient in crisis.
  - How did you know that the patient was in crisis? What kind of crisis was it?
  - What emotion(s) did you feel during that encounter?
  - How was the situation handled? Would you change anything about it?
- Partner will practice reflective listening and affect labeling while the other shares, then switch.





Think    Pair    Share



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Grounding Techniques



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What is grounding?

- Use of strategies to detach from emotional pain or distress – may include cravings, anger, sadness or destructive impulses
- Different from relaxation/meditation



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### Step 5: Problem Solve

- If a problem can be identified, reflect back what you notice to the patient. Be honest, specific and brief.
- Develop a plan with realistic, concrete steps—consider writing them down with the patient
- Ask the patient to summarize/commit
- Address harmful coping strategies (self harm, substance use)
- End on a positive note: identify a strength and take note of this



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### Step 6: Follow Up

- Appropriate time/person
- At follow up, remember to reinforce small successes
- Debrief with staff



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Step 1: recognize the signs

Step 2: evaluate severity

Step 3: safety

Step 4: stabilize

Step 5: problem solve

Step 6: follow up



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## Applying the Knowledge



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## Scenario 1

A 20 yo young woman, a college student, comes to see you for a rash on abdomen. You tell her to put on a gown and you step out of the room. Her mother also leaves the room behind you to talk to you in hallway, sobbing at the same time. She is upset and tells you that her daughter has disclosed to her today that her husband, who is not the father of her daughter, has been sexually abusing her daughter since she was 11 years old. She is distraught and wants you to help her.

What do you do next?



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## Scenario 2

36 yo woman who is a patient of yours who works in a warehouse is here to see you acutely for an injury that happened at work early this morning. She was transferring heavy boxes in a cart. As she was pulling it, a heavy box fell on her neck. She started to feel pain and was evaluated by warehouse manager. As she was on her way to see you in the office, she found out through a text that she is dismissed from work. She is now upset and crying in the room.

How do we approach this clinical situation?



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### Scenario 3

A 58 yo man walks into the urgent care where you work stating that he is having a heart attack, having chest pain. He is quickly rushed to an exam room, where the nurse did initial vitals and history, and is getting him ready for EKG. He is a current smoker and meth user who just started rehab, and is upset that his longstanding benzodiazepine has been stopped. He is hypertensive and has family history of cardiac problems. When you come into the room, he tries to sit up during the EKG and requests you write a letter to his drug rehab facility that he needs his benzos. His voice is raised when he speaks. His diaphoretic and tachycardic with otherwise normal EKG. He refuses to go to the ER.

How do you approach this patient's problem?



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### Scenario 4

Your continuity patient Debra was able to book an acute visit for her aunt Ms. B, who has been living with her for about 2 months. Ms B is 76 years old and has no children of her own. Her niece Debra was able to bring her to her home from Puerto Rico after the recent hurricanes. Ms. B has lost everything. She has arthritis, hypertension, diabetes, hyper-lipidemia and hypothyroidism. She is requesting refills of her medications. You notice that she does not make good eye contact and seems very sad. You also found out that she does not sleep well and constantly misses "home".

How will you approach various issues of this patient?



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### Scenario 5

Brandy is 22 years old transgender woman (M->F) who comes with her foster mother. She was adopted at age 16, prior to which she was homeless and frequently involved in street fights, drug abuse and has been a victim of sexual assault multiple times. She has been in and out of therapy and rehab few times recently. Today she asks if you will write Suboxone for her. While you are working on your certification, you are still not able to do so. Brandy is reluctant to go anywhere else because she fears that she will not be understood. She appears agitated, biting her lips frequently. Brandy's mother is in the room, she appears desperate and tearful.

What is your approach to this patient



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### Scenario 6

Your partner in the office is a 44 year old woman from southeast Asia. You have been noting that she is very quiet for last few weeks. Her evaluations from patients and students have shown that she is not very engaged and seems not herself. After asking permission from her, you ask what is going on that has affected her interactions. She initially does not say much. After your persistence, she discloses that she is on work visa for a long time and as it has taken so long in this process, her only daughter has aged out of application and she is sending her to a different country to pursue college studies. She cannot afford to send her to college in USA due to financial constraints. She is constantly worried about her daughter and also going through emotions of "empty nest syndrome". She states that she struggles to understand if she even belongs in this country.

How will you approach this situation?



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### Scenario 7

You are scheduled to see a 17 yo young woman for initiation of birth control. Her male partner is with her today. They are seen by front desk staff to be arguing heatedly in the waiting room about her going to this appointment. The nurse notifies you of this. After the nurse rooms the patient (still accompanied by her partner), she comes to you concerned that the partner's body language is angry and agitated towards the patient.

What is your next move?



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### Scenario 8

A 40 year old woman is scheduled for pap smear with you today. During the start of the encounter, she seems nervous. As you attempt to place the speculum, she bursts into tears and will not allow you to continue the exam, slapping your hand away.

What do you do next?



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### Scenario 9

A 34 year old woman is a continuity patient of yours, and comes for a visit for dating ultrasound for a new pregnancy. She brings her teenage son with her and is clearly excited. You perform the ultrasound and are dismayed to see what appears to be an anembryonic pregnancy (nonviable). The patient reads the look on your face, and when she hears the news she becomes extremely angry and tearful. She keeps asking whether you're sure about that finding.

What will your next move be?



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### Resources on providing Trauma Informed Care

JBS International, Inc. and Georgetown University National Technical Assistance Center for Children's Mental Health: Trauma Informed Care: Perspectives and Resources <http://trauma.jbsinternational.com/traumatool/>

National Center for Trauma-Informed Care <https://www.samhsa.gov/nctic>

National Child Traumatic Stress Network <http://www.nctsn.org/>

National Council for Behavioral Health: Trauma-Informed Primary Care Initiative <https://www.thenationalcouncil.org/trauma-informed-primary-care-initiative-learning-community>



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**Pennsylvania Academy of Family Physicians &  
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March 8 – 10, 2019**

***Effective Opioid Tapering Practices***  
Amy Porter

**Disclosures:**

The speaker has no conflict of interest, financial agreement, or working affiliation with any group or organization.

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**Pennsylvania Academy of Family Physicians &  
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***How to Integrate the Use of the PDMP into the Workflow to  
Make Clinical Decisions***

Amy Porter

**Disclosures:**

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March 8 – 10, 2019**

***Pain Management and Best Practices***  
Christopher Kent Echterling, MD

**Disclosures:**

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## Pain Management and Best Practices

Chris Echterling, M.D.  
Medical Director for Vulnerable Populations, WellSpan Health



"My drug dealer was a doctor, doctor  
Had the plug from Big Pharma, Pharma  
He said that he would heal me, heal me  
But he only gave me problems, problems"

Lyrics from "Drug Dealer"  
by Macklemore

PAFP Annual Business Meeting & CME Conference,  
Wyndham Gettysburg, March 10, 2019



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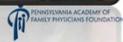
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## Bryanna's Story



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### Toxicology Results

Results:	Concentration	Units	Therapeutic Range	Detection Limit
<b>Blood (Femoral) Collection Time: 12/17/15 08:00</b>				
Ethanol	None Detected	%		0.01
Morphine, Total	107	ng/mL	Not established	20
Sertraline	86	ng/mL	30-100	20
Fentanyl	24.4	ng/mL		0.5
After a single 2 ug/kg IV dose: Up to 11 ng/mL. After application of a 100 ug/hour transdermal patch: Up to 1.9-3.8 ng/mL. After a single oral transmucosal dose of 15 ug/kg: Up to 2-4 ng/mL at 20 minutes				
Norfentanyl	5.0	ng/mL		0.5

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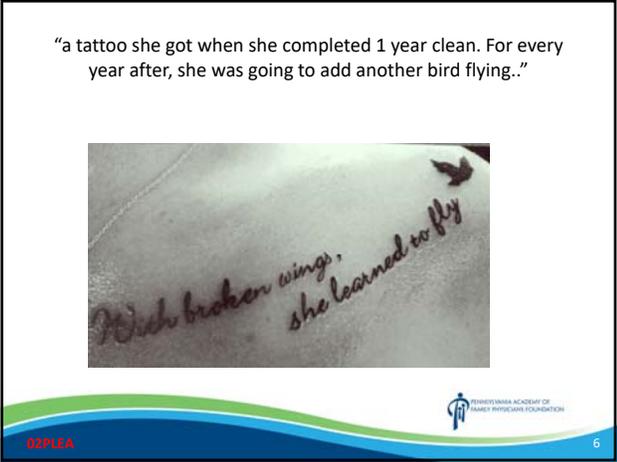
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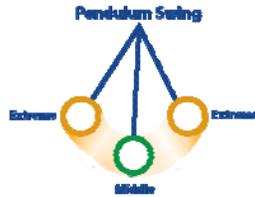
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## Addressing the opioid crisis is a strategic priority for WellSpan



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Annals of Internal Medicine

REVIEW

### The Effectiveness and Risks of Long-Term Opioid Therapy for Chronic Pain: A Systematic Review for a National Institutes of Health Pathways to Prevention Workshop

Roger Chou, MD, Judith A. Turner, PhD, Emily B. Devita, PharmD, PhD, MBA, Ryan N. Hansen, PharmD, PhD, Sean D. Sullivan, PhD, Ian Bazzin, MPH, Tracy Davis, MSc, Christina Bruggeler, MPH, and Richard A. Deyo, MD, MPH

**Background:** Increases in prescriptions of opioid medications for chronic pain have been accompanied by increases in opioid overdoses, abuse, and other harms and uncertainty about long-term effectiveness.

**Purpose:** To evaluate evidence on the effectiveness and harms of long-term (>3 months) opioid therapy for chronic pain in adults.

**Data Sources:** MEDLINE, the Cochrane Central Register of Controlled Trials, the Cochrane Database of Systematic Reviews, PubMed, and CINAHL (January 2008 through August 2014); relevant studies from a prior review, reference lists, and ClinicalTrials.gov.

**Study Selection:** Randomized trials and observational studies that involved adults with chronic pain who were prescribed long-term opioid therapy and that evaluated opioid therapy versus placebo, no opioid, or nonopioid therapy; observed opioid dosing strategies; or risk mitigation strategies.

**Data Extraction:** Dual extraction and quality assessment.

**Data Synthesis:** For study of opioid therapy versus no opioid therapy, evaluated long-term (>1 year) outcomes related to pain, function, quality of life, opioid abuse or addiction, Good and

**Conclusion:** Evidence is insufficient to determine the effectiveness of long-term opioid therapy for improving chronic pain and function. Evidence supports a dose-dependent risk for serious harms.

**Conclusion:** Evidence is insufficient to determine the effectiveness of long-term opioid therapy for improving chronic pain and function. Evidence supports a dose-dependent risk for serious harms.

**Primary Funding Source:** Agency for Healthcare Research and Quality.  
Ann Intern Med. doi:10.1093/ajcp.2014.2014.010  
For author disclosures, see end of article.  
This article was published online first at www.annals.org on 11 January 2015.



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## Scope of the problem



"Relieving Pain in America"  
— IOM 2011



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**Governor Wolf Declares Heroin and Opioid Epidemic a Statewide Disaster Emergency**  
January 10, 2018



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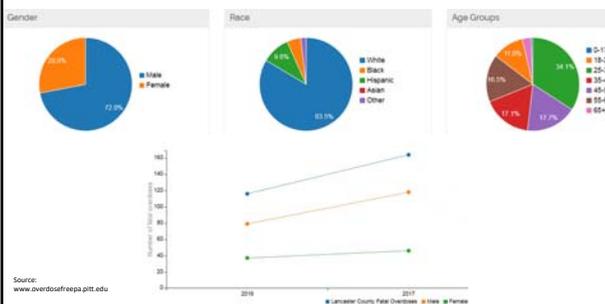
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### 164 Opioid Overdoses - Lancaster County 2017



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### Acute Pain Management



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**Characteristics of Initial Prescription Episodes and Likelihood of Long-Term Opioid Use — United States, 2006–2015**

- 1,294,247 opioid naïve adult Tricare patients without cancer or OUD
- Likelihood of chronic opioid use increased with:
  - each additional day of medication supplied starting with the 3rd day
  - with the sharpest increases after:
    - the 5<sup>th</sup> and 31<sup>st</sup> day
    - a second prescription or refill
    - 700 MME cumulative dose
    - an initial 10- or 30-day supply
- Highest probability of continued opioid use at 1 and 3 years was Pts:
  - started on a long-acting opioid
  - followed by patients who started on tramadol



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## ACUTE PAIN MANAGEMENT

- The risk of Acute becoming Chronic
- Setting the expectation
- Safe storage and disposal
- Acute on Chronic pain management
- Prescribing opioids on discharge from the hospital/post operative



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## SETTING THE EXPECTATION

- Alternatives to opioids
  - ice, heat, acetaminophen, NSAID, breathing
- Adjunct to opioids
  - ice, heat, acetaminophen, NSAID, breathing
- Temporary - set the expectation
  - "You're not going to need this for long", you should be able to decrease this over the next 3-7 days"
- Warnings
  - Driving, securing meds, disposal
- It is about function, not just pain – document!



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## CDC RECOMMENDATIONS

6. Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed.

7. Clinicians should evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. Clinicians should evaluate benefits and harms of continued therapy with patients every 3 months or more frequently. If benefits do not outweigh harms of continued opioid therapy, clinicians should optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids.



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## CDC RECOMMENDATIONS

8. Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk factors for opioid-related harms. Clinicians should incorporate into the management plan strategies to mitigate risk, including considering offering naloxone when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages ( $\geq 50$  MME/day), or concurrent benzodiazepine use, are present.



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## WHAT SHOULD BE ASSESSED AT FOLLOW UP VISITS?

- Benefits in function
- Pain control
- Quality of life (PEG-3)
- Common adverse effects such as constipation and drowsiness



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## WHAT SHOULD BE ASSESSED AT FOLLOW UP VISITS? (CONTINUED)

- Effects that may be early warning signs for serious problems such as overdose
  - Sedation
  - Slurred speech
- Effects that may be early warning signs for opioid use disorder
  - Cravings
  - Wanting to take greater quantities than prescribed
  - Wanting to take opioids more frequently than prescribed
  - Difficulty controlling opioid use
  - Work or family problems related to opioid use



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## PHYSICIAN/APC'S SHOULD ASK THE PATIENT:

- Their preferences for continuing opioids
- Whether the benefits of opioids continue to outweigh the risks
- Whether opioid dosage can be reduced or discontinued



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Office Visit from 12/28/2017 in WellSp...	
3/20/18	
Jump To (Alt+Command)	2145 2200
PEG3	
What number best describes your pain on average in the past week:	10
What number best describes how, during the past week, pain has interfered with your enjoyment of life?	7
What number best describes how, during the past week, pain has interfered with your general activity:	10
PEG Score:	9
Adverse Effects:	
Nausea	yes
Constipation	
Drowsiness/mental cloudiness	no
Aberrant Behavior	
Early refill request or unapproved dose increase	yes
Arguments with or criticism from others about controlled medication use	no
OTHER	
Discussed ongoing risks/benefits of continuing opioids	yes
Non-opioid treatments discussed	Meditation, Ac...



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## Urine Drug Screens

- Remember – Unexpected Screening results need to be confirmed. Tramadol, fentanyl, methylphenidate always send out quantitative
- There are no "opioid emergencies" other than respiratory arrest
- Be firm but empathetic
  - "I can't prescribe this medicine safely without these tests" (compare - DM, DVT)
  - "I'm not accusing you of being a drug addict. Our system has decided for the safety of our patients and community – we need to apply these approaches to safe prescribing and monitoring to ALL" (compare – child abuse clearances)



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## Urine Drug Tests: Ordering and Interpretation

Neelima Kale, PhD, MD, MBA, University of Texas Southwestern Medical Center, Dallas, Texas

Urine drug testing is an essential component of monitoring patients who are receiving long-term opioid therapy, and it has been suggested for patients receiving long-term benzodiazepine or stimulant therapy. Family physicians should be familiar with the characteristics and capabilities of screening and confirmatory drug tests. Immunoassays are qualitative tests used for initial screening of urine samples. They can give false-positive and false-negative results, so all results are considered presumptive until confirmatory testing is performed. Immunoassays for opioids may not detect commonly prescribed semisynthetic and synthetic opioids such as methadone and fentanyl; similarly, immunoassays for benzodiazepines may not detect alprazolam or clonazepam. Immunoassays can cross-react with other medications and give false-positive results, which have important implications for a patient's pain treatment plan. False-negative results can cause missed opportunities to detect misuse. Urine samples can be adulterated with other substances to mask positive results on urine drug testing. Family physicians must be familiar with these substances, the methods to detect them, and their effects on urine drug testing. (*Am Fam Physician*. 2019;99(1):33-39. Copyright © 2019 American Academy of Family Physicians.)

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## Naloxone Prescribing

- Going in and coming out of
  - Jail, rehab
- daily opioid dose > 50 mg morphine equivalent
- methadone any dose
- h/o Substance Abuse
- PA Standing order
- educate Pt/family



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## Securing and Disposing of Meds

- \$10 can save a life
- May still steal or break open – but at least you will know
- “It is important for you to destroy any leftover medicine”
- OpioidAware.org for takeback locations



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## 2015 PENNSYLVANIA YOUTH SURVEY

- Heroin Use 0.4%
- Opioid Prescription Drug Use 5.7%
  - 42.4% took them from a family member living in their home
  - 46.8% received them from a friend or family member
  - 21.7% bought them from someone
- 26% of youth say it is “sort of easy” or “very easy” to access prescription pain drugs



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## PRESCRIPTION OPIOID ANALGESICS COMMONLY UNUSED AFTER SURGERY - A SYSTEMATIC REVIEW

- 6 studies
- 810 unique patients
- Orthopedic, thoracic, obstetric, and general surgical procedures
- 67% - 92% reported unused opioids
- Rates of safe storage and/or disposal of unused opioids were low

Mark C. Bicket, MD, et al. Johns Hopkins  
JAMA Surgery. Published online August 2, 2017



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## Who Does that? What's Wrong with Her?

### Addiction is a Chronic Disease

*"I was never a bad person, but drugs made me do bad things."*

**Ashley Fotis**  
Certified Recovery Specialist,  
Washington County Drug and  
Alcohol Commission

A Windsor Township woman allegedly admitted to snorting heroin before she passed out in her running car on Friday, York Area Regional police said. Her infant son was in the back of her car for about 20 minutes before officers and paramedics arrived

Need to increase:

- Our staff's understanding of addiction
- Identify patients (and staff) with addiction
- Support for addicted patients and for care teams



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### Safe Disposal of Drugs and Medicines

Prescription medication is important, to be used when you are sick and have certain health problems. It also needs to be stored correctly and you should never reuse leftover medicines without talking to your doctor first. There is a right way to get rid of leftover medicines. Learn more about safe disposal methods and local drug take-back programs.

#### Additional Resources

- Videos: Understanding addiction
- Drug abuse and dependence
- Questions about substance abuse treatment programs
- Inpatient and outpatient treatment for substance abuse
- Residential treatment for substance abuse
- Teen substance abuse: choosing a treatment program



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## Scope of the problem

### Non-Medical Opioid Users

Estimated 825 non-medical users of opioids for every overdose death and that 4 of 5 people that overdose had an opioid pain medicine prescribed to them or a family member.

### Increase in Overdose Deaths

In South Central PA 442% increase in overdose admission due to prescription opioids, 305% increase in overdose admissions due to heroin

### Opioid Withdraw Cases

Admissions to WellSpan York Hospital NICU for Neonatal Abstinence Syndrome (opioid withdraw) has increased from 10 cases in 2007 to 99 cases in 2015

### In Recovery (2012 Survey)

10 % of all American adults, ages 18 and older, consider themselves to be in recovery from drug or alcohol abuse problems (23.5 million)



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The True Tale of America's Opiate Epidemic

# DREAM LAND

Sam Quinones  
LA Times Reporter/Author

ACES and Health



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## Medication Assisted Treatment For Addiction

- Buprenorphine (Suboxone), Vivitrol
- 1-844-PHILHAVEN



**MEDICATION**  
Medication Assisted Treatment (MAT) reduces opioid cravings, preventing physical relapse so that you can focus on getting your life back on track.



**COUNSELING**  
Specialists can help you discover what led to your addiction and what needs should be met to achieve recovery.



**RECOVERY SUPPORT**  
Focus help with legal needs, transportation, getting a job and being reemployed, we connect you with the help you need.



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## Challenges Ahead



- Accessibility of comprehensive coordinated pain evaluation (physical health, cognitive behavioral therapy, physical therapy, pharmacy, complimentary medicine, and addiction evaluation as appropriate)
  - Available centers
  - Insurance coverage, co-pays
- Addiction treatment
  - Availability and Coordination
- Public Attitude – “let them die” (Naloxone)

Questions? – [cechterling@wellspan.org](mailto:cechterling@wellspan.org)



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## Opioid Resources and Stats

[www.wellspan.org/opioids](http://www.wellspan.org/opioids)

Pain resources, “Understanding Addiction” and “Managing Surgical Pain: Non-opioid Options and Safe Opioid Use” videos (bottom of page), Controlled Substance Agreement Video, “Safe Disposal of Drugs and Medicines” handout, addiction resources

[www.wellspan.org/MAT](http://www.wellspan.org/MAT)

videos and materials explaining Medication Assisted Treatment for Addiction

CDC Opioid Guideline Mobile App: <https://www.cdc.gov/drugoverdose/prescribing/app.html>

[www.OpioidAware.org](http://www.OpioidAware.org)

South Central Opioid Awareness Coalition – co-founded by WellSpan Health

Over Dose Free PA – County Overdose statistics, local treatment resources, naloxone and drug takeback boxes

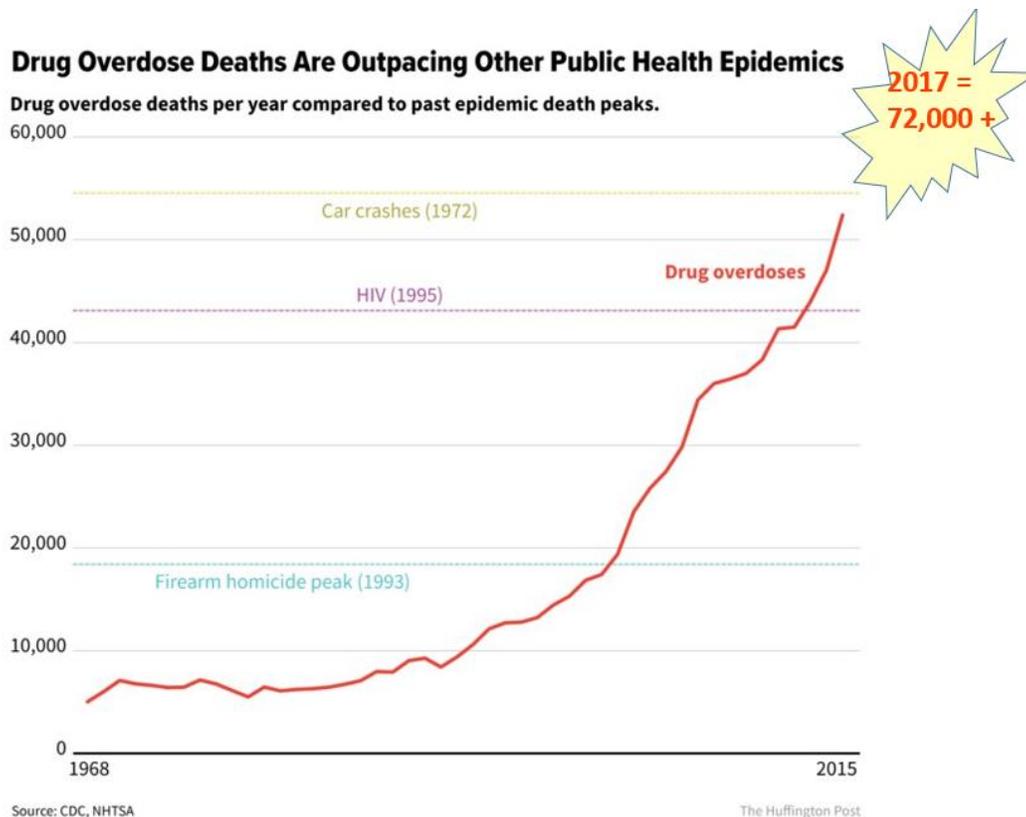
<https://www.overdosefreepa.pitt.edu/>

*Dreamland - The True Tale Of America's Opiate Epidemic* by Sam Quinones

<https://www.npr.org/books/titles/406835887/dreamland-the-true-tale-of-americas-opiate-epidemic>

*The Deepest Well: Healing the Long-Term Effects of Childhood Adversity* by Nadine Burke Harris

Ted Talk by Dr. Burke Harris: [https://www.ted.com/speakers/nadine\\_burke\\_harris\\_1](https://www.ted.com/speakers/nadine_burke_harris_1)



# Safe Disposal of Medicines

Medicines are drugs prescribed by your doctor such as antibiotics, opioids for pain, and other over the counter drugs. They need to be stored in a correct way for use. You should never reuse leftover medicines without talking to your doctor first. There is a right way to get rid of leftover medicines. Look at the medicines you have on hand. Old out dated and unused ones should be thrown away.

## How do I safely dispose of drugs and medicines?

Throwing away expired or unused medicines in the right way can protect you and your loved ones from harm. It will also prevent the medicines from getting into someone else's hands for use. Follow the instructions on the label or package inserts to know how to safely dispose of your drugs and medicines. DO NOT flush down the toilet or sink unless the label or patient information insert tells you to do this.

Follow these steps before throwing away medicines in the trash:

1. Pour medicine into a plastic bag that seals. Add water to help dissolve the medicine.
2. Add kitty litter, dirt or coffee grounds (something that will make it less appealing for pets and children to eat) to the plastic bag.
3. Seal the plastic bag and put it in the trash.
4. Remove and destroy any personal information (such as the label with your name) from the medicine container before recycling or throwing it away.

## Drug Take-back Programs

Drug take-back programs are a good way to get rid of expired, unwanted or unused medicines and drugs from the home. This will lower the risk that others may accidentally take the medicine.

### Local drug take-back program information:

Many police stations have drug take-back boxes in their lobbies. To find the nearest take back box:

- Adams County - call 717-783-8200
- Lancaster County - call 717-397-9968
- Lebanon County - call 717-783-8200
- York County - call 717-845-1066

#### Other resources:

- York County Solid Waste Authority  
[www.ycswa.com](http://www.ycswa.com)
- PA Dept. of Drug and Alcohol Programs - Drug Take-back Program  
[www.ddap.pa.gov](http://www.ddap.pa.gov)

**\* WellSpan Medical Groups and other facilities DO NOT accept medicine or drugs for disposal.**

**At this time, the following WellSpan Outpatient Pharmacy locations will accept medicines for disposal:**

- WellSpan Pharmacy, York Hospital
- WellSpan Pharmacy, Apple Hill Medical Center
- WellSpan Pharmacy, Fairfield
- WellSpan Pharmacy, Good Samaritan Hospital
- WellSpan Pharmacy, Ephrata Community Hospital

**Poison help: 1-800-222-1222**

**Keep all drugs and medicines out of sight and reach of children.**



[PATIENT LABEL]

## Controlled Substance Agreement – WellSpan Health

**Patient Name:** \_\_\_\_\_ **DOB:** \_\_\_\_\_

**Active Controlled Drug List:** \_\_\_\_\_

These drugs are controlled by state and federal laws and include opioid (narcotic) pain drugs, ADHD drugs, anxiety drugs, and drugs to help with sleep.

***Controlled drugs are prescribed to:***

- Reduce pain, anxiety, or attention problems
- Improve function or activity (such as: sleep or school performance)
- Be used along with other treatments- drugs work best this way (such as: Physical & Occupational Therapy, exercise, and modifying study habits)

***Controlled drugs have risks of:***

- Side effects (nausea, constipation, confusion, some times more pain)
- Negative interactions with certain drugs (including alcohol) which should not be used
- Dependence, Tolerance & Withdrawal (illness with sudden stopping of drug – including newborns)
- Abuse & Addiction (loss of control over the use of the drug)

To ensure health and safety for you and the community, WellSpan Health and you should agree upon the following terms prior to controlled drugs being prescribed to you. **Not following this Controlled Substance Agreement may result in WellSpan Health not being able to prescribe your controlled drugs.**

**Patient Agrees:**

- I will get my controlled drugs from this office only. If I get ANY controlled drugs from anywhere else, I will call or secure message this office the next business day.
- I will tell other health care providers about this Controlled Substance Agreement, including emergency departments and urgent care centers.
- I will not miss appointments and I am willing to use other treatments that may be recommended.
- I will request refills 2 business days before I run out, and only during office hours
- I will not use more than prescribed, and I will not request early refills.
- I will keep all drugs out of the reach of children and in a secure place. I will not request a prescription for lost or stolen drugs.
- I will not share or sell these drugs with anyone.
- I will not take street drugs or any form of marijuana.
- I agree to pill counts and urine drug screens when requested, even if I must pay for the tests
- Treat my treatment team with dignity and respect

**Medical Office Agrees:**

- To protect privacy of your medical information as required by law. We may share information, such as the use, or concern for misuse, of controlled drugs with other health care providers.
- To do our best to help you function better, even if we need to stop your controlled drugs.
- To be aware of medical guidelines when prescribing
- We will help you avoid side effects, misuse, abuse, and addiction.
- To tell you if we are concerned about controlled drug misuse, and if needed, we will help you heal from addiction.
- By law, to report to the Department of Transportation, if we believe that the drugs may affect your ability to safely drive a vehicle.
- To follow state and federal laws, like checking computer records when prescribing controlled drugs.
- To always treat you with dignity and respect as a partner in your care.

**I read (or have had read to me) and agree to the above:**

**Patient Signature:** \_\_\_\_\_

**Patient Name (Print):** \_\_\_\_\_

**Date:** \_\_\_\_\_

**I agree to hold my office to the above:**

**Physician/APC Signature:** \_\_\_\_\_

**Name (print):** \_\_\_\_\_

**Office:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**SAMPLE AGREEMENT: ITEMS CAN BE ADDED/MOVED/REMOVED TO FIT YOUR  
INDIVIDUAL OFFICE AGREEMENT – SEE NEXT PAGE FOR BLANK**

### Immediate Termination

- Prescription altering/forging
- 2nd CSA Violation
- Refusal to sign CSA
- Refusal of pill count/UDS

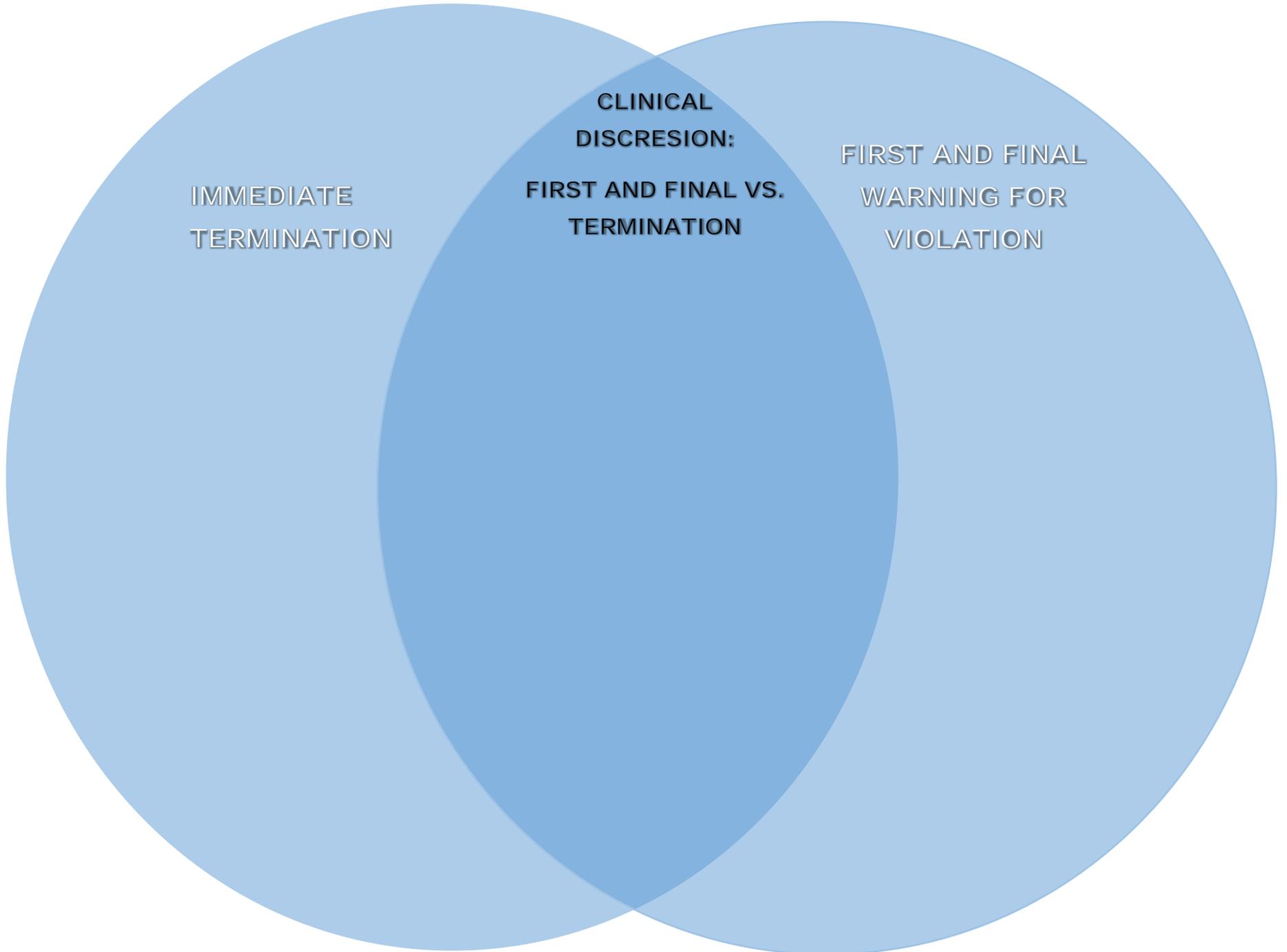
### Clinical Discretion:

#### First and Final VS. Termination

- Illicit drugs
- No show for UDS
- No show for pill count
- Unable to void
- Unexpected UDS results
- Unexpected pill count results
- Receiving controlled drug from another prescriber
- Did not bring pills for pill count

### First and Final warning for violation

- Out of town for pill count
- Transportation issues
- No return call for pill count
- Not following recommended tx
- Demanding Rx same day



PHYSICIAN/APC AGREEMENT

- All violation decisions must be made by the prescribing provider or previous shared agreement of the practice.
- The provider may choose not to give a first and final warning for a first violation listed in the middle section above and instead issue a CSA termination and no longer prescribe controlled substances to the patient.
- Warnings/Violations will be documented in the overview section of "Controlled Substance Agreement Violation" and/or "Controlled Substance Agreement Termination" on the patient's Problem List by the provider or designee.
- A provider should NOT give a 2<sup>nd</sup> "first and final" warning without the agreement of the provider group during the next provider meeting or by conversations with colleagues

*I agree to the above CSA violation scenarios. I have come to a unified agreement with my colleagues in the practice and will be accountable for my adherence to this agreement. I will not discriminate based on age/sex/race/personal relationship with my patient(s). I will not deviate from the above scenarios unless presented to the entire group and we come to a shared decision.*

Signature \_\_\_\_\_ Date \_\_\_\_\_

# Opioid addiction can affect anyone.

Addiction is a life-threatening illness that takes over the brain. It impacts your chance to enjoy life, hold a job, keep good relationships and be healthy.

## Help is available.

No treatment is one-size-fits-all. We take a customized, whole-person approach to make sure all of your needs are met on your path to recovery.



### MEDICATION

Medication-Assisted Treatment (MAT) reduces opioid cravings, providing physical relief so that you can focus on getting your life back on track.



### COUNSELING

Specialists can help you uncover what led to your addiction and what needs must be met to achieve recovery.



### RECOVERY SUPPORT

From help with legal needs to transportation, getting a job and fixing relationships, we connect you with the help you need.



## Your Journey

Our team is ready to help you get back on your feet. Medication Assisted Treatment (MAT) can quickly reduce your opioid cravings so that you can begin your path toward recovery.

## Here's what you can expect:

- More frequent visits to start; appointments will then become weekly for several weeks
- Urine drug screens and medication counts as a routine part of treatment
- Discussion with your MAT prescriber about which medicines are safe to use when in MAT
- Assistance from a recovery specialist in overcoming barriers, like finances and transportation issues, so that you can follow your treatment plan
- Open talk about relapse; relapse is not uncommon and should not be seen as a complete failure or a sign that recovery is not possible. If, despite support, a person still uses non-prescribed drugs, this might mean that MAT is not the right treatment, and a different recovery program may be needed.

## With support, recovery is possible. We'll help you get back to a healthy life.

Ready to begin treatment? Call 1-844-Philhaven (1-844-744-5428)

# NONOPIOID TREATMENTS FOR CHRONIC PAIN

## PRINCIPLES OF CHRONIC PAIN TREATMENT

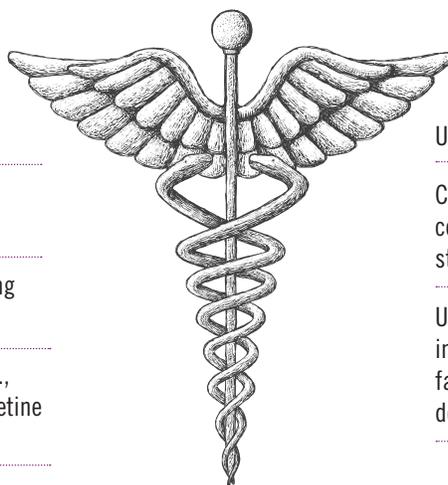
Patients with pain should receive treatment that provides the greatest benefit. Opioids are not the first-line therapy for chronic pain outside of active cancer treatment, palliative care, and end-of-life care. Evidence suggests that nonopioid treatments, including nonopioid medications and nonpharmacological therapies can provide relief to those suffering from chronic pain, and are safer. Effective approaches to chronic pain should:

Use nonopioid therapies to the extent possible

Identify and address co-existing mental health conditions (e.g., depression, anxiety, PTSD)

Focus on functional goals and improvement, engaging patients actively in their pain management

Use disease-specific treatments when available (e.g., triptans for migraines, gabapentin/pregabalin/duloxetine for neuropathic pain)



Use first-line medication options preferentially

Consider interventional therapies (e.g., corticosteroid injections) in patients who fail standard non-invasive therapies

Use multimodal approaches, including interdisciplinary rehabilitation for patients who have failed standard treatments, have severe functional deficits, or psychosocial risk factors

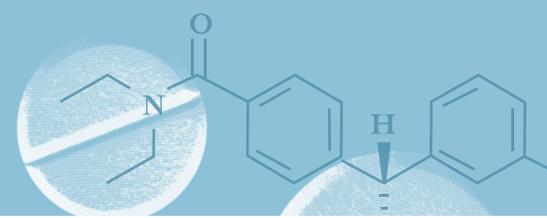
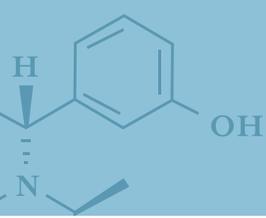
## NONOPIOID MEDICATIONS

Medication	Magnitude of benefits	Harms	Comments
Acetaminophen	Small	Hepatotoxic, particularly at higher doses	First-line analgesic, probably less effective than NSAIDs
NSAIDs	Small-moderate	Cardiac, GI, renal	First-line analgesic, COX-2 selective NSAIDs less GI toxicity
Gabapentin/pregabalin	Small-moderate	Sedation, dizziness, ataxia	First-line agent for neuropathic pain; pregabalin approved for fibromyalgia
Tricyclic antidepressants and serotonin/norepinephrine reuptake inhibitors	Small-moderate	TCAs have anticholinergic and cardiac toxicities; SNRIs safer and better tolerated	First-line for neuropathic pain; TCAs and SNRIs for fibromyalgia, TCAs for headaches
Topical agents (lidocaine, capsaicin, NSAIDs)	Small-moderate	Capsaicin initial flare/burning, irritation of mucus membranes	Consider as alternative first-line, thought to be safer than systemic medications. Lidocaine for neuropathic pain, topical NSAIDs for localized osteoarthritis, topical capsaicin for musculoskeletal and neuropathic pain



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

LEARN MORE | [www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html)



## RECOMMENDED TREATMENTS FOR COMMON CHRONIC PAIN CONDITIONS

### Low back pain

**Self-care and education in all patients;** advise patients to remain active and limit bedrest

**Nonpharmacological treatments:** Exercise, cognitive behavioral therapy, interdisciplinary rehabilitation

#### Medications

- First line: acetaminophen, non-steroidal anti inflammatory drugs (NSAIDs)
- Second line: Serotonin and norepinephrine reuptake inhibitors (SNRIs)/tricyclic antidepressants (TCAs)

### Migraine

#### Preventive treatments

- Beta-blockers
- TCAs
- Antiseizure medications
- Calcium channel blockers
- Non-pharmacological treatments (Cognitive behavioral therapy, relaxation, biofeedback, exercise therapy)
- Avoid migraine triggers

#### Acute treatments

- Aspirin, acetaminophen, NSAIDs (may be combined with caffeine)
- Antinausea medication
- Triptans-migraine-specific

### Neuropathic pain

**Medications:** TCAs, SNRIs, gabapentin/pregabalin, topical lidocaine

### Osteoarthritis

**Nonpharmacological treatments:** Exercise, weight loss, patient education

#### Medications

- First line: Acetaminophen, oral NSAIDs, topical NSAIDs
- Second line: Intra-articular hyaluronic acid, capsaicin (limited number of intra-articular glucocorticoid injections if acetaminophen and NSAIDs insufficient)

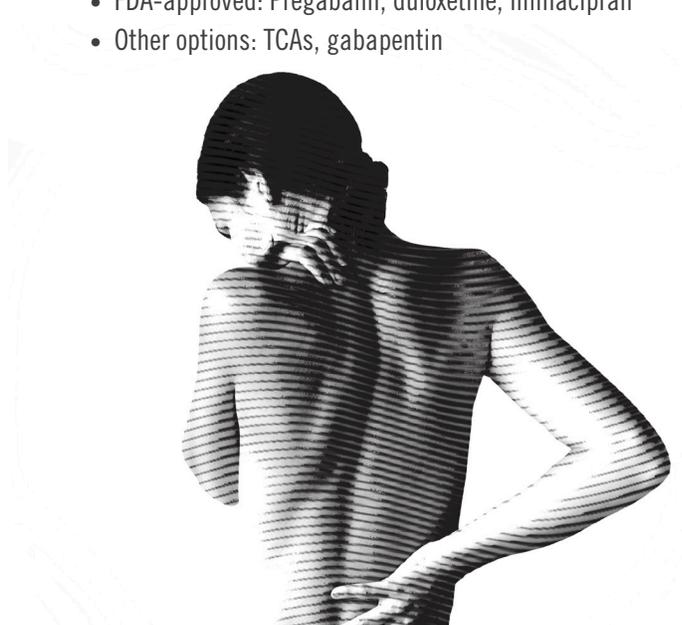
### Fibromyalgia

**Patient education:** Address diagnosis, treatment, and the patient's role in treatment

**Nonpharmacological treatments:** Low-impact aerobic exercise (i.e. brisk walking, swimming, water aerobics, or bicycling), cognitive behavioral therapy, biofeedback, interdisciplinary rehabilitation

#### Medications

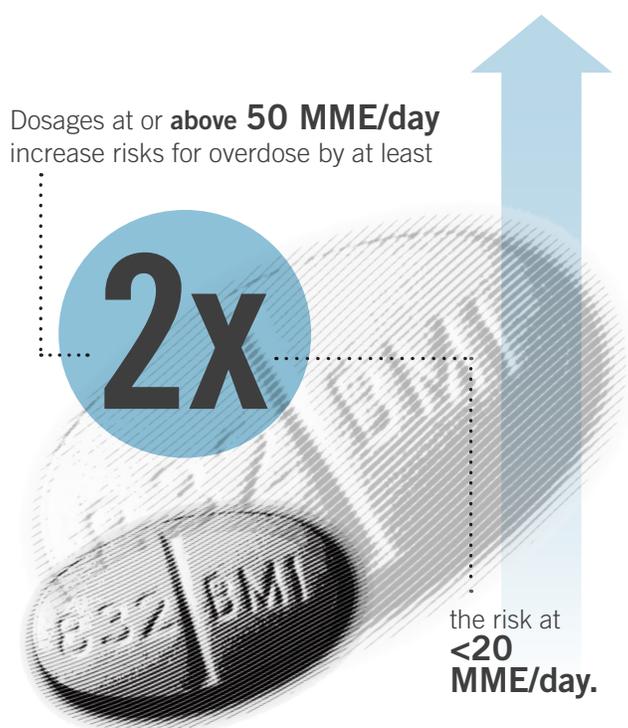
- FDA-approved: Pregabalin, duloxetine, milnacipran
- Other options: TCAs, gabapentin



# CALCULATING TOTAL DAILY DOSE OF OPIOIDS FOR SAFER DOSAGE

## Higher Dosage, Higher Risk.

Higher dosages of opioids are associated with higher risk of overdose and death—even relatively low dosages (20-50 morphine milligram equivalents (MME) per day) increase risk. Higher dosages haven't been shown to reduce pain over the long term. One randomized trial found no difference in pain or function between a more liberal opioid dose escalation strategy (with average final dosage 52 MME) and maintenance of current dosage (average final dosage 40 MME).



## WHY IS IT IMPORTANT TO CALCULATE THE TOTAL DAILY DOSAGE OF OPIOIDS?

**Patients prescribed higher opioid dosages are at higher risk of overdose death.**

In a national sample of Veterans Health Administration (VHA) patients with chronic pain receiving opioids from 2004–2009, **patients who died** of opioid overdose were prescribed an average of **98 MME/day**, while **other patients** were prescribed an average of **48 MME/day**.

**Calculating the total daily dose of opioids helps identify patients who may benefit from closer monitoring, reduction or tapering of opioids, prescribing of naloxone, or other measures to reduce risk of overdose.**

## HOW MUCH IS 50 OR 90 MME/DAY FOR COMMONLY PRESCRIBED OPIOIDS?

### 50 MME/day:

- 50 mg of hydrocodone (10 tablets of hydrocodone/acetaminophen 5/300)
- 33 mg of oxycodone (~2 tablets of oxycodone sustained-release 15 mg)
- 12 mg of methadone (<3 tablets of methadone 5 mg)

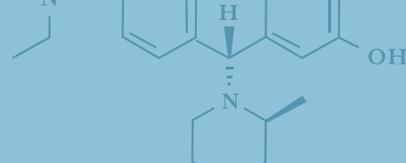
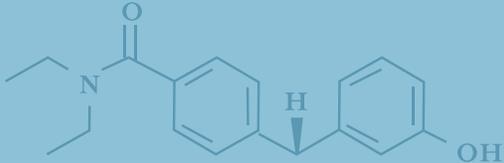
### 90 MME/day:

- 90 mg of hydrocodone (9 tablets of hydrocodone/acetaminophen 10/325)
- 60 mg of oxycodone (~2 tablets of oxycodone sustained-release 30 mg)
- ~20 mg of methadone (4 tablets of methadone 5 mg)



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LEARN MORE | [www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html)



## HOW SHOULD THE TOTAL DAILY DOSE OF OPIOIDS BE CALCULATED?

1

**DETERMINE** the total daily amount of each opioid the patient takes.

2

**CONVERT** each to MMEs—multiply the dose for each opioid by the conversion factor. (see table)

3

**ADD** them together.



### Calculating morphine milligram equivalents (MME)

OPIOID (doses in mg/day except where noted)	CONVERSION FACTOR
Codeine	0.15
Fentanyl transdermal (in mcg/hr)	2.4
Hydrocodone	1
Hydromorphone	4
Methadone	
1-20 mg/day	4
21-40 mg/day	8
41-60 mg/day	10
≥ 61-80 mg/day	12
Morphine	1
Oxycodone	1.5
Oxymorphone	3

*These dose conversions are estimated and cannot account for all individual differences in genetics and pharmacokinetics.*

#### CAUTION:

- Do not use the calculated dose in MMEs to determine dosage for converting one opioid to another—the new opioid should be lower to avoid unintentional overdose caused by incomplete cross-tolerance and individual differences in opioid pharmacokinetics. Consult the medication label.

#### USE EXTRA CAUTION:

- Methadone:** the conversion factor increases at higher doses
- Fentanyl:** dosed in mcg/hr instead of mg/day, and absorption is affected by heat and other factors

## HOW SHOULD PROVIDERS USE THE TOTAL DAILY OPIOID DOSE IN CLINICAL PRACTICE?

- Use caution when prescribing opioids at any dosage and prescribe the lowest effective dose.
- Use extra precautions when increasing to ≥50 MME per day\* such as:
  - Monitor and assess pain and function more frequently.
  - Discuss reducing dose or tapering and discontinuing opioids if benefits do not outweigh harms.
  - Consider offering naloxone.
- Avoid or carefully justify increasing dosage to ≥90 MME/day.\*



\* These dosage thresholds are based on overdose risk when opioids are prescribed for pain and should not guide dosing of medication-assisted treatment for opioid use disorder.

# PRESCRIPTION OPIOIDS: WHAT YOU NEED TO KNOW



Prescription opioids can be used to help relieve moderate-to-severe pain and are often prescribed following a surgery or injury, or for certain health conditions. These medications can be an important part of treatment but also come with serious risks. It is important to work with your health care provider to make sure you are getting the safest, most effective care.

## WHAT ARE THE RISKS AND SIDE EFFECTS OF OPIOID USE?

**Prescription opioids carry serious risks of addiction and overdose, especially with prolonged use.** An opioid overdose, often marked by slowed breathing, can cause sudden death. The use of prescription opioids can have a number of side effects as well, even when taken as directed:

- Tolerance—meaning you might need to take more of a medication for the same pain relief
- Physical dependence—meaning you have symptoms of withdrawal when a medication is stopped
- Increased sensitivity to pain
- Constipation
- Nausea, vomiting, and dry mouth
- Sleepiness and dizziness
- Confusion
- Depression
- Low levels of testosterone that can result in lower sex drive, energy, and strength
- Itching and sweating

As many as  
**1 in 4**  
PEOPLE\*



receiving prescription opioids long term in a primary care setting struggles with addiction.

\* Findings from one study

## RISKS ARE GREATER WITH:

- History of drug misuse, substance use disorder, or overdose
- Mental health conditions (such as depression or anxiety)
- Sleep apnea
- Older age (65 years or older)
- Pregnancy

Avoid alcohol while taking prescription opioids. Also, unless specifically advised by your health care provider, medications to avoid include:

- Benzodiazepines (such as Xanax or Valium)
- Muscle relaxants (such as Soma or Flexeril)
- Hypnotics (such as Ambien or Lunesta)
- Other prescription opioids



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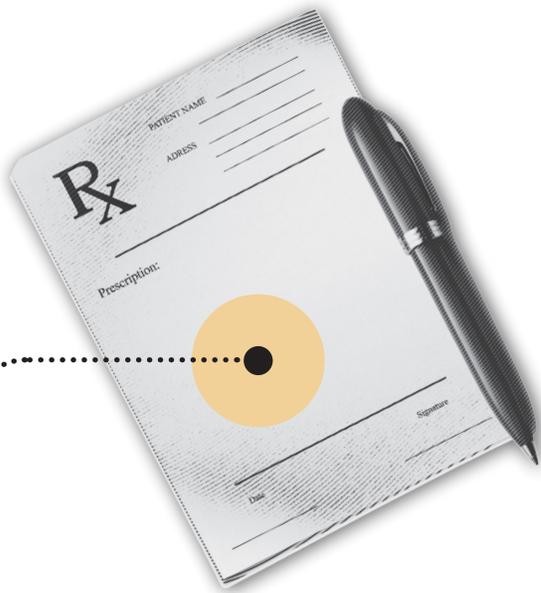


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Association®

## KNOW YOUR OPTIONS

Talk to your health care provider about ways to manage your pain that don't involve prescription opioids. Some of these options **may actually work better** and have fewer risks and side effects. Options may include:

- ❑ Pain relievers such as acetaminophen, ibuprofen, and naproxen
- ❑ Some medications that are also used for depression or seizures
- ❑ Physical therapy and exercise
- ❑ Cognitive behavioral therapy, a psychological, goal-directed approach, in which patients learn how to modify physical, behavioral, and emotional triggers of pain and stress.



### Be Informed!

Make sure you know the name of your medication, how much and how often to take it, and its potential risks & side effects.



## IF YOU ARE PRESCRIBED OPIOIDS FOR PAIN:

- ❑ Never take opioids in greater amounts or more often than prescribed.
- ❑ Follow up with your primary health care provider within \_\_\_ days.
  - Work together to create a plan on how to manage your pain.
  - Talk about ways to help manage your pain that don't involve prescription opioids.
  - Talk about any and all concerns and side effects.
- ❑ Help prevent misuse and abuse.
  - Never sell or share prescription opioids.
  - Never use another person's prescription opioids.
- ❑ Store prescription opioids in a secure place and out of reach of others (this may include visitors, children, friends, and family).
- ❑ Safely dispose of unused prescription opioids: Find your community drug take-back program or your pharmacy mail-back program, or flush them down the toilet, following guidance from the Food and Drug Administration ([www.fda.gov/Drugs/ResourcesForYou](http://www.fda.gov/Drugs/ResourcesForYou)).
- ❑ Visit [www.cdc.gov/drugoverdose](http://www.cdc.gov/drugoverdose) to learn about the risks of opioid abuse and overdose.
- ❑ If you believe you may be struggling with addiction, tell your health care provider and ask for guidance or call SAMHSA's National Helpline at 1-800-662-HELP.

# CDC GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN

## Promoting Patient Care and Safety

### THE US OPIOID OVERDOSE EPIDEMIC

The United States is in the midst of an epidemic of prescription opioid overdoses. The amount of opioids prescribed and sold in the US quadrupled since 1999, but the overall amount of pain reported by Americans hasn't changed. This epidemic is devastating American lives, families, and communities.



40

More than 40 people die every day from overdoses involving prescription opioids.<sup>1</sup>



165K

Since 1999, there have been over 165,000 deaths from overdose related to prescription opioids.<sup>1</sup>



4.3M

4.3 million Americans engaged in non-medical use of prescription opioids in the last month.<sup>2</sup>

### PRESCRIPTION OPIOIDS HAVE BENEFITS AND RISKS

Many Americans suffer from chronic pain. These patients deserve safe and effective pain management. Prescription opioids can help manage some types of pain in the short term. However, we don't have enough information about the benefits of opioids long term, and we know that there are serious risks of opioid use disorder and overdose—particularly with high dosages and long-term use.

R<sub>x</sub>

249M

prescriptions for opioid pain medication were written by healthcare providers in 2013



enough prescriptions were written for every American adult to have a bottle of pills

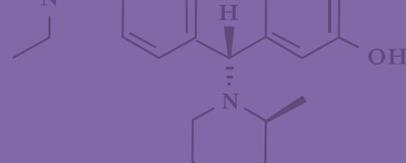
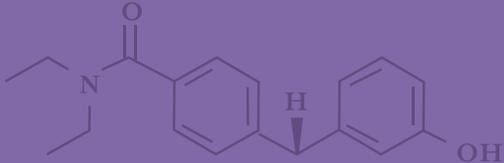
<sup>1</sup> Includes overdose deaths related to methadone but does not include overdose deaths related to other synthetic prescription opioids such as fentanyl.

<sup>2</sup> National Survey on Drug Use and Health (NSDUH), 2014



U.S. Department of Health and Human Services  
Centers for Disease Control and Prevention

LEARN MORE | [www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html)



## NEW CDC GUIDELINE WILL HELP IMPROVE CARE, REDUCE RISKS

The Centers for Disease Control and Prevention (CDC) developed the *CDC Guideline for Prescribing Opioids for Chronic Pain (Guideline)* for primary care clinicians treating adult patients for chronic pain in outpatient settings. The Guideline is not intended for patients who are in active cancer treatment, palliative care, or end-of-life care. The Guideline was developed to:

- Improve communication between clinicians and patients about the benefits and risks of using prescription opioids for chronic pain
- Provide safer, more effective care for patients with chronic pain
- Help reduce opioid use disorder and overdose

The Guideline provides recommendations to primary care clinicians about the appropriate prescribing of opioids to improve pain management and patient safety. It will:

- Help clinicians determine if and when to start prescription opioids for chronic pain
- Give guidance about medication selection, dose, and duration, and when and how to reassess progress, and discontinue medication if needed
- Help clinicians and patients—together—assess the benefits and risks of prescription opioid use

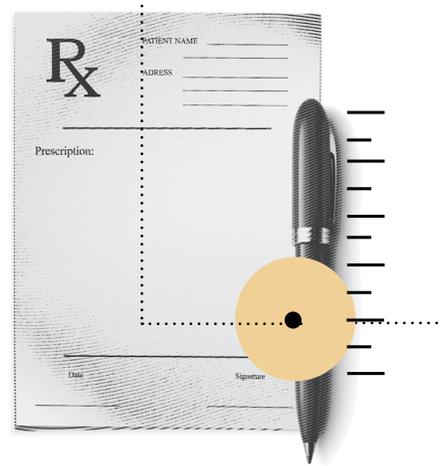
Among the 12 recommendations in the Guideline, there are three principles that are especially important to improving patient care and safety:

- Nonopioid therapy is preferred for chronic pain outside of active cancer, palliative, and end-of-life care.
- When opioids are used, the lowest possible effective dosage should be prescribed to reduce risks of opioid use disorder and overdose.
- Clinicians should always exercise caution when prescribing opioids and monitor all patients closely.

To develop the Guideline, CDC followed a transparent and rigorous scientific process using the best available scientific evidence, consulting with experts, and listening to comments from the public and partners.



patients receiving long-term **opioid therapy** in primary care settings

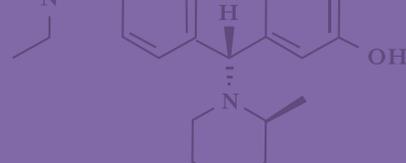
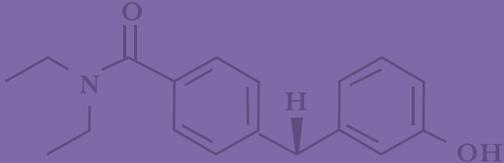


struggle with **opioid use disorder**.

## PATIENT CARE AND SAFETY IS CENTRAL TO THE GUIDELINE

Before starting opioids to treat chronic pain, patients should:

- Make the most informed decision with their doctors
- Learn about prescription opioids and know the risks
- Consider ways to manage pain that do not include opioids, such as:
  - Physical therapy
  - Exercise
  - Nonopioid medications, such as acetaminophen or ibuprofen
  - Cognitive behavioral therapy (CBT)



# CDC RECOMMENDATIONS

## DETERMINING WHEN TO INITIATE OR CONTINUE OPIOIDS FOR CHRONIC PAIN

- 1 OPIOIDS ARE NOT FIRST-LINE THERAPY**  
**Nonpharmacologic therapy** and **nonopioid pharmacologic therapy** are preferred for chronic pain. Clinicians should consider opioid therapy only if expected benefits for both pain and function are anticipated to outweigh risks to the patient. If opioids are used, they should be combined with nonpharmacologic therapy and nonopioid pharmacologic therapy, as appropriate.
- 2 ESTABLISH GOALS FOR PAIN AND FUNCTION**  
Before starting opioid therapy for chronic pain, clinicians should establish treatment goals with all patients, including realistic goals for pain and function, and should consider how opioid therapy will be discontinued if benefits do not outweigh risks. Clinicians should continue opioid therapy only if there is clinically meaningful improvement in pain and function that outweighs risks to patient safety.
- 3 DISCUSS RISKS AND BENEFITS**  
Before starting and periodically during opioid therapy, clinicians should discuss with patients known risks and realistic benefits of opioid therapy and patient and clinician responsibilities for managing therapy.

### Nonpharmacologic therapies and nonopioid medications include:

- Nonopioid medications such as acetaminophen, ibuprofen, or certain medications that are also used for depression or seizures
- Physical treatments (eg, exercise therapy, weight loss)
- Behavioral treatment (eg, CBT)
- Interventional treatments (eg, injections)

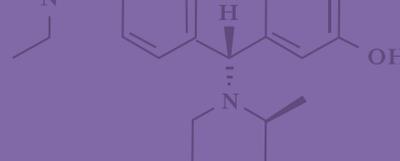
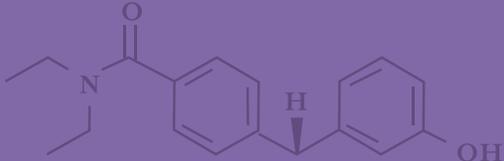
## OPIOID SELECTION, DOSAGE, DURATION, FOLLOW-UP, AND DISCONTINUATION

- 4 USE IMMEDIATE-RELEASE OPIOIDS WHEN STARTING**  
When starting opioid therapy for chronic pain, clinicians should prescribe **immediate-release opioids** instead of extended-release/long-acting (ER/LA) opioids.
- 5 USE THE LOWEST EFFECTIVE DOSE**  
When opioids are started, clinicians should prescribe the lowest effective dosage. Clinicians should use caution when prescribing opioids at any dosage, should carefully reassess evidence of individual benefits and risks when considering increasing dosage to  $\geq 50$  **morphine milligram equivalents (MME)/day**, and should avoid increasing dosage to  $\geq 90$  MME/day or carefully justify a decision to titrate dosage to  $\geq 90$  MME/day.
- 6 PRESCRIBE SHORT DURATIONS FOR ACUTE PAIN**  
Long-term opioid use often begins with treatment of acute pain. When opioids are used for acute pain, clinicians should prescribe the lowest effective dose of immediate-release opioids and should prescribe no greater quantity than needed for the expected duration of pain severe enough to require opioids. Three days or less will often be sufficient; more than seven days will rarely be needed.

**Immediate-release opioids:** faster acting medication with a shorter duration of pain-relieving action

**Extended release opioids:** slower acting medication with a longer duration of pain-relieving action

**Morphine milligram equivalents (MME)/day:** the amount of morphine an opioid dose is equal to when prescribed, often used as a gauge of the abuse and overdose potential of the amount of opioid that is being given at a particular time



## 7 EVALUATE BENEFITS AND HARMS FREQUENTLY

Clinicians should evaluate benefits and harms with patients within 1 to 4 weeks of starting opioid therapy for chronic pain or of dose escalation. Clinicians should evaluate benefits and harms of continued therapy with patients every 3 months or more frequently. If benefits do not outweigh harms of continued opioid therapy, clinicians should optimize other therapies and work with patients to taper opioids to lower dosages or to taper and discontinue opioids.

# ASSESSING RISK AND ADDRESSING HARMS

## 8 USE STRATEGIES TO MITIGATE RISK

Before starting and periodically during continuation of opioid therapy, clinicians should evaluate risk factors for opioid-related harms. Clinicians should incorporate into the management plan strategies to mitigate risk, including considering offering **naloxone** when factors that increase risk for opioid overdose, such as history of overdose, history of substance use disorder, higher opioid dosages ( $\geq 50$  MME/day), or concurrent **benzodiazepine** use, are present.

**Naloxone:** a drug that can reverse the effects of opioid overdose

**Benzodiazepine:** sometimes called “benzo,” is a sedative often used to treat anxiety, insomnia, and other conditions

## 9 REVIEW PDMP DATA

Clinicians should review the patient’s history of controlled substance prescriptions using state **prescription drug monitoring program (PDMP)** data to determine whether the patient is receiving opioid dosages or dangerous combinations that put him or her at high risk for overdose. Clinicians should review PDMP data when starting opioid therapy for chronic pain and periodically during opioid therapy for chronic pain, ranging from every prescription to every 3 months.

**PDMP:** a prescription drug monitoring program is a statewide electronic database that tracks all controlled substance prescriptions

## 10 USE URINE DRUG TESTING

When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs.

## 11 AVOID CONCURRENT OPIOID AND BENZODIAZEPINE PRESCRIBING

Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible.

## 12 OFFER TREATMENT FOR OPIOID USE DISORDER

Clinicians should offer or arrange evidence-based treatment (usually **medication-assisted treatment** with buprenorphine or methadone in combination with behavioral therapies) for patients with opioid use disorder.

**Nearly 2M** Americans, aged 12 or older, either abused or were dependent on prescription opioids in 2014

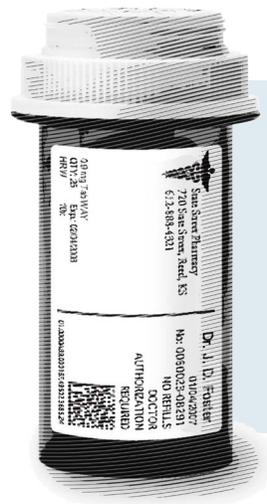
**Medication-assisted treatment:** treatment for opioid use disorder including medications such as buprenorphine or methadone

# CDC OPIOID PRESCRIBING GUIDELINE MOBILE APP

## Safer Opioid Prescribing at Your Fingertips

### THE OPIOID GUIDE APP

Opioids can have serious risks and side effects, and CDC developed the CDC Guideline for Prescribing Opioids for Chronic Pain to encourage safer, more effective chronic pain management. CDC's new Opioid Guide App makes it easier to apply the recommendations into clinical practice by putting the entire guideline, tools, and resources in the palm of your hand.



Since 1999, the amount of prescription opioids sold in the U.S. has nearly quadrupled.

### FEATURES INCLUDE:



MME Calculator

Patients prescribed higher opioid dosages are at higher risk of overdose death. Use the app to quickly calculate the total daily opioid dose (MME) to identify patients who may need closer monitoring, tapering, or other measures to reduce risk.



Prescribing Guidance

Access summaries of key recommendations or link to the full Guideline to make informed clinical decisions and protect your patients.



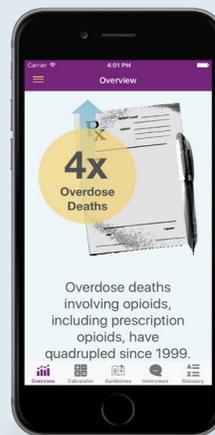
Motivational Interviewing (MI)

To provide safer, more effective pain management, talk to your patients about the risks and benefits of opioids and work together towards treatment goals. Use the interactive MI feature to practice effective communication skills and prescribe with confidence.

## MANAGING CHRONIC PAIN IS COMPLEX, BUT ACCESSING PRESCRIBING GUIDANCE HAS NEVER BEEN EASIER.

Download the free Opioid Guide App today!

[www.cdc.gov/drugoverdose/prescribing/app.html](http://www.cdc.gov/drugoverdose/prescribing/app.html)



Available on the App Store

ANDROID APP ON Google play

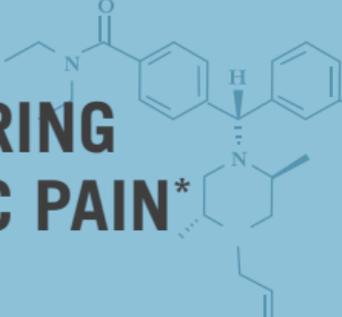
*This App, including the calculator, is not intended to replace clinical judgment. Always consider the individual clinical circumstances of each patient.*



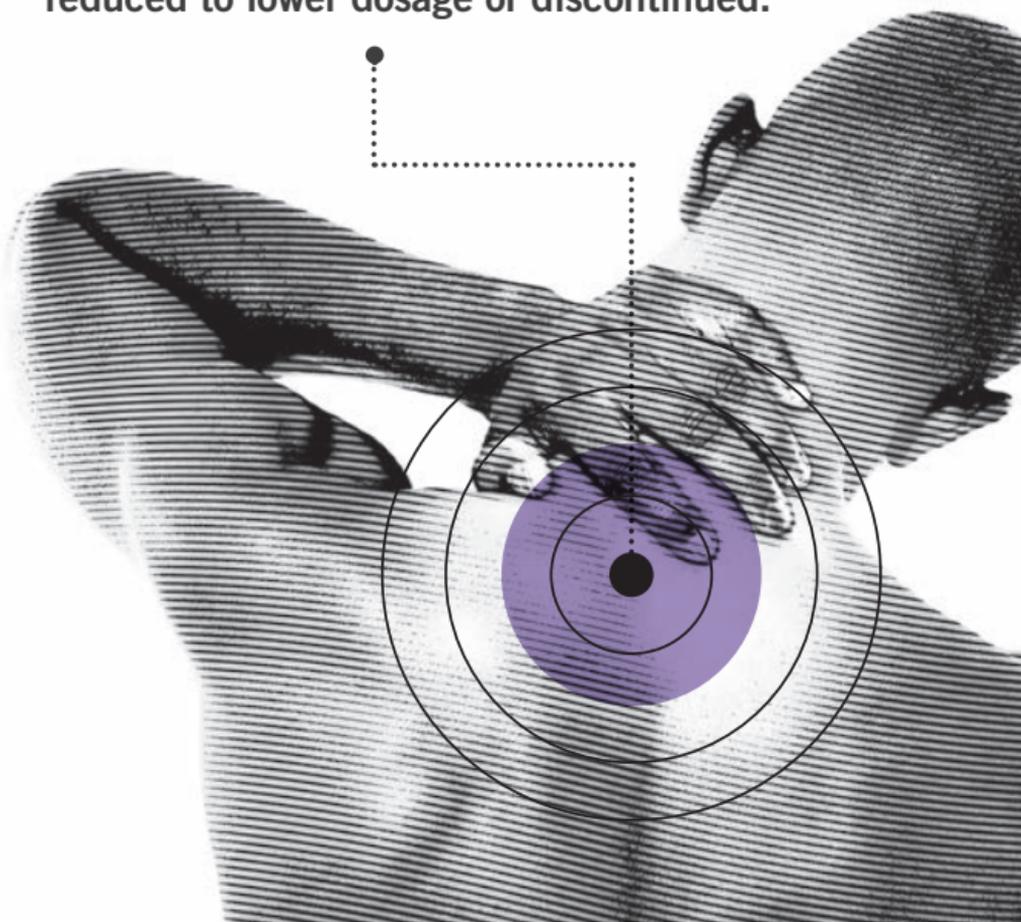
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# POCKET GUIDE: TAPERING OPIOIDS FOR CHRONIC PAIN\*



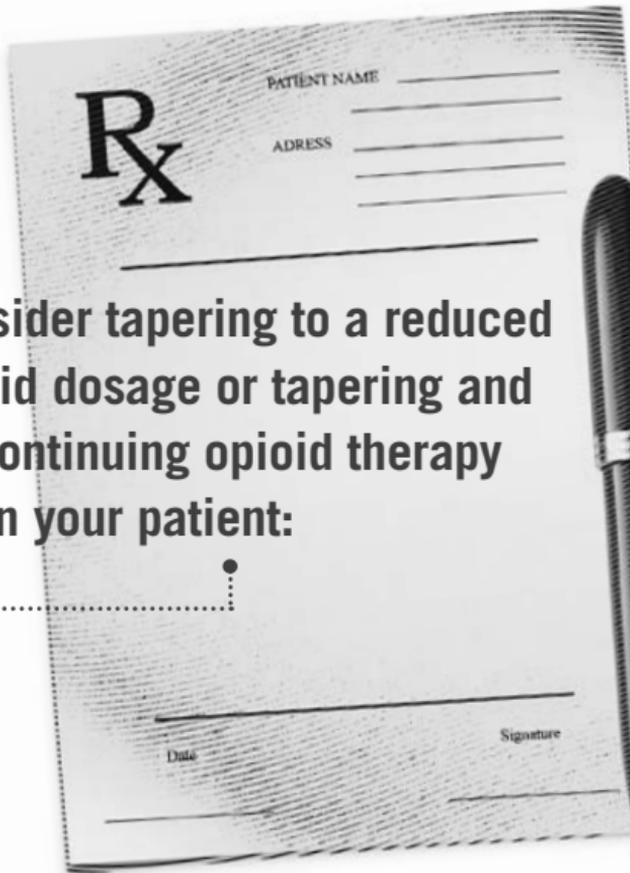
Follow up regularly with patients to determine whether opioids are meeting treatment goals and whether opioids can be reduced to lower dosage or discontinued.



**GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN**

\*Recommendations focus on pain lasting longer than 3 months or past the time of normal tissue healing, outside of active cancer treatment, palliative care, and end-of-life care.

# WHEN TO TAPER



**Consider tapering to a reduced opioid dosage or tapering and discontinuing opioid therapy when your patient:**

- requests dosage reduction
- does not have clinically meaningful improvement in pain and function (e.g., at least 30% improvement on the 3-item PEG scale)
- is on dosages  $\geq 50$  MME\*/day without benefit or opioids are combined with benzodiazepines
- shows signs of substance use disorder (e.g. work or family problems related to opioid use, difficulty controlling use)
- experiences overdose or other serious adverse event
- shows early warning signs for overdose risk such as confusion, sedation, or slurred speech

\*morphine milligram equivalents

# HOW TO TAPER

Tapering plans should be individualized and should minimize symptoms of opioid withdrawal while maximizing pain treatment with nonpharmacologic therapies and nonopioid medications. In general:

## Go Slow



A decrease of 10% of the original dose per week is a reasonable starting point. Some patients who have taken opioids for a long time might find even slower tapers (e.g., 10% per month) easier.

*Discuss the increased risk for overdose if patients quickly return to a previously prescribed higher dose.*

## Consult



Coordinate with specialists and treatment experts as needed—especially for patients at high risk of harm such as pregnant women or patients with an opioid use disorder.

*Use extra caution during pregnancy due to possible risk to the pregnant patient and to the fetus if the patient goes into withdrawal.*

## Support



Make sure patients receive appropriate psychosocial support. If needed, work with mental health providers, arrange for treatment of opioid use disorder, and offer naloxone for overdose prevention.

*Watch for signs of anxiety, depression, and opioid use disorder during the taper and offer support or referral as needed.*

## Encourage

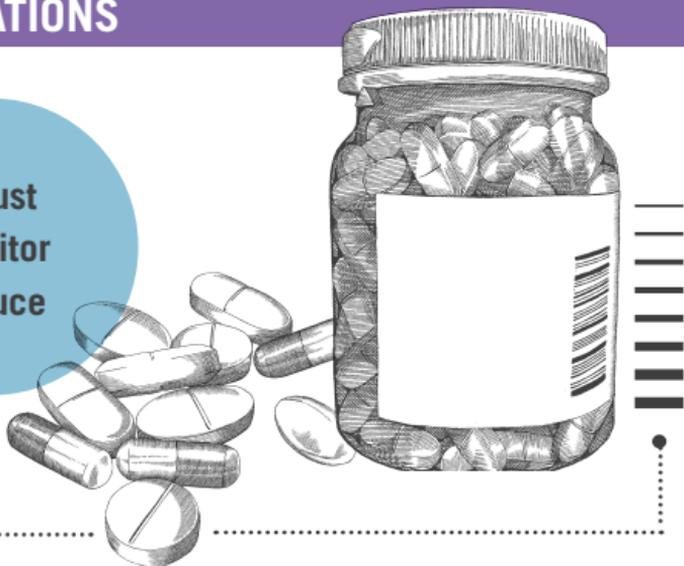


Let patients know that most people have improved function without worse pain after tapering opioids. Some patients even have improved pain after a taper, even though pain might briefly get worse at first.

*Tell patients “I know you can do this” or “I’ll stick by you through this.”*

# CONSIDERATIONS

**Adjust**  
**Monitor**  
**Reduce**



- 1 Adjust the rate and duration of the taper according to the patient's response.
- 2 Don't reverse the taper; however, the rate may be slowed or paused while monitoring and managing withdrawal symptoms.
- 3 Once the smallest available dose is reached, the interval between doses can be extended and opioids may be stopped when taken less than once a day.

## RESOURCES:

**CDC Guideline for Prescribing Opioids for Chronic Pain**

[www.cdc.gov/drugoverdose/prescribing/guideline.html](http://www.cdc.gov/drugoverdose/prescribing/guideline.html)

**Washington State Opioid Taper Plan Calculator**

[www.agencymeddirectors.wa.gov/Files/2015AMDGOpoidGuideline.pdf](http://www.agencymeddirectors.wa.gov/Files/2015AMDGOpoidGuideline.pdf)

**Tapering Long-Term Opioid Therapy in Chronic Noncancer Pain**

[www.mayoclinicproceedings.org/article/S0025-6196\(15\)00303-1/fulltext](http://www.mayoclinicproceedings.org/article/S0025-6196(15)00303-1/fulltext)



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[www.cdc.gov/drugoverdose](http://www.cdc.gov/drugoverdose)

# What You Need to Know About Opioid Pain Medicines

***This guide is for you!*** Keep this guide and the Medication Guide that comes with your medicine so you can better understand what you need to know about your opioid pain medicine. Go over this information with your healthcare provider. Then, ask your healthcare provider about anything that you do not understand.

## What are opioids?

Opioids are strong prescription medicines that are used to manage severe pain.

## What are the serious risks of using opioids?

- Opioids have serious risks of addiction and overdose.
- **Too much opioid medicine in your body can cause your breathing to stop – which could lead to death.** This risk is greater for people taking other medicines that make you feel sleepy or people with sleep apnea.
- **Addiction** is when you crave drugs (like opioid pain medicines) because they make you feel good in some way. You keep taking the drug even though you know it is not a good idea and bad things are happening to you. Addiction is a brain disease that may require ongoing treatment.

### Risk Factors for Opioid Abuse:

- You have:
    - » a history of addiction
    - » a family history of addiction
  - You take medicines to treat mental health problems
  - You are under the age of 65 (although anyone can abuse opioid medicines)
- **You can get addicted to opioids even though you take them exactly as prescribed, especially if taken for a long time.**
- If you think you might be addicted, talk to your healthcare provider right away.
  - If you take an opioid medicine for more than a few days, your body becomes physically “dependent.” This is normal and it means your body has gotten used to the medicine. You must taper off the opioid medicine (slowly take less medicine) when you no longer need it to avoid withdrawal symptoms.

## How can I take opioid pain medicine safely?

- Tell your healthcare provider about **all** the medicines you are taking, including vitamins, herbal supplements, and other over-the-counter medicines.
- Read the Medication Guide that comes with your prescription.

- Take your opioid medicine exactly as prescribed.
- Do not cut, break, chew, crush, or dissolve your medicine. If you cannot swallow your medicine whole, talk to your healthcare provider.
- When your healthcare provider gives you the prescription, ask:
  - » How long should I take it?
  - » What should I do if I need to taper off the opioid medicine (slowly take less medicine)?
- Call your healthcare provider if the opioid medicine is not controlling your pain. Do not increase the dose on your own.
- **Do not share or give your opioid medicine to anyone else.** Your healthcare provider selected this opioid and the dose just for **you**. A dose that is okay for you could cause an overdose and death for someone else. Also, it is against the law.
  - Store your opioid medicine in a safe place where it cannot be reached by children or stolen by family or visitors to your home. Many teenagers like to experiment with pain medicines. Use a lock-box to keep your opioid medicine safe. Keep track of the amount of medicine you have.
- Do not operate heavy machinery until you know how your opioid medicine affects you. Your opioid medicine can make you sleepy, dizzy, or lightheaded.



## What should I avoid taking while I am taking opioids?

Unless prescribed by your healthcare provider, you should avoid taking alcohol or any of the following medicines with an opioid because it may cause you to stop breathing, which can lead to death:

- Alcohol: Do not drink any kind of alcohol while you are taking opioid medicines.
- Benzodiazepines (like Valium or Xanax)
- Muscle relaxants (like Soma or Flexeril)
- Sleep medicines (like Ambien or Lunesta)
- Other prescription opioid medicines

**What other options are there to help with my pain?**

Opioids are not the only thing that can help you control your pain. Ask your healthcare provider if your pain might be helped with a non-opioid medication, physical therapy, exercise, rest, acupuncture, types of behavioral therapy, or patient self-help techniques.

**What is naloxone?**

- Naloxone is a medicine that treats opioid overdose. It is sprayed inside your nose or injected into your body.
- Use naloxone if you have it and call 911 or go to the emergency room right away if:
  - You or someone else has taken an opioid medicine and is having trouble breathing, is short of breath, or is unusually sleepy
  - A child has accidentally taken the opioid medicine or you think they might have
- Giving naloxone to a person, even a child, who has not taken an opioid medicine will not hurt them.

**Naloxone is never a substitute for emergency medical care. Always call 911 or go to the emergency room if you've used or given naloxone.**

**Where can I get naloxone?**

- There are some naloxone products that are designed for people to use in their home.
- Naloxone is available in pharmacies. Ask your healthcare provider about how you can get naloxone. In some states, you may not need a prescription.
- When you get your naloxone from the pharmacy, read the Patient Information on how to use naloxone and ask the pharmacist if anything is unclear.
- Tell your family about your naloxone and keep it in a place where you or your family can get to it in an emergency.

**When you no longer need your opioid medicine, dispose of it as quickly as possible. The Food and Drug Administration recommends that most opioid medicines be promptly flushed down the toilet when no longer needed, unless a drug take-back option is immediately available. A list of the opioid medicines that can be flushed down the toilet is found here: <https://www.fda.gov/drugdisposal>**

**What things should I know about the specific opioid medicine that I am taking?**

- Your healthcare provider has prescribed \_\_\_\_\_ for you. Read the Medication Guide for this medicine, which is information provided by your pharmacy.
- Remember this other important information about your opioid medicine:

**Dosing instructions:** \_\_\_\_\_

**Any specific interactions with your medicines:** \_\_\_\_\_

**What if I have more questions?**

- Read the Medication Guide that comes with your opioid medicine prescription for more specific information about your medicine.
- Talk to your healthcare provider or pharmacist and ask them any questions you may have.
- Visit: [www.fda.gov/opioids](http://www.fda.gov/opioids) for more information about opioid medicines.