PainWeek®

On Golden Pond: Geriatric Pain Management

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PAIN POD

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Disclosures

- Expert Witness: Cardinal Health
- Consulting Fees/Advisory Board: HealthXL, Speranza

This presentation was not a part of the presenter's official duties at the WVU and does not represent the opinion of WVU

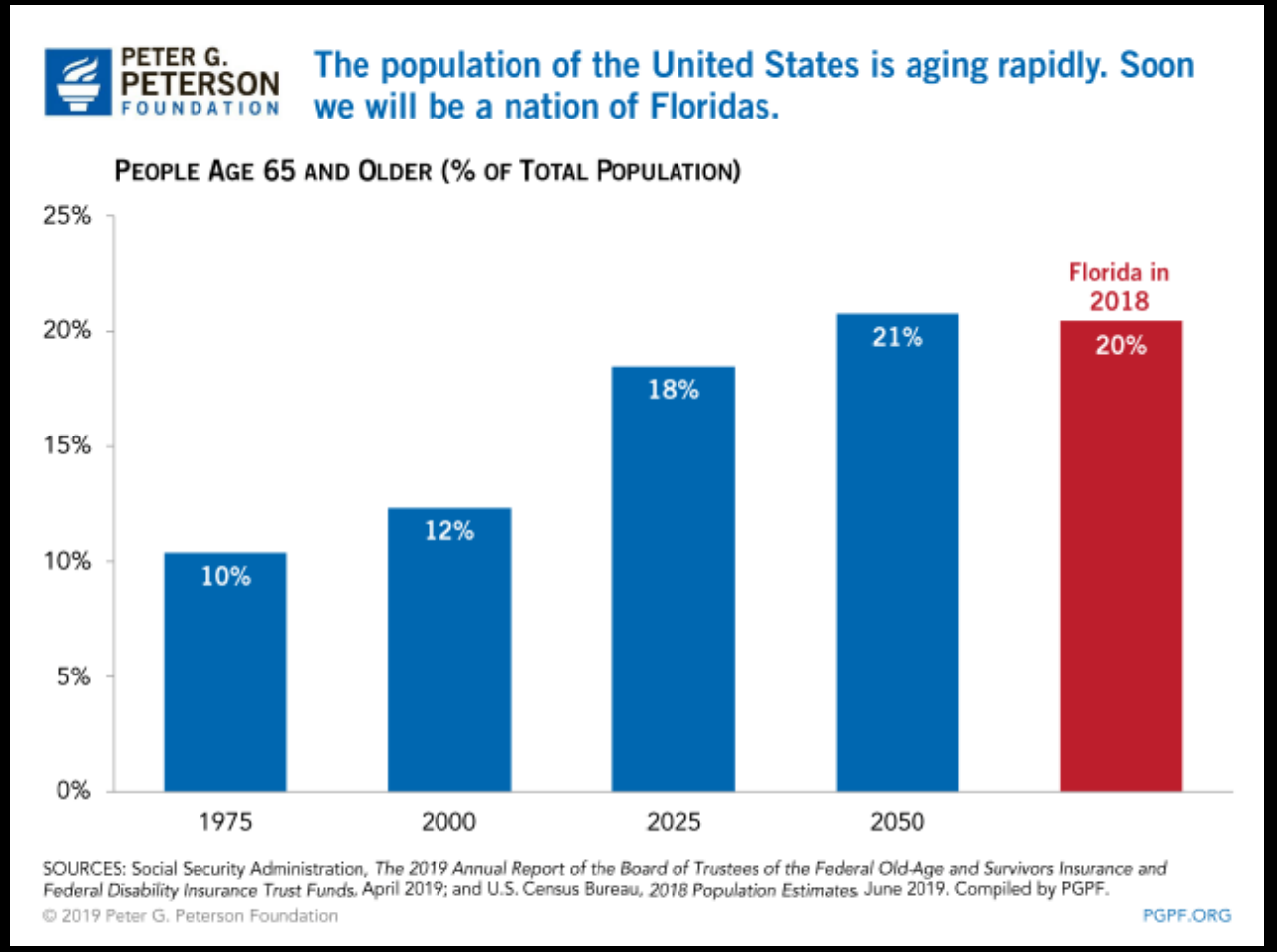
Opinions…

I have personal and professional opinions on pain management. However, some things are better left NSAID.

Learning Objectives

- Restate common anatomical and physiological changes alter medication pharmacodynamics and pharmacokinetics in older adults
- Identify pain management medications that are considered to be potentially inappropriate if used in older adults based on the 2019 AGS Beers List
- Recognize potentially inappropriate drug-drug interactions that should be avoided in older adults based on the 2019 AGS Beers List

Hopefully, We'll all be Geriatric Patients if not already!

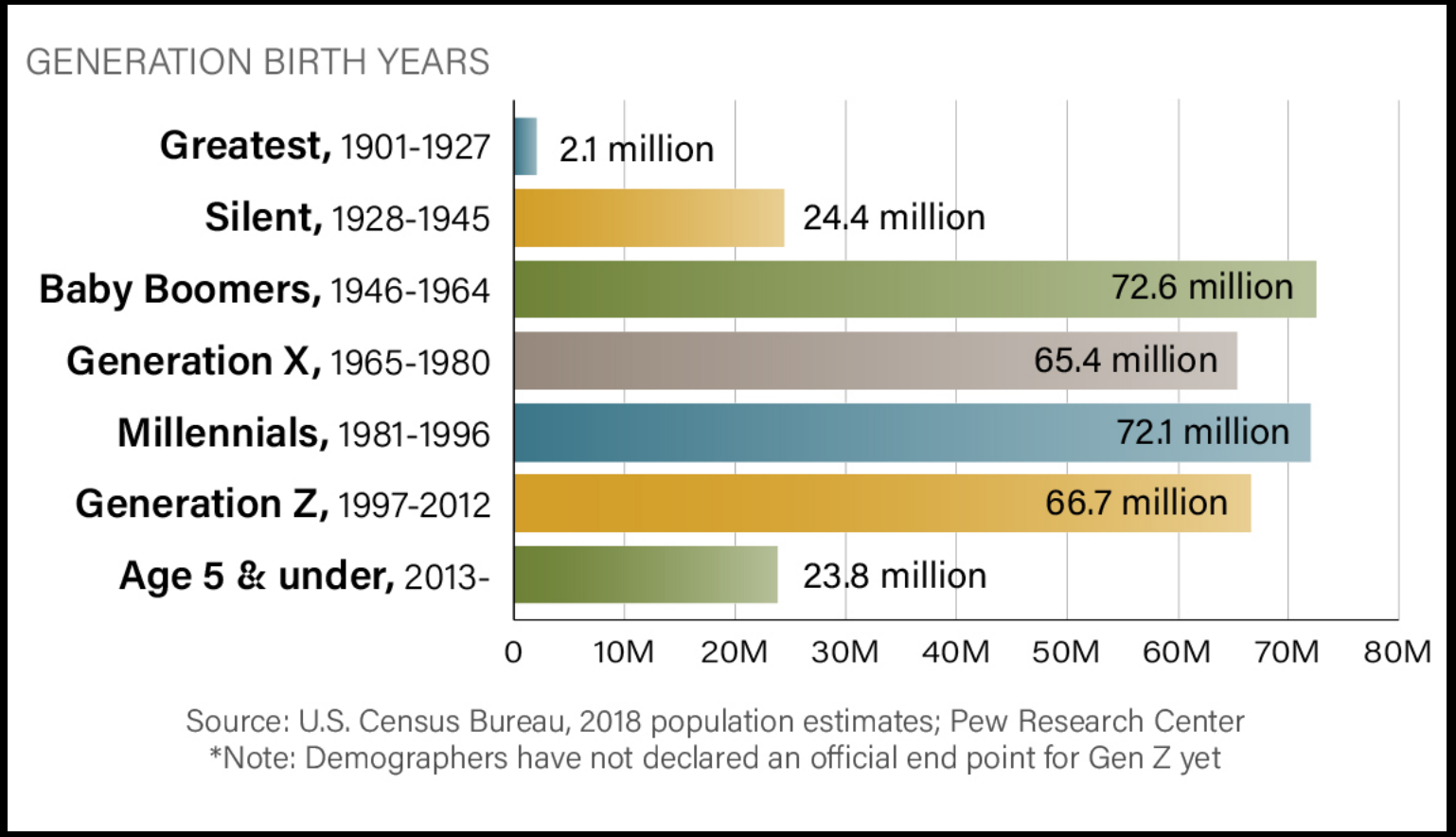


https://www.pgpf.org/chart-archive/0050_aging-US-population

How Many Centurions will be alive in 2100?

- Roman Centurions
  - Professional Officers
- People living to be 100yo

Generational Differences



https://www.aarp.org/work/working-at-50-plus/info-2019/gen-x-missing-job-promotions.html

Generational Differences

Generation	~Birth Year	Personalities	Preferred Coaching	Descriptions
GI/Silent	1900-1945	Respect, Loyalty, & Order	No news is good news	• Conservative, Clear Gender Roles • Like Work, but don't live to work • Key Reward: "Satisfaction of a job well done"
Baby Boomers	1946-1964	Optimism Reject Authority	Once a year, needed or not	• Grew up in nuclear families, unlike their own • Team Players and workaholics • Do NOT want to be continually "connected" • Key Rewards are "Money, title, & recognition"
Generation X	1965-1980	Skeptical Don't Value Loyalty	Reject micromanaging "So How am I Doing?"	• Grew up in single parent or dual earner families • Independent and question the establishment • Key Reward: "Freedom and time"
Millennials (Generation Y)	1981-1995	Respectful Confident	Engaging Immediate Feedback	• "Trophy Kids" with "Helicopter Parents" • Do NOT respect chain of commands • Key Reward: "Meaningful work"
Generation Z	1996-2011	Empowering	Collaboration	• Raised on the internet • Comfortable with social media • Now graduating college and entering workforce
Generation Alpha	2012-Present	Inspiring	Co-Creation	• Greek alphabet "alpha" • First born entirely in 21st Century • Adulthood in 2030's when population is 9 Billion

http://www.kenan-flagler.unc.edu/executive-development/custom-programs/~/media/DF1C11C056874DDA8097271A1ED48662.ashx

Aging Anatomy & Physiology

Cardiovascular

- Heart wall thickens
- HR decreases
- Systolic BP increases

Pulmonary

- Chest wall thickens
- Central airways widen
  - Decreased pulmonary Flow

Central Nervous System (CNS)

- Brain size decreases
- Serotonin system changes
- Blood-Brain-Barrier thins

http://www.merckmanuals.com/professional/geriatrics.html

Aging Anatomy & Physiology

Endocrine

- Kidney size decreases
- GFR decreases
- Renin activity decreases
    - Less Na retained
- Hormone receptors decrease
- Glucose tolerance decreases
- Sweat less, thus body overheats easier

Hepatic System

- Liver mass decreases
- CYP3A4 function decreases

http://www.merckmanuals.com/professional/geriatrics.html

Aging Anatomy & Physiology

- Immune System
  - Entire immune system function decreases
- Gastrointestinal
  - Stomach lining/secretion/gastric emptying frequency decreases
  - Stomach pH/gastric emptying time duration increases
  - Colon nutritional absorption decreases
- Overall Body
  - Body water/muscle ratio decreases
  - Body fat increases
  - Hearing and vision decrease

http://www.merckmanuals.com/professional/geriatrics.html

Geriatric PK & PD
Pain Management Related

- Pharmacodynamics (PD)
  - Elderly body has an increased risk of side effects for these medications:
    - Opioids (CNS effects)
    - Antipsychotics (extrapyramidal effects and tardive dyskinesia)
    - Tricyclic antidepressants (orthostatic hypotension)
    - NSAIDs (GI bleeding)

- Pharmacokinetics (PK)
  - Aging produces reduced CYP450 2D6 & 3A4 Metabolism
  - Aging produces reduced first pass metabolism of morphine

Clinical Pharmacology Online Database. 2020.

Medication Utilization in the Elderly Population

- Elderly women are observed to take more medications than elderly men
- Medication use is greatest among the frail elderly, hospitalized patients, and nursing home residents
  - A typical nursing home resident is given 7 to 8 drugs on a regular basis.

Unique Medications	% of Geriatric Population
1	90%
5	40%
10	12%

http://www.merckmanuals.com/professional/geriatrics.html

Geriatric Medication Toolbelt

Medication Selection & Utilization Tools for Patients >/= 65yo	
AGS Beers	American Geriatrics Society Beers List
STOPP	Screening Tool of Older Peoples Prescriptions
START	Screening Tool to Alert to Right Treatment
FORTA	Fit fOR The Aged
MAI	Medication Appropriateness Index
ADS	Anticholinergic Drug Scale
ACB	Anticholinergic Cognitive Burden Scale
ARS	Anticholinergic Risk Scale

Beers List

https://www.tapatalk.com/groups/tinnitussupport92262/shoggoth-s-old-peculiar-beer-wine-talk-t25032.html

American Geriatrics Society (AGS) Beers List

CLINICAL INVESTIGATION

American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults

*By the 2019 American Geriatrics Society Beers Criteria® Update Expert Panel**

From the *American Geriatrics Society, New York, New York.

Address correspondence to Mary Jordan Samuel, American Geriatrics Society, 40 Fulton St, 18th Floor, New York, NY 10038.
E-mail: mjsamuel@americangeriatrics.org

See related editorial by Michael Steinman et al.

DOI: 10.1111/jgs.15767

American Geriatric Society Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. Journal of the American Geriatric Society. 00:1–21, 2019.

Dr. Mark Beers List

Year	Descriptions
1991	• Original guideline of medications to avoid in the elderly
1997	• Clarified medications to avoid, doses/frequencies to avoid, and medications to avoid in patients with specific conditions
2003	• Avoid because of ineffectiveness, or high risk with safer alternative available • Further clarified medications to avoid in specific medical conditions
2012	• Updated Review Criteria basis: Quality & Strength of evidence
2015	• New categories of recommendations including Renal Adjustments & Drug-Drug Interactions
2019	• 13 Experts reviewed 1,400 articles from 2015-2017 for updated clinical information

American Geriatric Society Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. Journal of the American Geriatric Society. 00:1–21, 2019.

2019 AGS Beers List (10 Tables)

Table	Descriptions
1	Designations Of Quality Of Evidence And Strength Of Recommendations Quality: Low, Moderate, Or High Strength: Weak Or Strong
2 (5 Pages)	Potentially Inappropriate Medication Use In Older Adults (PIMs)
3 (3 Pages)	Potentially Inappropriate Medication Use In Older Adults (PIMs) Due To Drug-disease Or Drug-syndrome Interactions That May Exacerbate The Disease/Syndrome
4	Potentially Inappropriate Medication: Drugs To Be Used With Caution In Older Adults
5	Potentially Inappropriate Drug-Drug Interactions That Should Be Avoided In Older Adults
6	Medications That Should Be Avoided or Have Dosage Reduced With Varying Levels of Kidney Function in Older Adults
7	Drugs With Strong Anticholinergic Properties
8	Medications/Criteria Removed Since 2015 AGS Beers List
9	Medications/Criteria Added Since 2015 AGS Beers List
10	Medications/Criteria Modified Since 2015 AGS Beers List

American Geriatric Society Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. Journal of the American Geriatric Society. 00:1–21, 2019.

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Potentially Inappropriate Medications (PIMs) for Older Adults Pain Management Related

Drug Class	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)	Alternative(s)
1st Generation Antihistamines • Diphenhydramine, Doxylamine, Meclizine, Promethazine, etc.	• Anticholinergic • Clearance reduced with advanced age • Increased risk of confusion, dry mouth, constipation, etc.	Avoid	Moderate	Strong	2nd Generation Antihistamines, sleep hygiene, etc.
TCAs • Amitriptyline, nortriptyline, desipramine, doxepin (>6mg/day), imipramine, clomipramine, etc.	• Anticholinergic • Increases risk of sedation, orthostatic hypotension, or bradycardia	Avoid	High	Strong	SSRI, SNRI, bupropion, melatonin, sleep hygiene, trazodone, topical capsaicin, topical lidocaine

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Potentially Inappropriate Medications (PIMs) for Older Adults Pain Management Related

Drug Class	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)	Alternative(s)
Benzos • Short, Intermediate, & Long Acting	• Increased benzo sensitivity • Slower metabolism of long-acting benzos • Increased risk of sedation, falls/fractures, & vehicle crashes	Avoid	Moderate	Strong	• SSRI, SNRI, bupropion, melatonin, trazodone, sleep hygiene, etc. • If absolutely needed, utilize triazolam (short-acting PO)
Z-Hypnotics	• Increased risk of sedation, falls/fractures, ER/hospitalizations, & vehicle crashes • Minimal improvement in sleep latency and duration.	Avoid	Moderate	Strong	• Trazodone, melatonin, sleep hygiene

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Potentially Inappropriate Medications (PIMs) for Older Adults Pain Management Related

Drug Class	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)	Alternative(s)
Meperidine	• Not effective oral analgesic in dosages commonly used • Risk of neurotoxicity Exceeds Benefit relative to other opioids	Avoid	Moderate	Strong	COX-2 Selective NSAIDs, APAP, morphine, hydrocodone, etc.
"Muscle Relaxants" (Spasmodics)	• Most muscle relaxants poorly tolerated by older adults because of anticholinergic adverse effects, sedation, risk of fracture • Effectiveness at dosages tolerated by older adults is questionable	Assess spasticity versus spasms	Moderate	Strong	• Differentiate spasticity vs. spasms • Antispasticity Agents still require monitoring (baclofen & tizanidine)
COX-1 Selective NSAIDs	• Increased of GI bleed in high risk groups (>75yo w/ corticosteroid, anticoagulant, or antiplatelet medication) • Can increase blood pressure • Can increase risk of kidney injury	Avoid Chronic Use (Unless alternatives fail +/- Miso/PPI to reduce risk)	Moderate	Strong	• Acetaminophen • Topical lidocaine • Topical capsaicin • Non-Pharm

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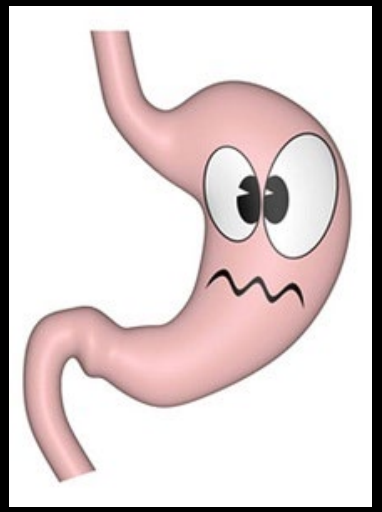
COX-1 & COX-2

COX-1 Selective



COX-2 Selective

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Feldman M & McMahon A. Do Cyclooxygenase-2 Inhibitors Provide Benefits Similar to Those of Traditional Nonsteroidal Anti-Inflammatory Drugs, with Less Gastrointestinal Toxicity? Ann Intern Med. 2000;132:134-143.

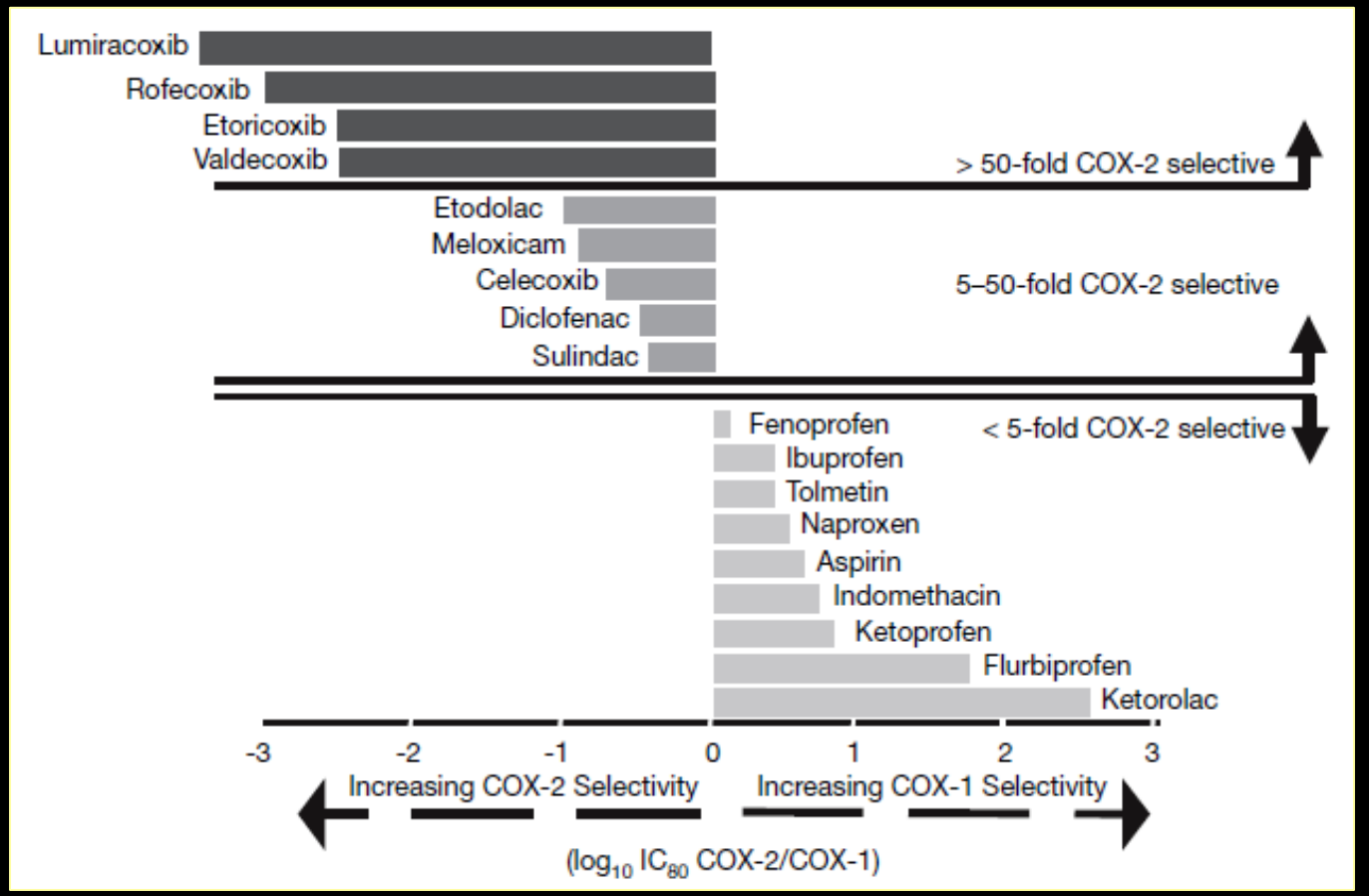
COX-1 : COX-2

NSAID	COX-1 to COX-2 Ratio
Flurbiprofen	10.27
Ketoprofen	8.16
Fenoprofen	5.14
Tolmetin	3.93
Aspirin	3.12
Oxaprozin	2.52
Naproxen	1.79
Indomethacin	1.78
Ibuprofen	1.69
Ketorolac	1.64

NSAID	COX-1 to COX-2 Ratio
Piroxicam	0.79
Nabumetone	0.64
Etodolac	0.11
Celecoxib	0.11
Meloxicam	0.09
Mefenamic acid	0.08
Diclofenac	0.05
Rofecoxib	0.05

Feldman, M, et al. Do Cyclooxygenase-2 Inhibitors Provide Benefits Similar to Those of Traditional Nonsteroidal Anti-Inflammatory Drugs, with Less Gastrointestinal Toxicity. Ann Intern Med. 2000; 132: 134-143.

COX-2 : COX-1



PAINWEEK

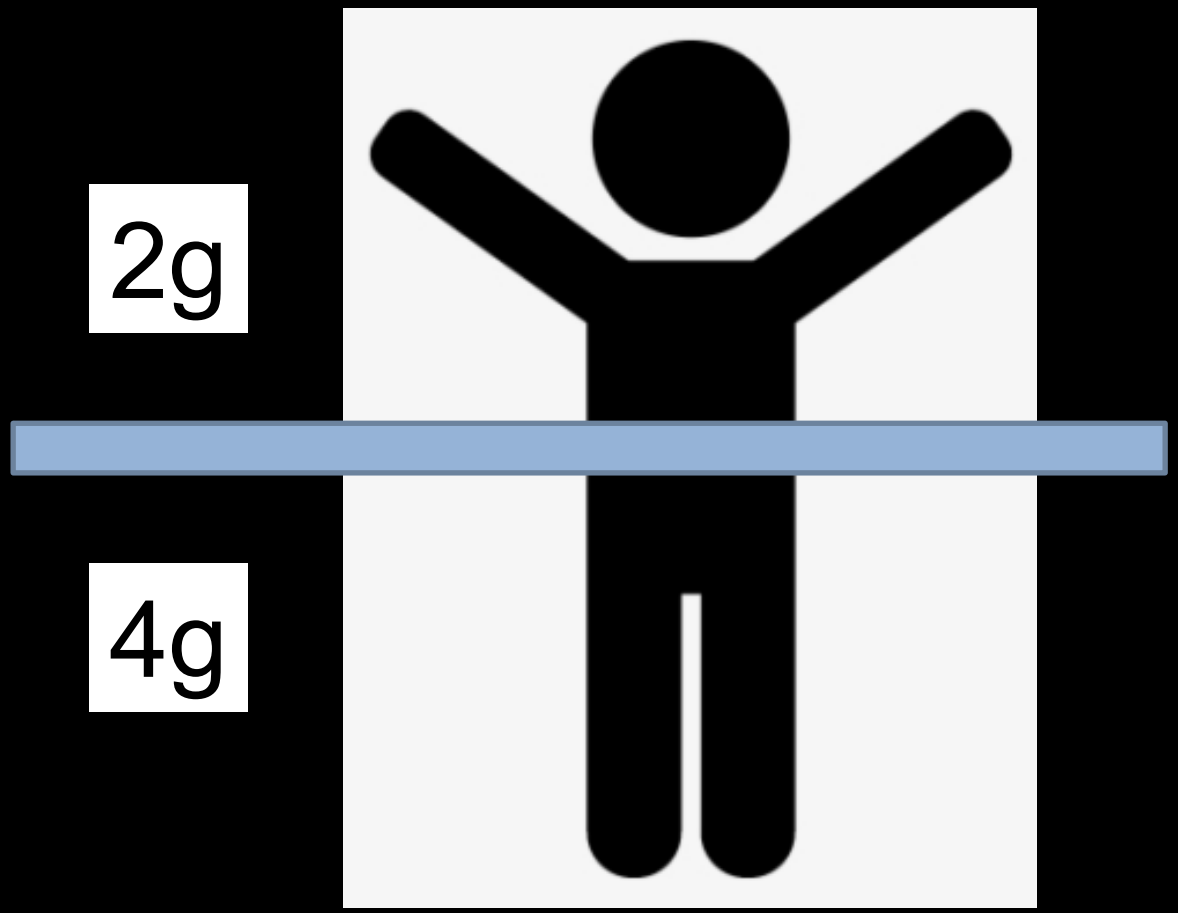
Herndon, C. et al. Management of Chronic Nonmalignant Pain with Nonsteroidal Anti-inflammatory Drugs. Pharmacotherapy. 2008; 28 (6): 788-805.

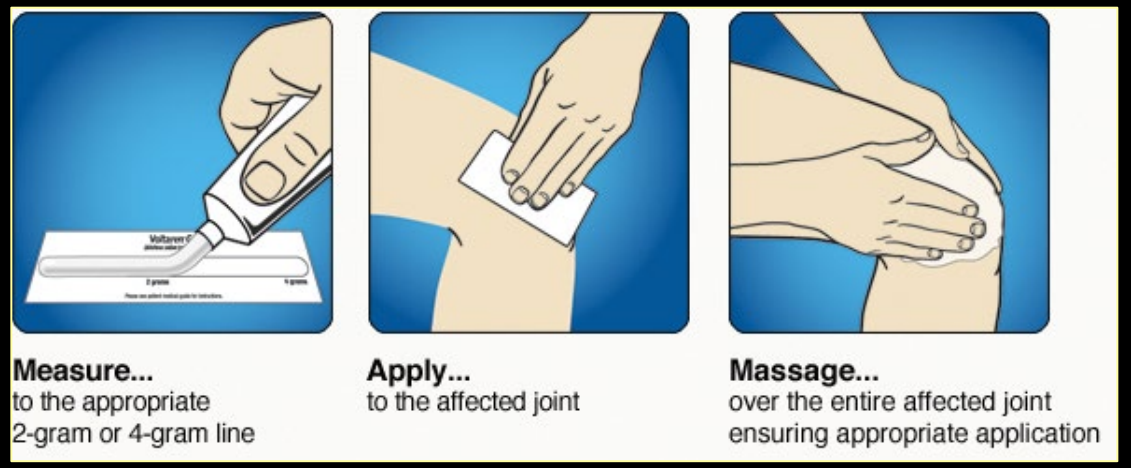
Topical Diclofenac

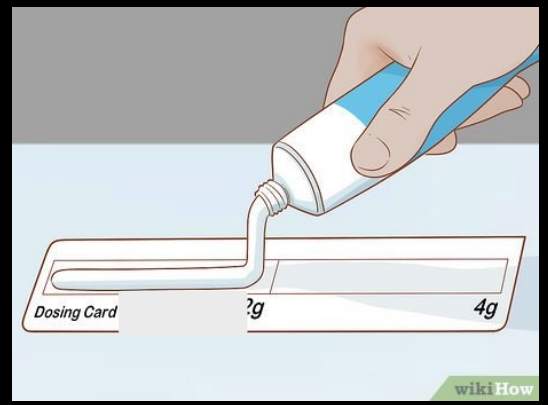
- 2007: FDA Approved Rx
- 2020: FDA Approved OTC (Valentine's Day)
- May take up to 7 days for efficacy
- Intended for osteoarthritis joint pain
  - Hands, Knees, & Feet
- Not shown to be effective for strains, sprains, bruises, or sports injuries

https://www.accessdata.fda.gov/drugsatfda_docs/label/2009/022122s006lbl.pdf

Topical Diclofenac







PAINWEEK

https://www.accessdata.fda.gov/drugsatfda_docs/label/2009/022122s006lbl.pdf

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Elderly PIMs Due to Drug-Disease/Syndrome Interactions Pain Management Related

Disease Or Syndrome	Drug Class	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)
Heart Failure	COX-2 Selective NSAIDs	Potential to promote fluid retention and/or exacerbate HF	• Avoid in patients with symptomatic HF • Use with caution for Asymptomatic HF	Moderate	Strong
Syncope	Tertiary TCAs • Amitriptyline, doxepin, imipramine, clomipramine, & trimipramine	Increased risk of orthostatic hypotension or bradycardia	• Avoid • If TCA must be utilize, prefer Secondary • Nortriptyline or desipramine	High	Strong

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Elderly PIMs Due to Drug-Disease/Syndrome Interactions Pain Management Related

Disease Or Syndrome	Drug Class	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)
Delirium	Anticholinergics, Antipsychotics, Benzos, Z-Hypnotics, Corticosteroids, H2 Blockers, & meperidine	Potential to induce/worsen delirium	Avoid	Moderate (H2 Blockers, Low)	Strong
Dementia or Cognitive Impairment	Anticholinergics, Benzos, & Z-Hypnotics	CNS Side Effects	Avoid	Moderate	Strong
Falls/Fractures History	Benzos, AEDs, Antipsychotics, Z-Hypnotics, TCAs, SNRIs, SSRIs, & Opioids	• May cause ataxia, syncope, & falls • Shorter acting benzos not safer than long acting	• Avoid unless safer alternatives are not available • Opioids only for severe acute pain • Antidepressants mixed data, but none shown to cause less falls relatively	Moderate	Strong

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Disease Or Syndrome	Drug Class	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)
GI Ulcer History	• Aspirin doses > 325mg/day • COX-1 Selective NSAID	May exacerbate current ulcers or precipitate new ulcers	• Avoid unless other alternatives are not effective & patient is able to utilize PPI/miso	Moderate	Strong
Chronic Kidney Disease Stage >/= 4 (CrCl < 30mL/min)	All NSAIDs	May increase risk of acute kidney injury and further decline of renal function	• Avoid	Moderate	Strong

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Medications to be Used with Caution with Older Adults Pain Management Related

Drug	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)
Aspirin (Cardio-Protection)	• Risk of major bleeding increases markedly in older age. • Several studies suggest lack of net benefit when used for PP in older adults with CV risk factors, but evidence is not conclusive. • Generally indicated for secondary prevention in older adults with established CVD	• Use with caution in patients >/= 70yo	Moderate	Strong
Antipsychotics, carbamazepine, SNRIs, SSRIs, TCAs, diuretics, & tramadol	• May exacerbate or cause SIADH or hyponatremia	• Use with caution • Monitor sodium closely when starting or changing dosages in older adults	Moderate	Strong

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Elderly PIMs Due to Drug-Drug Interactions Pain Management Related

Drug Class	Interacting Drug	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)
Corticosteroids	NSAIDs	Increased risk of PUD or GI bleed	• Avoid • If avoidance not possible, utilize PPI/miso	Moderate	Strong
Warfarin	NSAIDs	Increased risk of bleeding	• Avoid • If avoidance not possible, monitor closely for bleeding	High	Strong

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Elderly PIMs Due to Drug-Drug Interactions Pain Management Related

Drug Class	Interacting Drug	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)
Opioids	Benzos & Gabapentinoids	Increased risk of severe sedation, respiratory depression/death	• Avoid • Rare exception when converting from opiate to gabapentin	Moderate	Strong
Antidepressants, Antipsychotics, AEDs, Z-Hypnotics, Benzos, & Opioids	Any combination	Increased risk of falls and fractures	• Avoid total of 3 or more CNS active drugs • Minimize CNS active drugs	High	Strong

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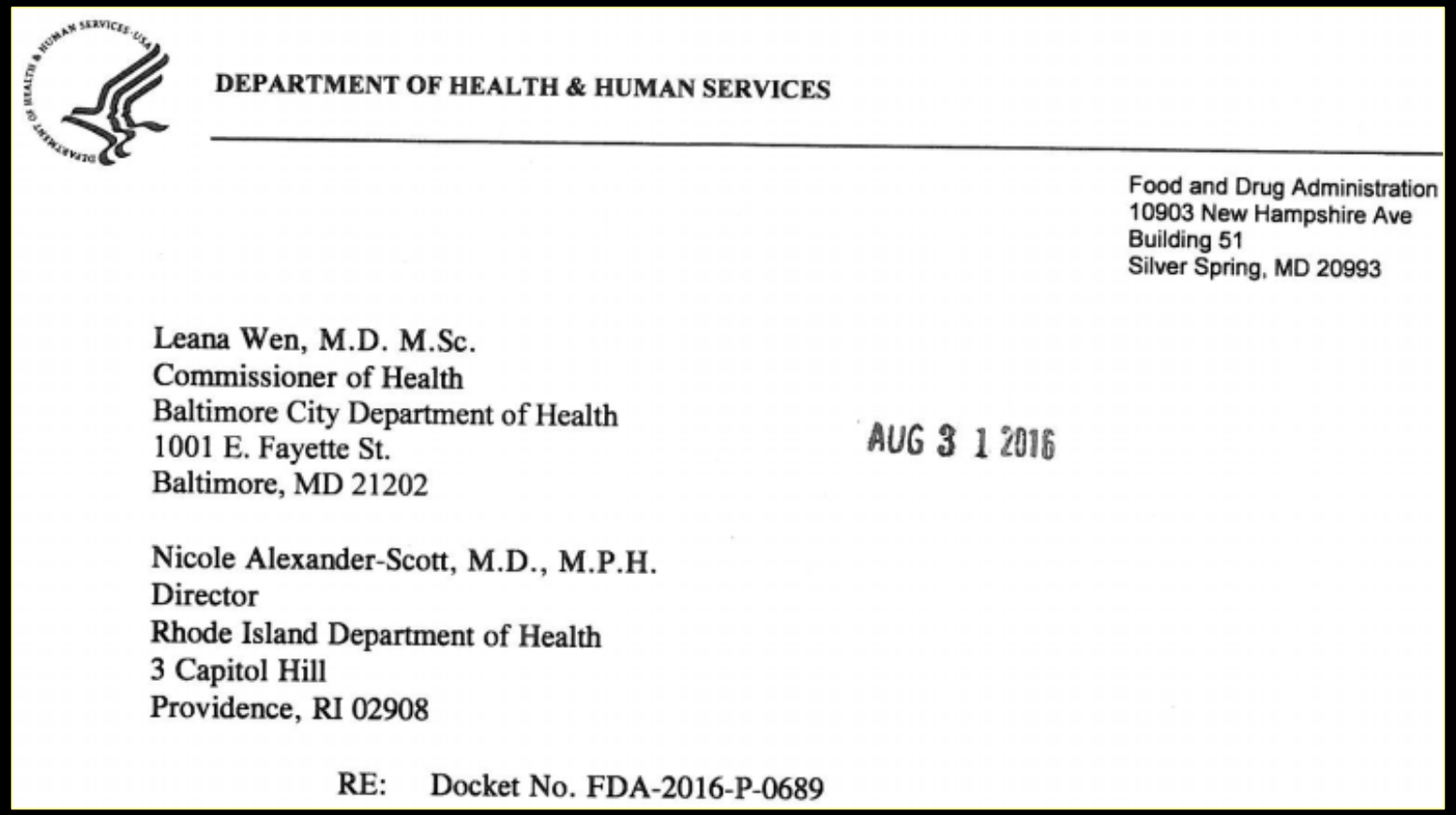
Pain Management Drug Interactions
Opioids & Benzos (Black Box Warnings)



DEPARTMENT OF HEALTH & HUMAN SERVICES

Food and Drug Administration
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Silver Spring, MD 20993

Leana Wen, M.D. M.Sc.
Commissioner of Health
Baltimore City Department of Health
1001 E. Fayette St.
Baltimore, MD 21202

AUG 3 1 2016

Nicole Alexander-Scott, M.D., M.P.H.
Director
Rhode Island Department of Health
3 Capitol Hill
Providence, RI 02908

RE: Docket No. FDA-2016-P-0689

PAINWEEK

https://www.citizen.org/wp-content/uploads/2302a_fda-final-response-to-opioid-and-benzodiazepine-petition_august-31-2016.pdf

Pain Management Drug Interactions
Opioids & Benzos (Black Box Warnings)

WARNING: RISKS FROM CONCOMITANT USE WITH OPIOIDS

Concomitant use of benzodiazepines and opioids may result in profound sedation, respiratory depression, coma, and death *[see Warnings and Precautions (5.X), Drug Interactions (7.X)]*.

- Reserve concomitant prescribing of these drugs for use in patients for whom alternative treatment options are inadequate.
- Limit dosages and duration to the minimum required.
- Follow patients for signs and symptoms of respiratory depression and sedation.

WARNING: RISKS FROM CONCOMITANT USE WITH BENZODIAZEPINES OR OTHER CNS DEPRESSANTS

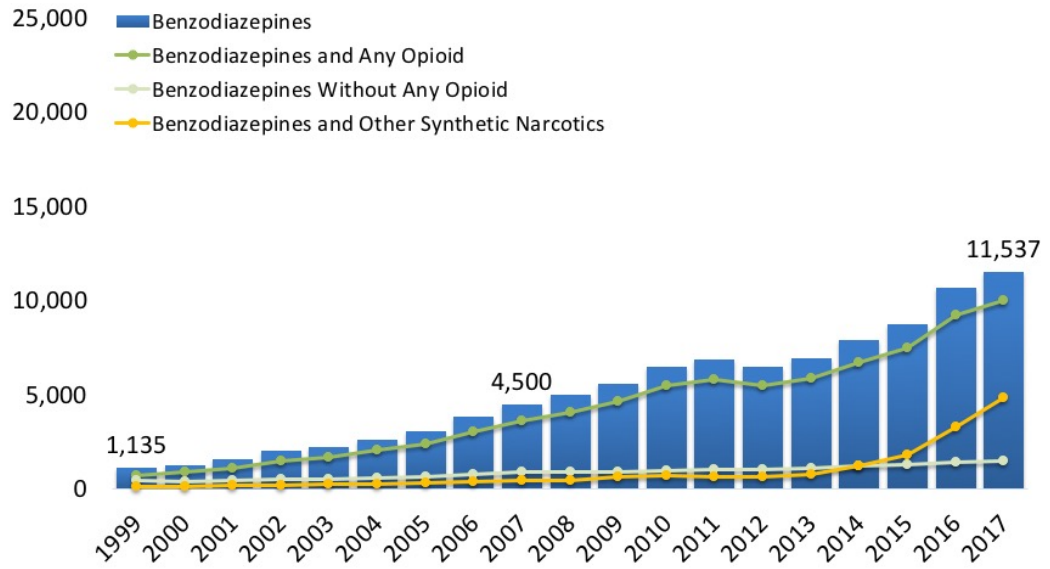
Concomitant use of opioids with benzodiazepines or other central nervous system (CNS) depressants, including alcohol, may result in profound sedation, respiratory depression, coma, and death [see Warnings and Precautions (5.X), Drug Interactions (7.X)].

- Reserve concomitant prescribing of TRADENAME and benzodiazepines or other CNS depressants for use in patients for whom alternative treatment options are inadequate.
- Limit dosages and duration to the minimum required.
- Follow patients for signs and symptoms of respiratory depression and sedation.

https://www.citizen.org/wp-content/uploads/2302a_fda-final-response-to-opioid-and-benzodiazepine-petition_august-31-2016.pdf

Pain Management Drug Interactions Opioids & Benzos (CDC Warnings)

Figure 8. **National Drug Overdose Deaths Involving Benzodiazepines, by Opioid Involvement,** Number Among All Ages, 1999-2017



Source: : Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018

CDC GUIDELINE FOR PRESCRIBING OPIOIDS FOR CHRONIC PAIN

ASSESSING RISK AND ADDRESSING HARMS

11

AVOID CONCURRENT OPIOID AND BENZODIAZEPINE PRESCRIBING

Clinicians should avoid prescribing opioid pain medication and benzodiazepines concurrently whenever possible.

https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates

Pain Management Drug Interactions
Hepatic & Serotonergic

CYP-450 Enzyme	Common Substrates	Common Inhibitors	Common Inducers
1A2	Tizanidine	Major: ciprofloxacin & fluvoxamine	Major: Smoking Minor: rifampin & barbiturates
2D6	codeine, hydrocodone, oxycodone, trazodone, & venlafaxine	cocaine, cimetidine, fluoxetine, paroxetine, & sertraline	*Not Inducible*
3A4	Fentanyl, oxycodone, etc.	grapefruit juice, azoles, clarithromycin, diltiazem, erythromycin, & verapamil	garlic & prednisone
Serotonergic Opioids		meperidine, methadone, & tramadol	

2019 AGS Beers List (Tables)

Table	Descriptions
2 (5 Pages)	Potentially Inappropriate Medication Use In Older Adults (PIMs)
3 (3 Pages)	Potentially Inappropriate Medication Use In Older Adults (PIMs) Due To Drug-disease Or Drug-syndrome Interactions That May Exacerbate The Disease/Syndrome
4	Potentially Inappropriate Medication: Drugs To Be Used With Caution In Older Adults
5	Potentially Inappropriate Drug-Drug Interactions That Should Be Avoided In Older Adults
6	Medications That Should Be Avoided or Have Dosage Reduced With Varying Levels of Kidney Function in Older Adults
7	Drugs With Strong Anticholinergic Properties

American Geriatric Society Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. Journal of the American Geriatric Society. 00:1–21, 2019.

Medications To Avoid/Adjust with Reduced Kidney Function in Older Adults
Pain Management Related

Drug	CrCl Requiring Action	Rationale	Recommendation	Quality of Evidence (Low/Moderate/High)	Strength of Recommendation (Strong/Weak)
Duloxetine	< 30 mL/Min	Increased GI ADEs (N/V & Diarrhea)	Avoid	Moderate	Weak
Gabapentin	< 60 mL/Min	CNS ADEs	Reduce Dose	Moderate	Strong
Levetiracetam	</= 80 mL/Min	CNS ADEs	Reduce Dose	Moderate	Strong
Pregabalin	< 60 mL/Min	CNS ADEs	Reduce Dose	Moderate	Strong
Tramadol	< 30 mL/Min	CNS ADEs	IR: Reduce Dose ER: Avoid	Low	Weak
Colchicine	< 30 mL/Min	GI, Neuromuscular, & Bone Marrow Toxicity	Reduce Dose Monitor ADEs	Moderate	Strong
Probenecid	< 30 mL/Min	Loss of effectiveness	Avoid	Moderate	Strong

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Drugs with Strong Anticholinergic Properties
Pain Management Related

1. **TCA Antidepressants**
2. **1st Generation Antihistamines**
   - Brompheniramine
   - Chlorpheniramine
   - Diphenhydramine
   - Doxylamine
   - Hydroxyzine
   - Meclizine
3. **Antipsychotics**
   - Chlorpromazine
   - Clozapine
   - Olanzapine, etc.
4. **"Muscle Relaxants"**
   - Cyclobenzaprine
   - Orphenadrine

Anticholinergic Medication Scales	
ADS	Anticholinergic Drug Scale
ACB	Anticholinergic Cognitive Burden Scale
ARS	Anticholinergic Risk Scale

American Geriatric Society Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. Journal of the American Geriatric Society. 00:1–21, 2019.

2019 AGS Beers List (10 Tables)

Table	Descriptions
1	Designations Of Quality Of Evidence And Strength Of Recommendations Quality: Low, Moderate, Or High Strength: Weak Or Strong
2 (5 Pages)	Potentially Inappropriate Medication Use In Older Adults (PIMs)
3 (3 Pages)	Potentially Inappropriate Medication Use In Older Adults (PIMs) Due To Drug-disease Or Drug-syndrome Interactions That May Exacerbate The Disease/Syndrome
4	Potentially Inappropriate Medication: Drugs To Be Used With Caution In Older Adults
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6	Medications That Should Be Avoided or Have Dosage Reduced With Varying Levels of Kidney Function in Older Adults
7	Drugs With Strong Anticholinergic Properties
8	Medications/Criteria Removed Since 2015 AGS Beers List
9	Medications/Criteria Added Since 2015 AGS Beers List
10	Medications/Criteria Modified Since 2015 AGS Beers List

American Geriatric Society Update Expert Panel. American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults. Journal of the American Geriatric Society. 00:1–21, 2019.

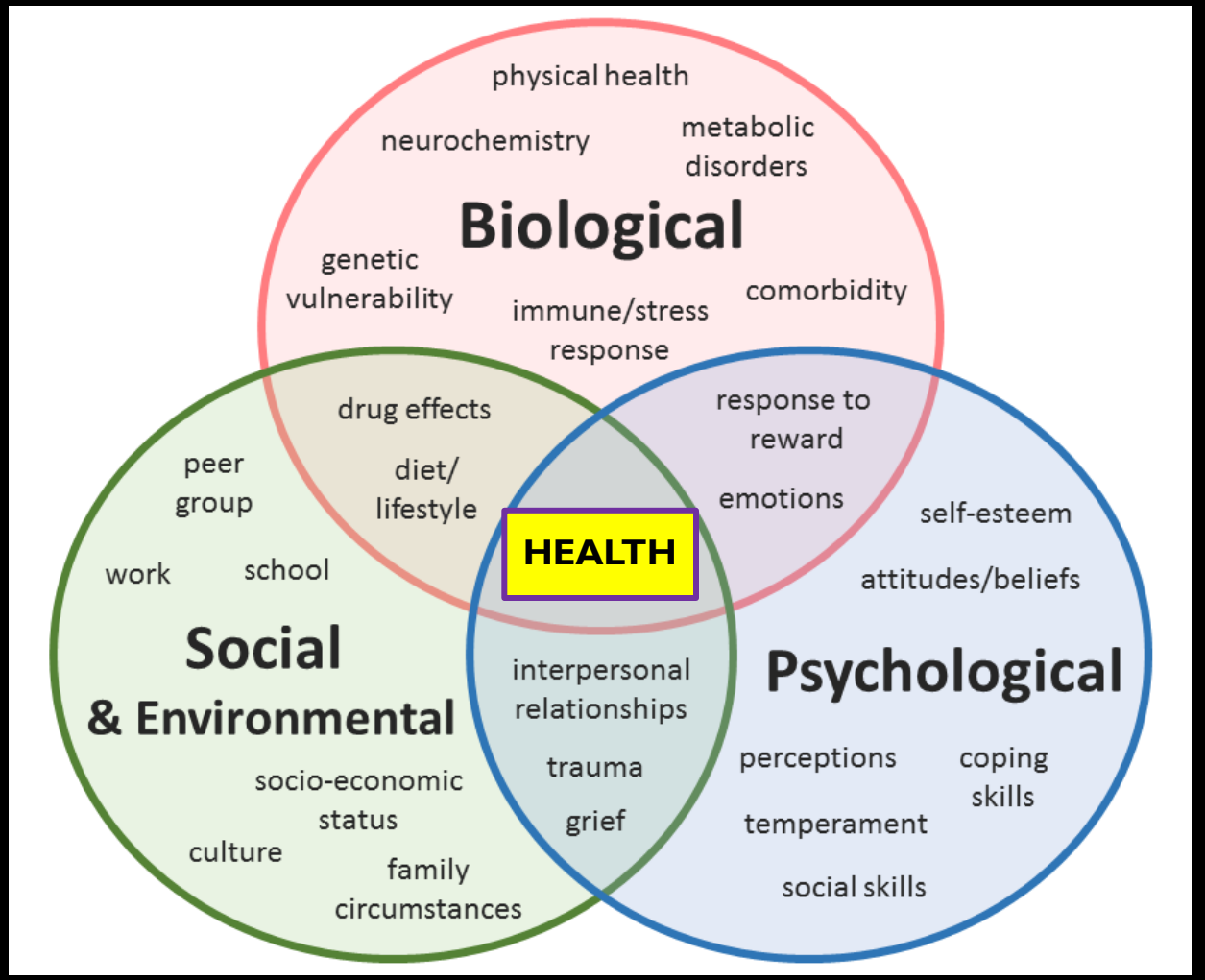

LEFT LANE
CLOSED
1500 FT
RIGHT LANE
CLOSED
1500 FT

If Not Anything, Then Something?

Patient by patient scenarios

- –Clinical judgment
- –Monitoring
- –Documentation

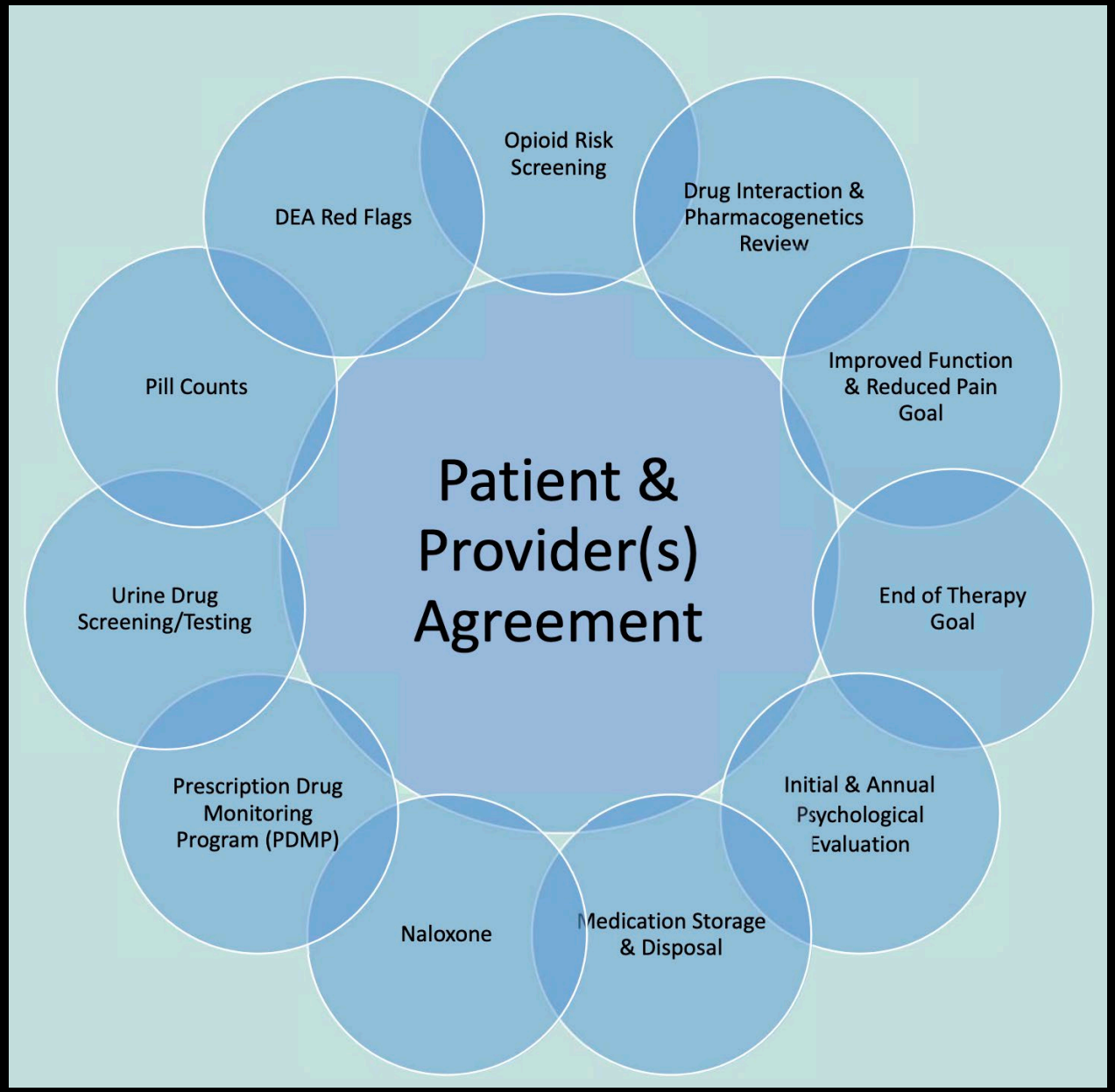
BioPsychoSocial Model of Pain



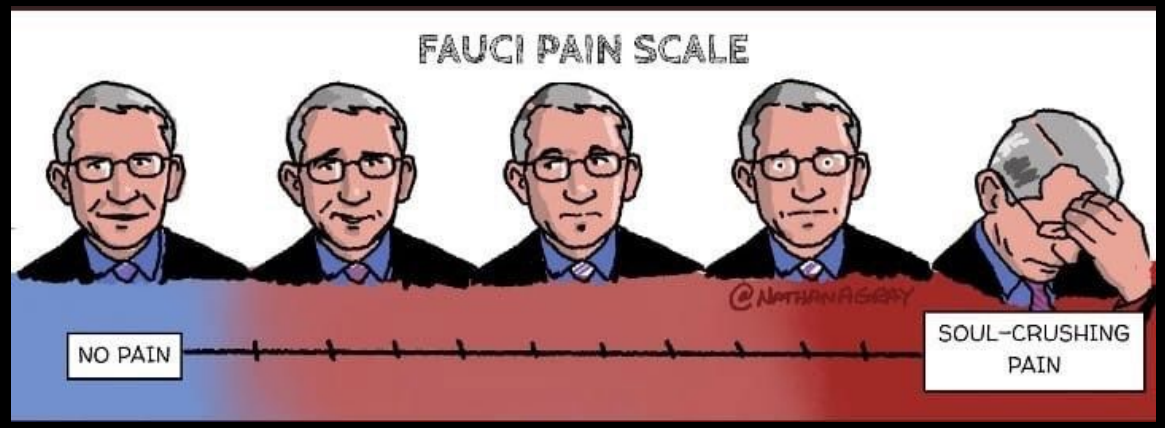
https://www.physio-pedia.com/Biopsychosocial_Model

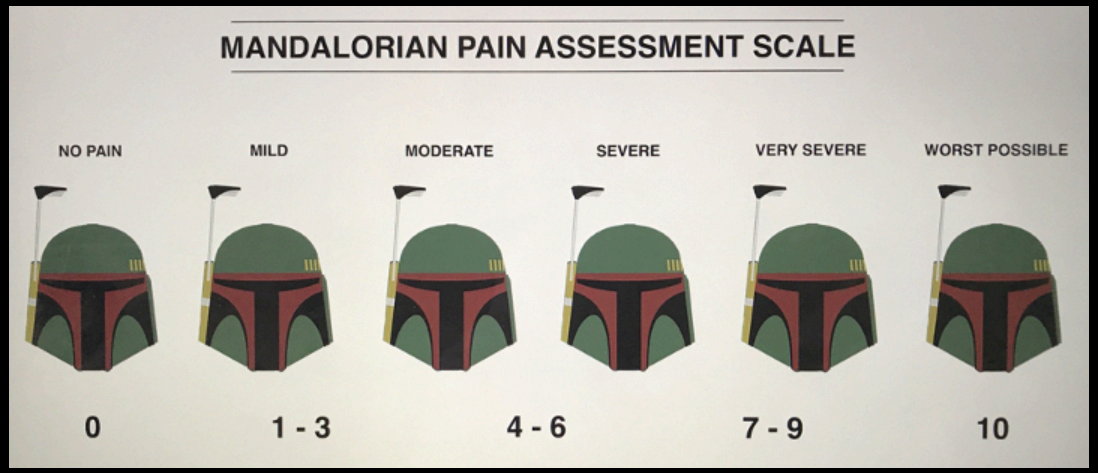
Risk Reduction Strategy

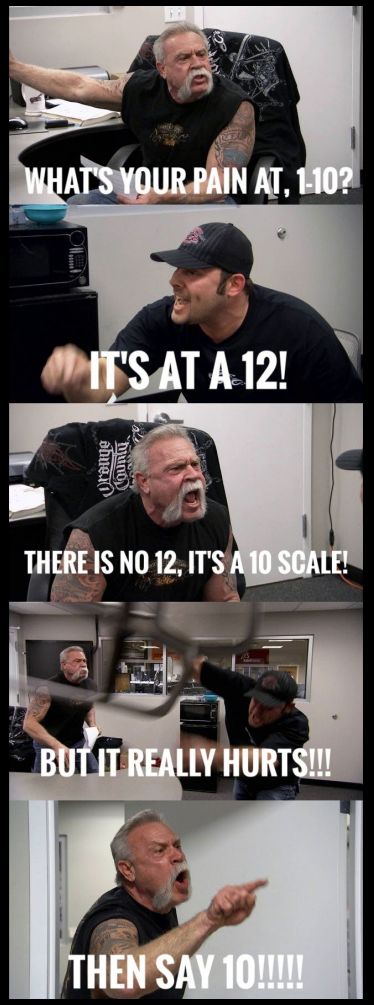
www.sempguidelines.org



Pain(ful) Scale Utilization







PAINweek

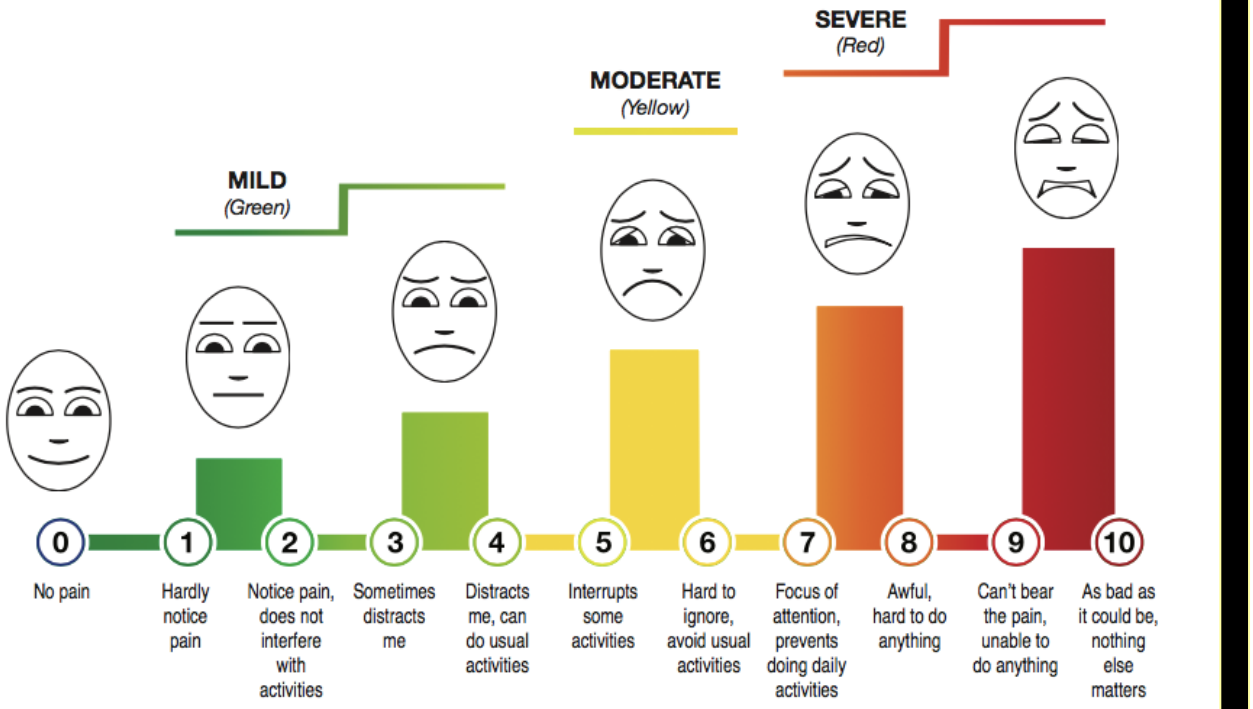
Favorite 1 to 10 Pain Scale Responses

20	Yes
13	2
8.5	3.14

Pain Scales

DVPRS

Defense and Veterans Pain Rating Scale



For clinicians to evaluate the biopsychosocial impact of pain

e number that describes how, during the past 24 hours, pain has contributed to your STRESS:

PAINWEEK®

http://www.dvcipm.org/clinical-resources/defense-veterans-pain-rating-scale-dvprs/

Pain Management Treatment Tool Box
Non-Pharmacological Options

Active

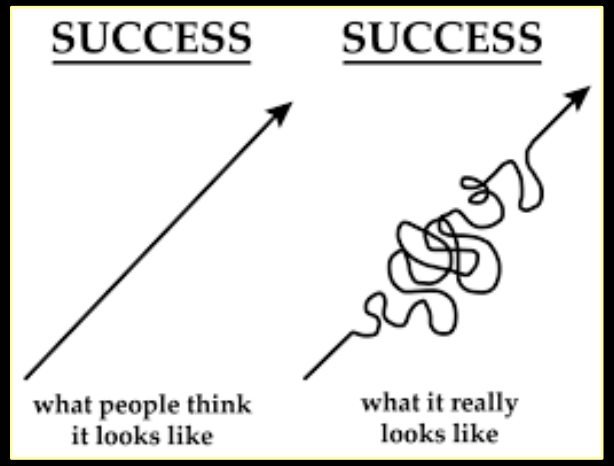
Cardio/Resistance Exercise
Aquatic Exercise
Walking Aids
Yoga
Tai Chi
Qigong
Meditation
Hypnosis
Relaxation
Cognitive Behavioral Therapy
Acceptance & Commitment Therapy
Biofeedback
Graded Motor Imagery
Occupational/Physical Therapy

Passive

Nutrition
Heat or Cold
TENS/EMS Devices
Hyperbaric Oxygen
Spinal Manipulation (Chiropractor)
Massage
Ultrasound
Paraffin Wax
Infrared Light
Spinal Traction
Acupuncture

Pain Treatments

Pharm

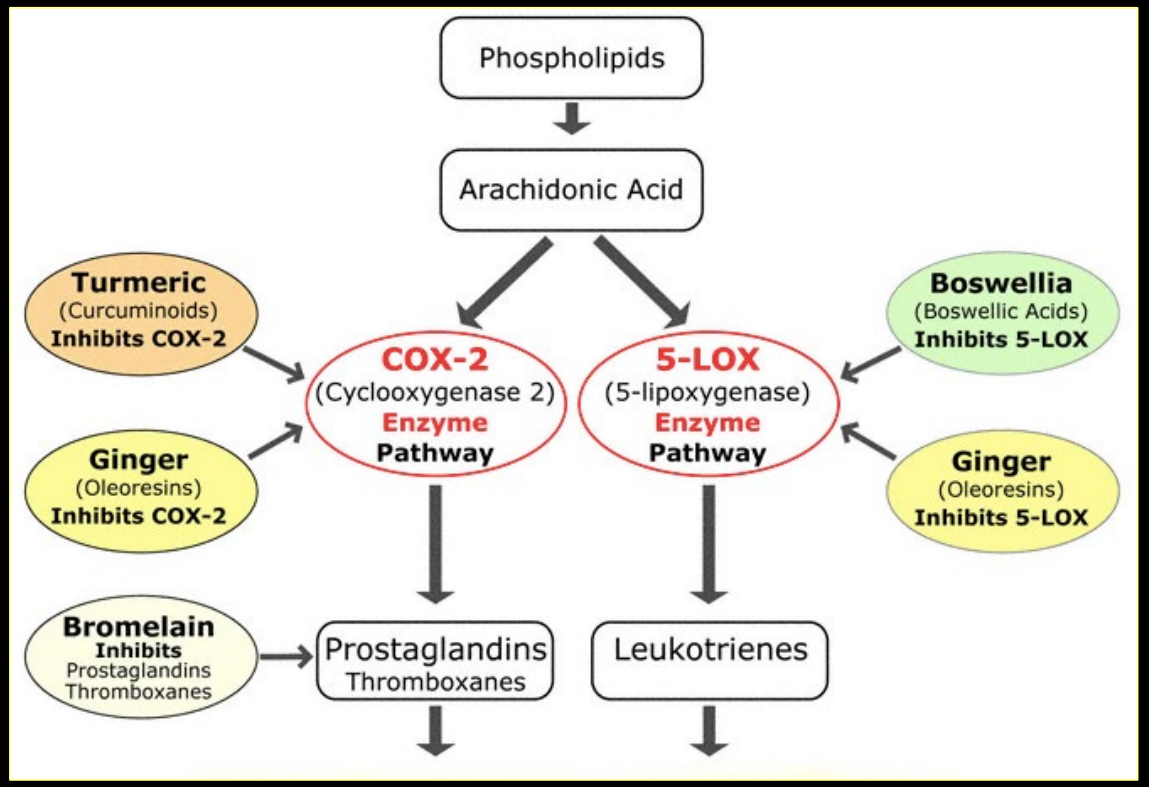


Non-Pharm

Herbals & Supplements

Anti-inflammatory Properties

- Birch & Wintergreen (Methyl Salicylate)
- White Willow Bark (Salicin)
- Peppermint (Menthol)
- Aquamin
- Boswellia (Frankincense Extracted from)
- Wild, Sweet, Winter, & Sour Cherries
- Ginger
- Ginseng (American, Panax/Asian, or Siberian)
- Kava Kava
- Valerian Root
- St. John's Wort
- Devil's Claw
- Vitamin B & Vitamin D



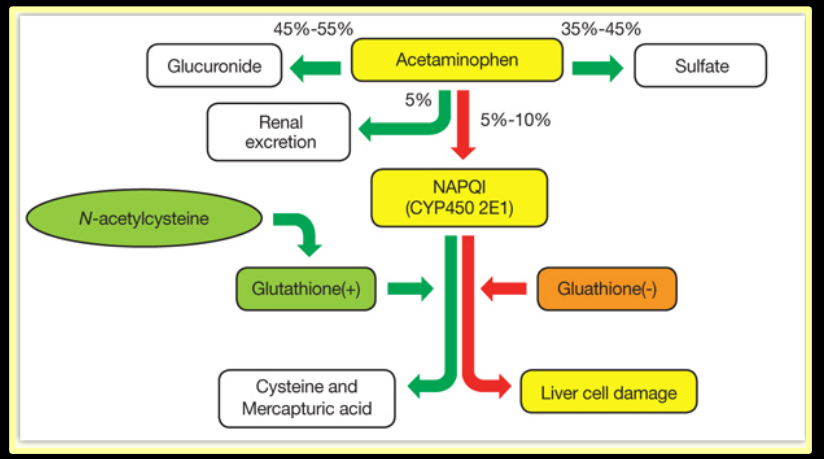
Caution: Drug Interactions

PAINWEEK

https://www.foodform.com/cart/inflamation_enzymes.html

Acetaminophen (APAP)

- para-acetylaminophenol (acetaminophen)
- para-Acetyl-P-AminoPhenol (APAP)
- para-acetyl-p-aminophenol (Tylenol®)
- para-acetylaminophenol (paracetamol)



Mechanism of Action

~Inhibits PG Synthesis in *CNS* (Antipyretic/Analgesic)

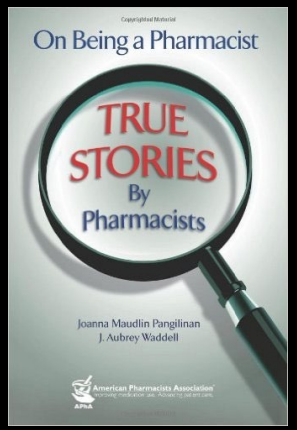
~Inhibits COX-3 Enzyme (Not COX-1 or COX-2, thus no anti-inflammatory effects)

Toxic Metabolite: N-Acetyl-P-Benzo-Quinone-Iminine (NAPQI)

– >50K ER Visits Every Year from APAP Overdose (Accidental > Intentional)

*Other Metabolite: N-Arachidonoylaminophenol

– Endogenous Cannabinoid Reuptake Inhibitor (ECRI)



PAINWEEK

Clinical Pharmacology Online Database, FDA, & CDC sites (2018)
Garofoli MP. Tylenol Overdose. On Being a Pharmacist. APhA. Pangilinan JM & Waddell JA.

Geriatric Care Resources

- Geriatric Medication App
  - IGeriatrics
- Geriatric Books & Textbooks
  - http://www.ccgp.org/content/geriatric-books-and-textbooks
- Geriatric Journals
  - http://www.ccgp.org/content/geriatric-journals
- American Geriatric Society
  - http://www.americangeriatrics.org
- Silver Book
  - http://www.silverbook.org

Painful Paperwork

- Living Wills
  - Advanced Directives for healthcare, life sustainment, treatment, etc.
- Power of Attorney
  - Invalid if patient becomes incompetent
- Durable Power of Attorney
  - Valid if patient becomes incompetent
- Durable Power of Attorney for Healthcare Decisions
  - Valid if patient becomes incapacitated
- DNR Orders
  - Do No Resuscitate Orders, made by patient while competent
  - Made by Family/Practitioner if not competent

http://www.merckmanuals.com/professional/geriatrics.html

Audience Question #1

Which of the following tricyclic antidepressant adjuvant pain medications is the most appropriate chronic pain management medication for a 75yo male patient with syncope concerns?

a) Amitriptyline
b) Doxepin
c) Imipramine
d) Nortriptyline

Audience Question #1 (ANSWER)

Which of the following tricyclic antidepressant adjuvant pain medications is the most appropriate chronic pain management medication for a 75yo male patient with syncope concerns?

a) Amitriptyline
b) Doxepin
c) Imipramine
d) NORTRIPTYLINE [CORRECT ANSWER]

Nortriptyline has the least amount of concerning side effects (e.g., sedation, etc.)

Audience Question #2

Which of the following NSAIDs is the most appropriate chronic pain management medication for a 75yo male patient?

a) celecoxib
b) ibuprofen
c) meloxicam
d) naproxen

Audience Question #2 (ANSWER)

Which of the following NSAIDs is the most appropriate chronic pain management medication for a 75yo male patient?

a) CELECOXIB [CORRECT ANSWER]
b) ibuprofen
c) meloxicam
d) naproxen

Celecoxib is the most “COX-2 Selective” NSAID listed, thus relatively safest on GI system

Audience Question #3

Chris P. Bacon, a 75yo male patient utilizing diclofenac for his osteoarthritis pain, recently ventured into a poison ivy patch while gardening and is now utilizing prednisone for 2 weeks for its respective treatment. Which of the following medications is recommended to be considered as adjunctive therapy based on the 2019 Beer's List?

a) Aspirin
b) Diphenhydramine
c) Loperamide
d) Omeprazole

Audience Question #3 (ANSWER)

Chris P. Bacon, a 75yo male patient utilizing diclofenac for his osteoarthritis pain, recently ventured into a poison ivy patch while gardening and is now utilizing prednisone for 2 weeks for its respective treatment. Which of the following medications is recommended to be considered as adjunctive therapy based on the 2019 Beer's List?

a) Aspirin
b) Diphenhydramine
c) Loperamide
d) OMEPRAZOLE [CORRECT ANSWER]

GI Protection

Discussion

LinkedIn: Mark Garofoli