

## Balancing Safety & Efficacy: Addressing Medication Dilemmas in Older Adults

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## Disclosure

Dr. Polomoff has no financial relationships with ineligible companies.

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## Objectives

1. Analyze pharmacokinetic and pharmacodynamic changes associated with aging
2. Identify opportunities for deprescribing and medication management
3. Use evidence-based tools and strategies to optimize medication regimens, applying deprescribing frameworks and decision aids in real-world geriatric care

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## What is advancing age?



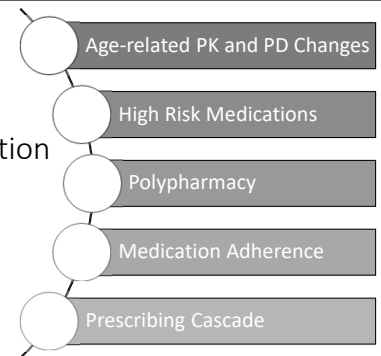
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## Changes with Aging

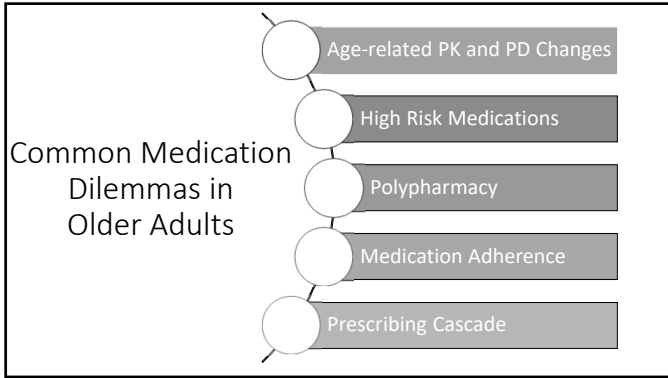
- Decreased vision
- Decreased hearing
- Decreased dexterity
- Fall risk
- Comorbidities
- Pharmacokinetics (PK) & Pharmacodynamics (PD)

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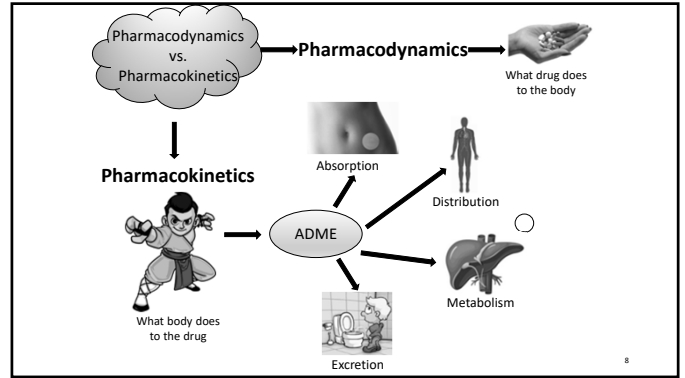
## Common Medication Dilemmas in Older Adults



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### Physiologic Changes with Age that May Change Drug PK: Absorption

Physiologic Change	Effect on PK
<b>GI</b> ↑ or no change stomach pH ↓ GI blood flow Slowed gastric emptying & transit	<b>GI</b> ↓ Absorption of drugs requiring acidic environment (Iron, calcium, Vitamin B12) Prolonged absorption (NSAIDs, aspirin, potassium chloride tablets)
<b>Skin</b> Thinning of dermis Loss of subcutaneous fat	<b>Skin</b> ↓ or no change to drug reservoir formation with transdermal formulation

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### Physiologic Changes with Age that May Change Drug PK: Distribution

Physiologic Change	Effect on PK
↓ Total body water	↓ Vd for hydrophilic drugs (lithium)
↑ Total body fat	↑ Vd for lipophilic drugs (diazepam, amiodarone)
↓ or unchanged albumin	↑ Free fraction of highly protein-bound drugs (phenytoin, warfarin, valproic acid)

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### Physiologic Changes with Age that May Change Drug PK: Metabolism (Liver)

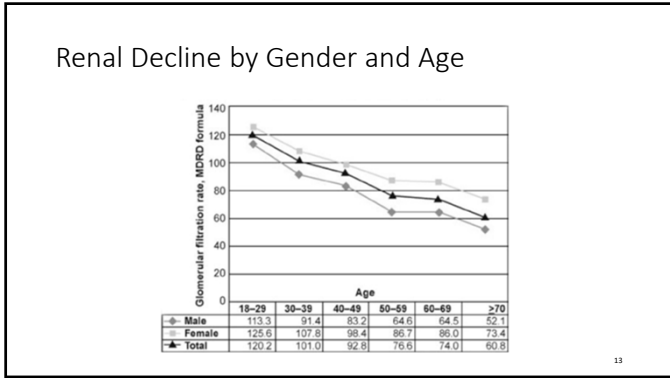
Physiologic Change	Effect on PK
↓ Liver mass	↓ First-pass extraction and metabolism
↓ Blood flow to liver	↑ Half-life and ↓ clearance of drugs with high first-pass extraction
↓ in CYP enzymes	↓ in Phase I (CYP450) metabolism No change in Phase II drug metabolism (lorazepam, oxazepam, temazepam)

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### Physiologic Changes with Age that May Change Drug PK: Excretion (Renal)

Physiologic Change	Effect on PK
↓ Glomerular filtration rate by 50%	↓ Renal elimination
↓ Renal blood flow by 50-60%	↑ Half-life of renally eliminated drugs and metabolites
↓ Tubular secretion	
↓ Renal mass by 10-20%	

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### Renal Function Estimation

Cockcroft-Gault equation

$$\text{CrCl for Males (mL/min)} = \frac{(140 - \text{Age}) (\text{Weight})}{(72) (SCr_{ss})}$$

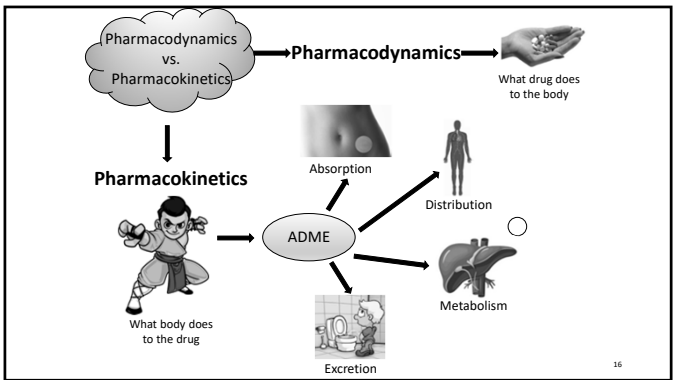
$$\text{CrCl for Females (mL/min)} = \frac{(140 - \text{Age}) (\text{Weight})}{(72) (SCr_{ss})} \times 0.85$$

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### Effect of Aging on Elimination

Class	Decreased Renal Elimination
Analgesics	Morphine
Antibiotics	Aminoglycosides Ciprofloxacin, levofloxacin Nitrofurantoin
Cardiovascular drugs	Dabigatran, rivaroxaban, apixaban Enoxaparin, heparin Lisinopril
Diuretics	Amiloride, triamterene Furosemide, HCTZ
Psychoactive drugs	Risperidone
Others	Gabapentin Lithium Glyburide Ranitidine

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- ### Pharmacodynamics
- Increased sensitivity → toxicity
    - Benzodiazepines, opioids, antipsychotics, anticholinergics
      - ↑ Sensitivity to CNS effects
  - Decreased sensitivity → ↓ response
    - β agonists
  - ↓ Baroreceptor response & impaired homeostasis → orthostatic hypotension
    - Diuretics, ACEI

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### Active Learning Question #1

The absorption of drugs requiring acidic environment (iron, calcium, Vitamin B12) generally \_\_\_\_\_ with aging.

- Increase
- Decrease
- Stay the same

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### Active Learning Question #2

There is generally \_\_\_\_\_ sensitivity and \_\_\_\_\_ response to beta agonists with aging.

- Decreased, decreased
- Increased, increased
- Decreased, increased
- Increased, decreased

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### Common Medication Dilemmas in Older Adults

- Age-related PK and PD Changes
- High Risk Medications
- Polypharmacy
- Medication Adherence
- Prescribing Cascade

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### American Geriatrics Society (AGS) Beers Criteria

- Last updated 2023
- List of potentially inappropriate medications that are typically best avoided by older adults in most circumstances
- [www.americangeriatrics.org](http://www.americangeriatrics.org)

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Avoid any combination of  $\geq 3$  of these CNS-active drugs:

- Antiepileptics
- Antipsychotics
- Antidepressants (TCA, SSRI, SNRI)
- Opioids
- Benzodiazepines
- "Z drugs" hypnotics (eszopiclone, zolpidem, zaleplon)
- Skeletal muscle relaxants (cyclobenzaprine, tizanidine, etc)

**Increased risk of falls**

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### Avoid in Delirium and Dementia

- Anticholinergics (Benadryl)
- Benzodiazepines (alprazolam)
- Z-drugs (Lunesta, Ambien, Sonata)
- Antipsychotics (increases risk of stroke and mortality in dementia)

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### Common Medication Dilemmas in Older Adults

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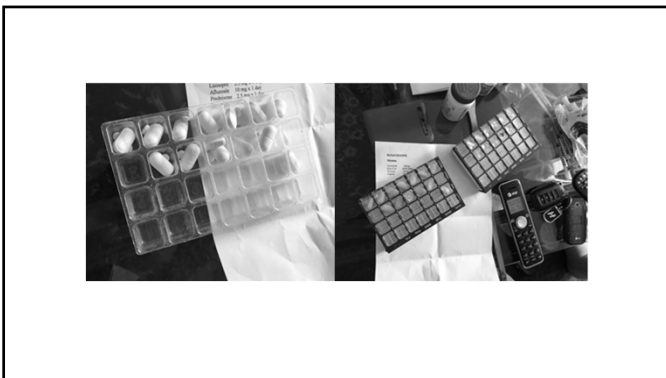
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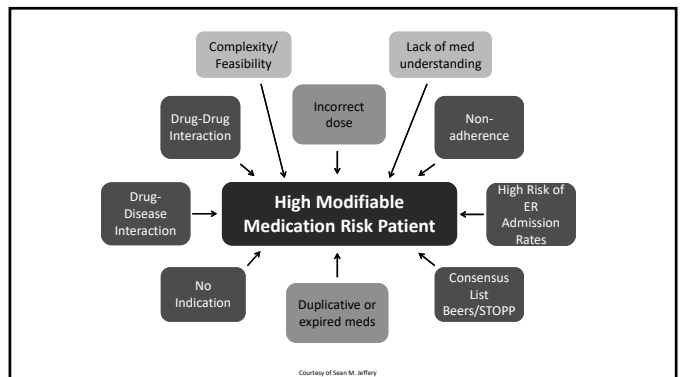
<p><b>Medications in pillbox which patient is taking</b></p> <ul style="list-style-type: none"> <li>• Alfuzosin 10 mg HS</li> <li>• Aspirin 81 mg daily</li> <li>• Isosorbide mononitrate 60 mg daily</li> <li>• Klor-Con 20 mg BID</li> <li>• Lisinopril 2.5 or 5 mg daily</li> <li>• Metoprolol succinate 100 mg daily</li> <li>• Prednisone 1 or 2.5 mg daily</li> <li>• Vesicare 10 mg daily</li> </ul>	<p><b>Medications found outside of pillbox which patient believes he is taking</b></p> <ul style="list-style-type: none"> <li>• Advil 200mg (exp: 6/2016)</li> <li>• Aspirin 81mg (exp: 8/2012) – Walgreens brand</li> <li>• Aspirin 81mg (exp: 4/2012) – CVS brand</li> <li>• Debrox ear wax removal (exp: 12/2015)</li> <li>• ERO ear wax removal (exp: 09/2010)</li> <li>• Ibuprofen 200 mg</li> <li>• Mucinex (guaifenesin)</li> <li>• Mucinex extra strength</li> <li>• Mucinex D (guaifenesin + pseudoephedrine)</li> <li>• Cortisporin otic suspension (exp: 2/2016)</li> <li>• Pantoprazole 20mg tab</li> <li>• Zolpidem tartrate 10 mg</li> </ul>
<p><b>Medications outside of pillbox which patient is taking</b></p> <ul style="list-style-type: none"> <li>• Insulin regular U-500 40 units TID</li> <li>• Proair HFA inhaler 2 puffs PRN</li> </ul>	

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**Medications found that patient states he is NOT taking:**

- Allopurinol 100 mg (exp: 9/2016)
- Aspirin 325mg enteric coated
- Acetaminophen ER 650 mg (exp: 7/2016)
- Centrum multi-vitamin
- Capzasin (capsaicin) no-mess applicator (exp: 10/2015)
- Diphenhydramine 25 mg (exp: 1/2015)
- **Furosemide 40 mg**
- Glucosamine + chondroitin + MSM
- Kim Tien Thao (desmodium styracifolium) 120mg – “for kidney stones and gallstones”
- Lisinopril 5 mg
- Metolazone 2.5 mg (not-labeled)
- Tussin DM (dextromethorphan 20 mg + guaifenesin 200 mg)

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# What is CancelRx?

National Council for Prescription Drug Programs (NCPDP) SCRIPT Standard transaction

Electronic message sent via EHR from Clinician to Pharmacy to request that a Rx be discontinued

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1 Prescriber initiates CancelRx request in their EHR and transmits to pharmacy

2 Pharmacy processes the request and returns response

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## Common Medication Dilemmas in Older Adults

- Age-related PK and PD Changes
- High Risk Medications
- Polypharmacy
- Medication Adherence
- Prescribing Cascade

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50% of meds are not taken as prescribed

**\$300** BILLION in direct medical costs

**\$106** BILLION from just 3 chronic conditions

\$3 of every \$4 spent goes to chronic conditions

High Cholesterol	High Blood Pressure	Diabetes
74 million people	78 million people	29 million people
2x risk for heart disease	4x more likely to die from stroke	50% higher risk of death

**Hospitalization risk** is significantly reduced for people who take their medication

High Cholesterol	High Blood Pressure	Diabetes
45%	39%	38%

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## 2024 CMS Medicare Part D Star Ratings Measures & respective weightings

Measure Name	2024
Call Center - Foreign Language Interpreter and TTY Availability	4
Complaints about the Drug Plan	4
Members Choosing to Leave the Plan	4
Drug Plan Quality Improvement	5
Rating of Drug Plan	4
Getting Needed Prescription Drugs	4
MPI Price Accuracy	1
Medication Adherence for Diabetes Medications	3
Medication Adherence for Hypertension (RAS antagonists)	3
Medication Adherence for Cholesterol (Statins)	3
MTM Program Completion Rate for CMR	1
Statins Use in Persons with Diabetes	1

PQA measures

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## Medicare Part D Star Ratings Adherence Measures

Measure	Weight
Medication Adherence for Diabetes Medications	3
Medication Adherence for Hypertension Medications (ACEI/ARB)	3
Medication Adherence for Cholesterol Medications (Statins)	3

The ability of a patient to take a prescribed dose of medication at the prescribed frequency for the prescribed length of time for at least 80% of the time. This is based on Rx refills using claims data. Calculation used for the measure is Proportion of Days Covered (PDC).

$$PDC = \frac{\# \text{ of covered days by prescription claims}}{\# \text{ of days in measurement period}}$$

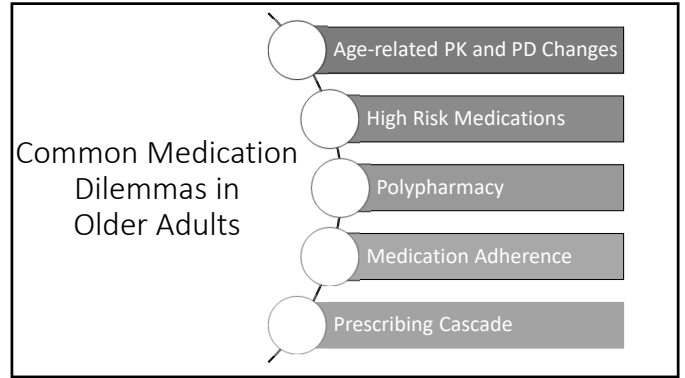
PDC Goal  $\geq$  80%

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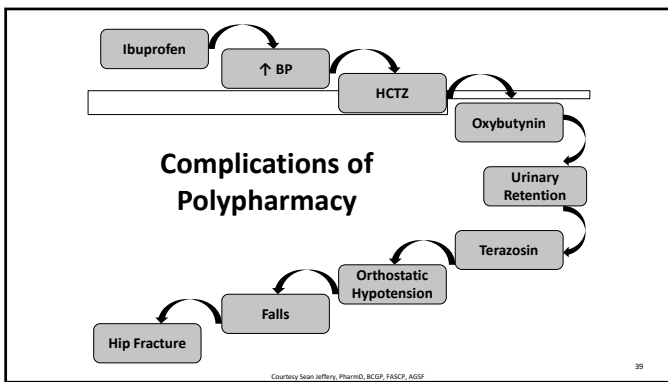
### Strategies for Improving Medication Adherence

Barrier	Possible Strategies
Cost	Switch 30 to 90 day Rx and Mail order can result in lower copay Maximize generic prescribing
Difficulty Refilling Medications	Request Rx's to be synchronized Switch to local pharmacy with delivery service and/or pillbox refill option Auto-refill programs
Forgetfulness	Encourage use of pillbox Use reminder system (set an alarm on phone, link taking medication to a daily routine like eating meals)
Overly Complex Medication Regimen	Consolidate to less frequent dosing Identify opportunities for deprescribing
Side effects	Review for alternatives and assess risks vs. benefits Make recommendation to provider
Goals of care not aligned with medication use	Review patient's beliefs (cultural, religious, moral) to identify reasons for not taking Rx Talk about expectations of taking the medication and prevention of a worse outcome

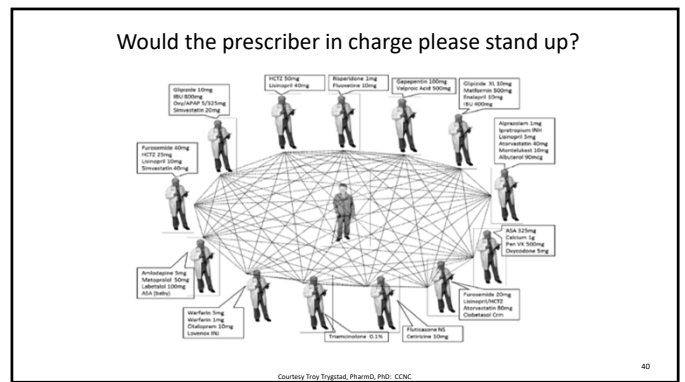
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- ### Deprescribing Guidelines and Tools
- Beers Criteria
  - STOPP-START Tool
  - STOPP-Frail Tool
  - Canadian Deprescribing Guidelines
  - Australia's Primary Tasmania Health Guidelines
  - Anticholinergic Cognitive Burden Scale
  - Medication Appropriateness Index (MAI)
  - MedStopper
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#### STOPP START Toolkit Supporting Medication Review

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

**START:**  
Screening Tool to Alert doctors to Right Treatments

Version 2 June 2016

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**BNF Chapter 6. Endocrine System**

**STOP:**

- **butylphthalate** with a long duration of action (e.g. glimepiride, gliclazide, glibenclamide, glibenclamide, glibenclamide) with type 2 diabetes mellitus (risk of prolonged hypoglycaemia)
- **metformin** in patients with heart failure (risk of exacerbation of heart failure)

**Diagnosis:**

- with a history of breast cancer or venous thromboembolism (increased risk of recurrence)
- without progesterone in patients with breast cancer (risk of endometrial cancer)
- **any hormone replacement therapy** to females with:
  - acute liver disease (metabolized by the liver)
  - osteogen-dependent cancer (may worsen prognosis)
  - undiagnosed vaginal bleeding or unexplained endometrial hyperplasia
  - active thrombocytopenia, thrombolytic disorder (increased risk of venous thromboembolism)
  - active or recent arterial thromboembolic disease (e.g. angina or myocardial infarction) (at increased risk of arterial thrombosis)

**Indications (check see hormones):** in the absence of primary or secondary hypogonadism (risk of androgen toxicity; not proven benefit outside of the hypogonadism indication)

**Biophosphonates:**

- if greater than 5 years treatment duration (for drug holiday), after discussion of risks and benefits.
- if unexplained high, hip or groin pain is reported, after discussion of risks and benefits.
- given orally in patients with a current or recent history of upper gastrointestinal disease (i.e. dyspepsia, oesophagitis, gastritis, duodenitis, or peptic ulcer disease), or upper gastrointestinal bleeding (risk of rehaemorrhage of oesophagitis, oesophageal ulcer, oesophageal stricture)

**Biophosphonates or Denosumab:** in patients considered at low fracture risk (FRAX assessment tool)

**Denosumab:** patient is unable to have regular dental check-ups.

**BNF Chapter 6. Endocrine System**

**START:**

**ACEi or ARRA (if intolerant of ACEi)** in diabetes with evidence of renal disease (i.e. dipstick proteinuria or microalbuminuria (greater than 30 mg/24 hours) with or without serum biochemical renal impairment).

**Biophosphonates and vitamin D and calcium** (where dietary calcium intake inadequate) in patients taking long-term systemic glucocorticosteroid therapy (greater than or equal to 7.5 mg prednisolone per day (or equivalent) for 3 months or more).

**Vitamin D and calcium** (where dietary calcium intake inadequate) supplement:

- in patients with known osteoporosis and/or previous fragility fracture(s) and/or (Bone Mineral Density T-scores greater than -2.5 in multiple sites).
- in older people who are housebound or experiencing falls or with osteopenia (Bone Mineral Density T-score is in the range of -1 to -2.5 in multiple sites).

**Bone anti-resorptive or anabolic therapy** (e.g. biophosphonate) in patients with documented osteoporosis, where no pharmacological or clinical status contraindication exists (Bone Mineral Density T-scores is less than -2.5 in multiple sites) and/or previous history of fragility fracture(s).

**Personalised management plan** for diabetes, including dietary and other aspects of lifestyle modification: increasing physical activity and losing weight, alcohol intake and smoking advice (where applicable).

**A group education programme** for diabetes eg **DESMOND (type 1)** and **DAFNE (type 2)** referral programmes.

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**STOPP-Frail**

**Screening Tool of Older Persons Prescriptions in Frail adults with limited life expectancy**

**STOPP-Frail** is a list of potentially inappropriate prescribing indications designed to assist physicians with stopping such medications in older patients (65 years) who meet ALL of the criteria listed below:

- (1) End-stage irreversible pathology
- (2) Prior one year survival prognosis
- (3) Severe functional impairment or severe cognitive impairment or both
- (4) Symptom control is the priority rather than prevention of disease progression

The decision to prescribe/continue medications to the patient, should also be influenced by the following issues:

- (1) Risk of the medication outweighing the benefit
- (2) Administration of the medication is challenging
- (3) Monitoring of the medication effect is challenging
- (4) Drug adherence/compliance is difficult

**Disclaimer (STOPP-Frail)**

While every effort has been made to ensure that the potentially inappropriate prescribing criteria listed in STOPP-Frail are accurate and evidence based, it is emphasized that the final decision to start or initiate any drug referred to in these criteria rests entirely with the prescriber. It is also to be noted that the evidence base underlying certain criteria in STOPP-Frail may change after the time of publication of these criteria. Therefore, it is advisable that prescribers should take account of current published evidence in support of or against the use of drugs or drug classes included in STOPP-Frail.

Author: Harvey Lewis, A. Gallagher, P. Parsons, C. & O'Mahony, D. (2017)

**Section A: General**

**A1:** Any drug that the patient persistently fails to take or tolerate despite adequate education and consideration of all appropriate formulations.

**A2:** Any drug without clear clinical indication.

**Section B: Cardiovascular system**

**B1: Lipid lowering therapies**  
(statins, ezetimibe, bile acid sequestrants, fibrates, nicotinic acid and ergosterol)  
These medications need to be prescribed for a long duration (to be of benefit). For short-term use, the use of statins outweighs the potential benefits (33-43)

**B2: Alpha-blockers for hypertension**  
Diagnosed blood pressure control is not required in very frail older people. Alpha-blockers in particular can cause marked orthostatic hypotension, which can result in marked postural hypotension, falls and injuries (46)

**Section C: Coagulation system**

**C1: Antiplatelets**  
Avoid anti-platelet agents for primary (or distinct from secondary) cardiovascular prevention (no evidence of benefit)(47)

**Section D: Central Nervous System**

**D1: Neuroleptic antipsychotics**  
Aim to reduce time and number of neuroleptic drugs in patients taking them for longer than 12 weeks if there are no current clinical features of behavioural and cognitive symptoms of dementia (BPSD) (48-52)

**D2: Memantine**  
Discontinue and monitor in patients with moderate to severe dementia, unless memantine has already improved BPSD significantly in frail patients who meet the criteria above(53-56)

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**Canadian Deprescribing Guidelines**

**Proton Pump Inhibitor (PPI)**

Proton pump inhibitors - or PPIs - are a class of drugs used to treat heartburn, gastroesophageal reflux disease and gastric ulcers. PPIs reduce the production of acid by blocking the enzyme in the wall of the stomach that produces acid

- Proton Pump Inhibitor evidence-based deprescribing guideline (published in Canadian Family Physician)
- Proton Pump Inhibitor deprescribing algorithm (English)
- Proton Pump Inhibitor deprescribing algorithm (French)
- Proton pump inhibitor deprescribing guideline information pamphlet (English)
- Proton pump inhibitor deprescribing guideline information pamphlet (French)
- Proton pump inhibitor deprescribing infographic (English)
- Proton pump inhibitor deprescribing infographic (French)
- Proton pump inhibitor patient decision aid
- Whiteboard video on using the Proton Pump Inhibitor deprescribing algorithm (English)
- Whiteboard video on using the Proton Pump Inhibitor deprescribing algorithm (French)

Antihyperglycemic

Antipsychotic

Benzodiazepine Receptor Agonist (BZRA)

Cholinesterase Inhibitors (ChEIs) and Memantine

deprescribing.org

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**deprescribing.org | Benzodiazepine & Z-Drug (BZRA) Deprescribing Algorithm**

**Why is patient taking a BZRA?**

If unsure, find out if history of anxiety, past psychiatrist consult, whether may have been started in hospital for sleep, or for grief reaction.

- Insomnia on its own (or insomnia where underlying comorbidities managed) for those < 65 years of age: taking BZRA regardless of duration (avoid as first line therapy in older people)
- For those 65-64 years of age: taking BZRA > 1 weeks

**Engage patients** (discuss potential risks, benefits, withdrawal plan, symptoms and duration)

**Recommend Deprescribing**

**Taper and then stop BZRA**  
Taper slowly in collaboration with patient, for example - 25% every two weeks, and if possible, 10% reductions near end and/or planned drug free days

- For those > 65 years of age (strong recommendation from systematic review and GRADE approach)
- For those 64 years of age (weak recommendation from systematic review and GRADE approach)
- Offer behavioural sleeping advice; consider CBT if available (see reverse)

**Monitor every 1-2 weeks for duration of tapering**

**Expected benefits:**

- May improve alertness, cognition, daytime sedation and reduce falls

**Withdrawal symptoms:**

- Insomnia, anxiety, irritability, sweating, gastrointestinal symptoms (all usually mild and last for days to a few weeks)

**Use non-drug approaches to manage insomnia:** Use behavioural approaches and/or CBT (see reverse)

**Continue BZRA**

- Other sleeping disorders (e.g. restless legs)
- Unmanaged anxiety, depression, physical or mental condition that may be causing or aggravating insomnia
- Benzodiazepine effective specifically for anxiety
- Alcohol withdrawal

- Minimize use of drugs that worsen insomnia (e.g. caffeine, alcohol etc.)
- Treat underlying condition
- Consider consulting psychologist or psychiatrist or sleep specialist

**If symptoms relapse:**

- Maintaining current BZRA dose for < 1 weeks, then continue to taper at slow rate
- Alternative drug
- Other medications have been used to manage insomnia. Assessment of their safety and effectiveness is beyond the scope of this algorithm. See BZRA deprescribing guideline for details.

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**Step-By-Step Taper from the Canadian Deprescribing Guidelines**

WEEKS	TAPERING SCHEDULE						
	MO	TU	WE	TH	FR	SA	SU
1 and 2	●	●	●	●	●	●	●
3 and 4	●	●	●	●	●	●	●
5 and 6	●	●	●	●	●	●	●
7 and 8	●	●	●	●	●	●	●
9 and 10	●	●	●	●	●	●	●
11 and 12	●	●	●	●	●	●	●
13 and 14	●	●	●	●	●	●	●
15 and 16	×	×	×	×	×	×	×
17 and 18	×	×	×	×	×	×	×

**What the symbols mean**

● Full dose ● Half dose ▲ Quarter of a dose × No dose

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**Medication management – deprescribing**

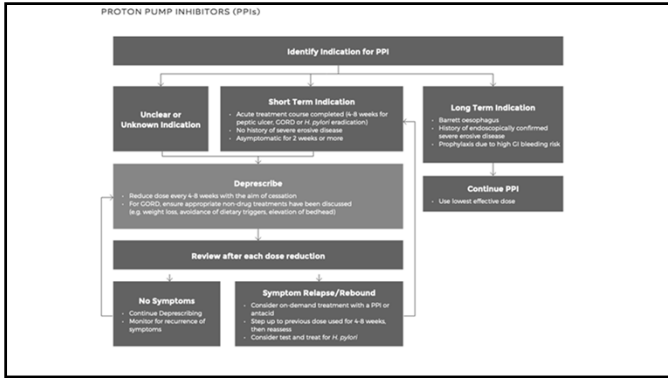
Download File:

- Deprescribing fact sheet
- A guide to deprescribing allopurinol
- A guide to deprescribing anticholinergics
- A guide to deprescribing anticoagulants
- A guide to deprescribing antiepileptic drugs (AEDs)
- A guide to deprescribing antihyperglycaemics
- A guide to deprescribing antiplatelets
- A guide to deprescribing antidepressants
- A guide to deprescribing antipsychotics
- A guide to deprescribing benzodiazepines
- A guide to deprescribing biophosphonates
- A guide to deprescribing cholinesterase inhibitors
- A guide to deprescribing gabapentinoids
- A guide to deprescribing glaucoma eye drops
- A guide to deprescribing inhaled corticosteroids
- A guide to deprescribing long-acting minutes
- A guide to deprescribing non-steroidal anti-inflammatory drugs (NSAIDs)
- A guide to deprescribing opioids
- A guide to deprescribing proton pump inhibitors (PPIs)
- A guide to deprescribing statins
- A guide to deprescribing vitamin D and calcium
- Consumer resource: Managing Your Medications brochure
- Consumer resource: Managing Your Medications card

**Australia's Primary Health Tasmania Guidelines**

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**Anticholinergic Burden Calculator** www.acbcalc.com

ACB calculator

Many of the medications that we commonly prescribe have anticholinergic properties. In patients over 65 years of age these can cause adverse events, such as confusion, dizziness and falls. These have been shown to increase patient mortality.

You can use this calculator to work out the Anticholinergic Burden for your patients, a score of 3+ is associated with an increased cognitive impairment and mortality.

Whilst there are multiple different scoring systems, the German Anticholinergic Burden score<sup>1</sup> and the Anticholinergic Cognitive Burden Scales<sup>2</sup> have been demonstrated to show most validity and reliability<sup>3</sup>. Therefore, we have used a combination of these 2 scores when creating the ACB calculator. When discrepancies arise, we opted to include the higher value in the interest of safety.

Find more information on Anticholinergic Burden or help choosing medicines to reduce anticholinergic burden, click here.

**Total ACB Score: 10 High Risk**

Your patient has scored 10 and is therefore at a higher risk of confusion, falls and death. Please review their medications and... Discuss this with the patient and/or instructions. Please consider if any of these medications could be switched to a lower risk alternative. For help choosing medicines to reduce anticholinergic burden, click here.

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**Anticholinergic Burden Calculator** www.acbcalc.com

**Some options for reducing the score:**

Chlorphenamine	Nasal sprays, Loratidine, Fexofenadine
Oxybutynin	Non-pharmacological alternatives (eg pelvic floor exercises), Mirabegron Remember - Oxybutynin is a small structure that easily crosses the Blood-brain barrier. Solifenacin, Trospium, and Tolteradine do not cross so easily.
Amiripryline (for depression)	Lifestyle options, SSRIs (citalopram, sertraline) or SNRIs (Duloxetine, Venlafaxine)
Amiripryline (for pain)	Conservative options such as stretching, hot water bottles, Gabapentin, Duloxetine
Tramadol	Physiotherapy, massage, stretching, heat/ice, Paracetamol

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**Medication Appropriateness Index**

Patient ID# \_\_\_\_\_ Evaluator \_\_\_\_\_ Date \_\_\_\_\_

Drug Code \_\_\_\_\_ Drug \_\_\_\_\_

To assess the appropriateness of the drug, please answer the following questions and circle the applicable rating:

- Is there an indication for the drug? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Not Indicated DK
- Is the medication effective for the condition? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Effective Ineffective DK  
Comments: \_\_\_\_\_
- Is the dosage correct? A \_\_\_\_\_ B \_\_\_\_\_ C (at C) \_\_\_\_\_ Z \_\_\_\_\_  
Correct Incorrect DK  
Comments: \_\_\_\_\_
- Are the directions correct? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Correct Incorrect DK  
Comments: \_\_\_\_\_
- Are the directions practical? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Practical Impractical DK  
Comments: \_\_\_\_\_
- Are there clinically significant drug-drug interactions? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Insignificant Significant DK  
Comments: \_\_\_\_\_
- Are there clinically significant drug-disease/condition interactions? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Insignificant Significant DK  
Comments: \_\_\_\_\_
- Is there unnecessary duplication with other drugs? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Necessary Unnecessary DK  
Comments: \_\_\_\_\_
- Is the duration of therapy acceptable? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Acceptable Not acceptable DK  
Comments: \_\_\_\_\_
- Is this drug the least expensive alternative compared to others of equal utility? A \_\_\_\_\_ B \_\_\_\_\_ C \_\_\_\_\_ Z \_\_\_\_\_  
Least expensive Most expensive DK  
Comments: \_\_\_\_\_

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**MEDSTOPPER BETA**

Starting medications is like the bliss of marriage and stopping them is like the agony of divorce. - Doug Danforth

HOME ABOUT FAQs RESOURCES CONTACT

**MedStopper is a deprescribing resource for healthcare professionals and their patients.**

- Frail elderly?
- Generic or Brand Name:
- Select Condition Treated:

Generic Name Brand Name Condition Treated Add to MedStopper

Previous Next

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Stopping Priority	Medication/Category/Condition	May Interact/Symptoms?	May Reduce Risk for Future Illness?	May Cause Harm?	Suggested Taper Approach	Possible Symptoms when Stopping or Tapering	Beers/STOPP Criteria
High	Depression/Anxiety/Insomnia	☹️ ☹️	☹️ ☹️	☹️ ☹️	If used daily for more than 2-4 weeks, reduce dose by 25% every week for 2-4 weeks, then 25% every 2-4 weeks until discontinued. If used for 2-4 weeks, reduce dose by 25% every 2-4 weeks until discontinued. If used for 2-4 weeks, reduce dose by 25% every 2-4 weeks until discontinued.	reluctance, irritability, anxiety, and all other symptoms, use medications including haloperidol, risperidone, and	Details
High	Benzodiazepines	☹️ ☹️	☹️ ☹️	☹️ ☹️	Beers Criteria: Avoid benzodiazepines for treatment of insomnia, agitation, or delirium. STOPP Criteria: Avoid long term (>1-month) use and avoid if fallen in last 3 months		Details
High	Antipsychotics	☹️ ☹️	☹️ ☹️	☹️ ☹️	Tapering not required		Details
High	Anticholinergics	☹️ ☹️	☹️ ☹️	☹️ ☹️	If used daily for more than 2-4 weeks, reduce dose by 25% every 2-4 weeks. Once at 25% of the original dose, taper the drug. If any symptoms have been seen, stop the drug. If any symptoms have been seen, stop the drug. If any symptoms have been seen, stop the drug.	reluctance, irritability, anxiety, and all other symptoms, use medications including haloperidol, risperidone, and	Details

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### Active Learning Question #3: Case

- 86 y/o female referred for concern for falls while on multiple medications
- H/o injurious falls - significant rib fracture, vertebral compression fractures
- On oxycontin for > 5 years for significant osteoporosis. Is most bothered by bilateral foot pain d/t peripheral neuropathy.
- On zolpidem for insomnia. Reports zolpidem is not preventing night-time wakefulness and has become less helpful for falling asleep. Is amenable to titrating down on zolpidem.
- Treated with clonazepam for chronic tremor. Resistant to altering clonazepam given irritability and shaking of hands/head when skips a dose.

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**Medications**

- albuterol inhaler
- amiodarone 300mg daily
- amlodipine 10mg daily
- aspirin 81mg daily
- atorvastatin 20mg daily
- betamethasone cream
- calcium carbonate + cholecalciferol (600/800mg tab)
- clonazepam 1mg BID
- docusate PRN
- esomeprazole 40mg daily
- furosemide 20mg daily
- levothyroxine 100mcg daily
- metoprolol succinate 50mg daily
- nitroglycerin 0.4mg SL tab
- oxycontin 20mg BID
- zolpidem 10mg qHS
- vitamin B6-B12 complex

What resources can we use to help identify deprescribing algorithms and recommendations for alternative options?

Which meds would you tackle first?

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**Medications**

- albuterol inhaler
- amiodarone 300mg daily
- amlodipine 10mg daily
- aspirin 81mg daily
- atorvastatin 20mg daily
- betamethasone cream
- calcium carbonate + cholecalciferol (600/800mg tab)
- clonazepam 1mg BID
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- esomeprazole 40mg daily
- furosemide 20mg daily
- levothyroxine 100mcg daily
- metoprolol succinate 50mg daily
- nitroglycerin 0.4mg SL tab
- ~~oxycontin 20mg BID~~
- ~~zolpidem 10mg qHS~~
- vitamin B6-B12 complex

Duloxetine

Lidocaine

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### Fall risk and CNS depressants:

- **Pain:**
  - **Tapering recommendations**
    - Oxycontin – decrease by 10mg/day every 10 days
      - 10mg AM + 20mg PM x 10 days
      - 10mg BID x 10 days
      - 10mg HS x 10 days
      - Stop
    - **Duloxetine:** initiate 30 mg for one month and then increase as tolerated to 60 mg daily (repeat BMP to ensure CrCl > 30mL/min given CKD Stage II)
  - Apply **lidocaine** to feet 4x/day
- **Sleep:**
  - **Zolpidem:** 7.5mg HS x 14 days → 5mg HS x 14 days → 2.5mg HS x 14 days → discontinue
  - Sleep hygiene: provided tips and National Sleep Foundation website

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