Strategies for Deprescribing

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AAMC Association of American Medical Colleges

MedEdPORTAL® | The Journal of Teaching and Learning Resources

Geriatrics 5Ms for Primary Care Workshop

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https://doi.org/10.15766/mep_2374-8265.10814

Geriatric 5Ms: Tinetti, Huang and Molnar, JAGS 2017

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Medications

Objectives

- Identify when a patient is experiencing polypharmacy
- Utilize evidence-based tools for deprescribing
- Create a plan to optimize patients medication safety

Acknowledgements to: Phillips et al, MedEdPortal 2019, Hawley at al, MededPortal 2019, Schwartz and Monette, HMS 2021

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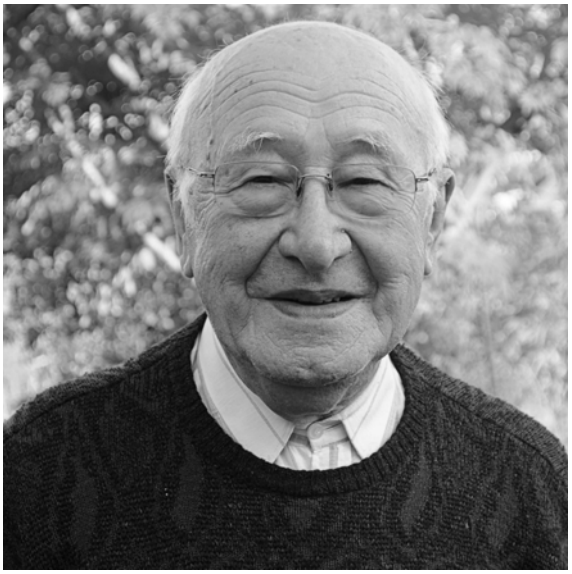
Medications

Mr. V is 88 years old

He brings a bag full of his medications.



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Medications

Past Medical History:

Hypertension

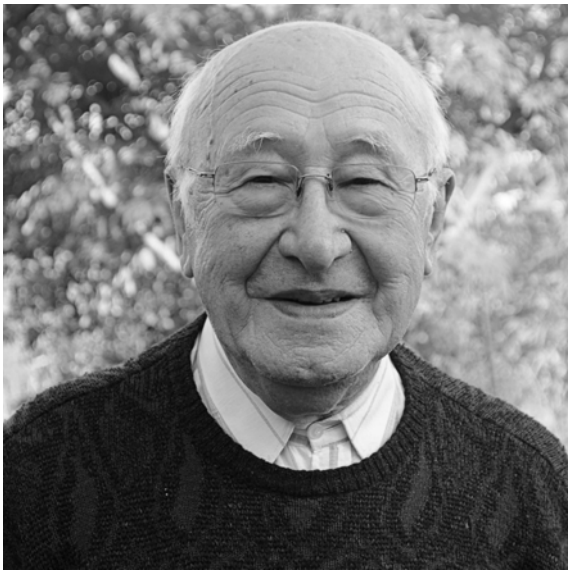
Hyperlipidemia

Diabetes

BPH

Anxiety

Insomnia



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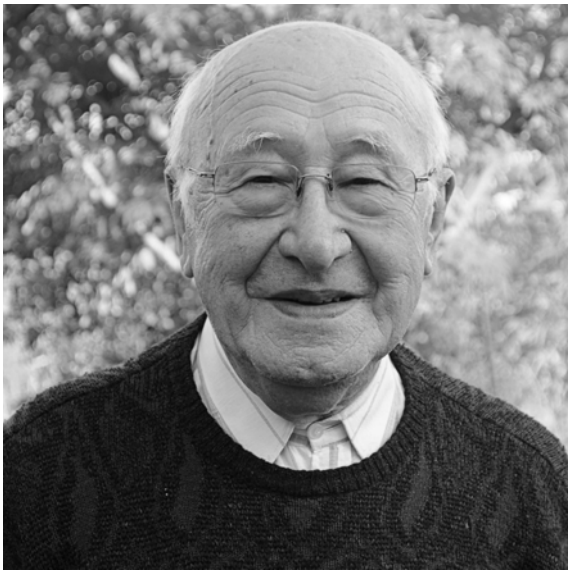
Medications

- Alprazolam 1 mg twice daily
- Amlodipine 10 mg daily
- Atorvastatin 80 mg daily
- Diphenhydramine 25 mg as needed for sleep
- Lisinopril 40 mg daily
- Glyburide 10 mg twice daily
- Metformin 500 mg daily
- Omeprazole 20 mg daily
- Senna 8.6 mg daily as needed for constipation



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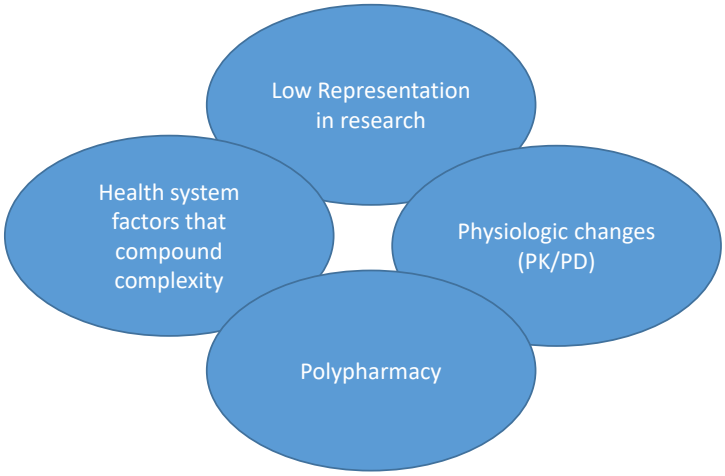
What makes medication use so challenging in older adults?



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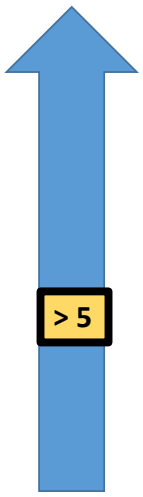
Polypharmacy Problem



- Disability
- Frailty
- Drug-drug interactions
- Impaired cognition
- Slowed gait speed

Gnjidic D et al. J *Clin Epidemiol* 2012
Doan J et al. *Ann Pharmacother* 2013
Langeard et al. *Frontiers in Pharmacology* 2016

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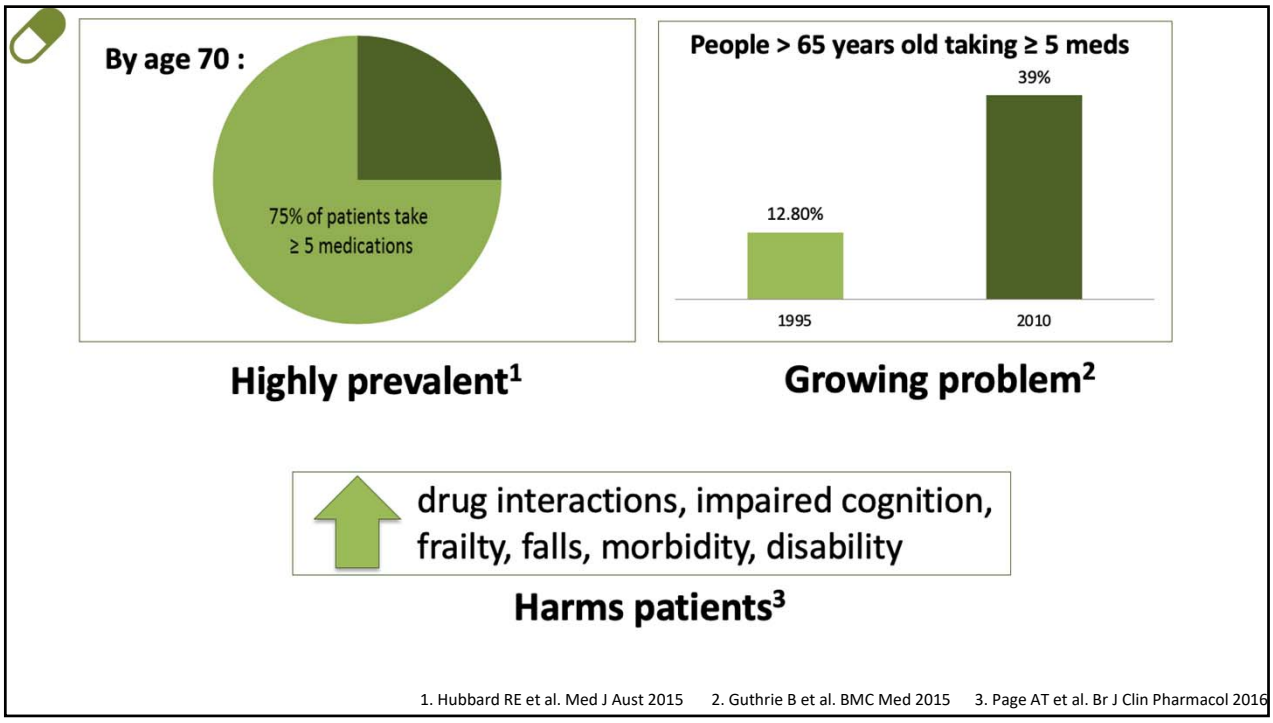
By age 70 :
75% of patients take ≥ 5 medications
People > 65 years old taking ≥ 5 meds
39%
12.80%
1995
2010
Highly prevalent[1]
Growing problem[2]
drug interactions, impaired cognition, frailty, falls, morbidity, disability
Harms patients[3]
1. Hubbard RE et al. Med J Aust 2015
2. Guthrie B et al. BMC Med 2015
3. Page AT et al. Br J Clin Pharmacol 2016

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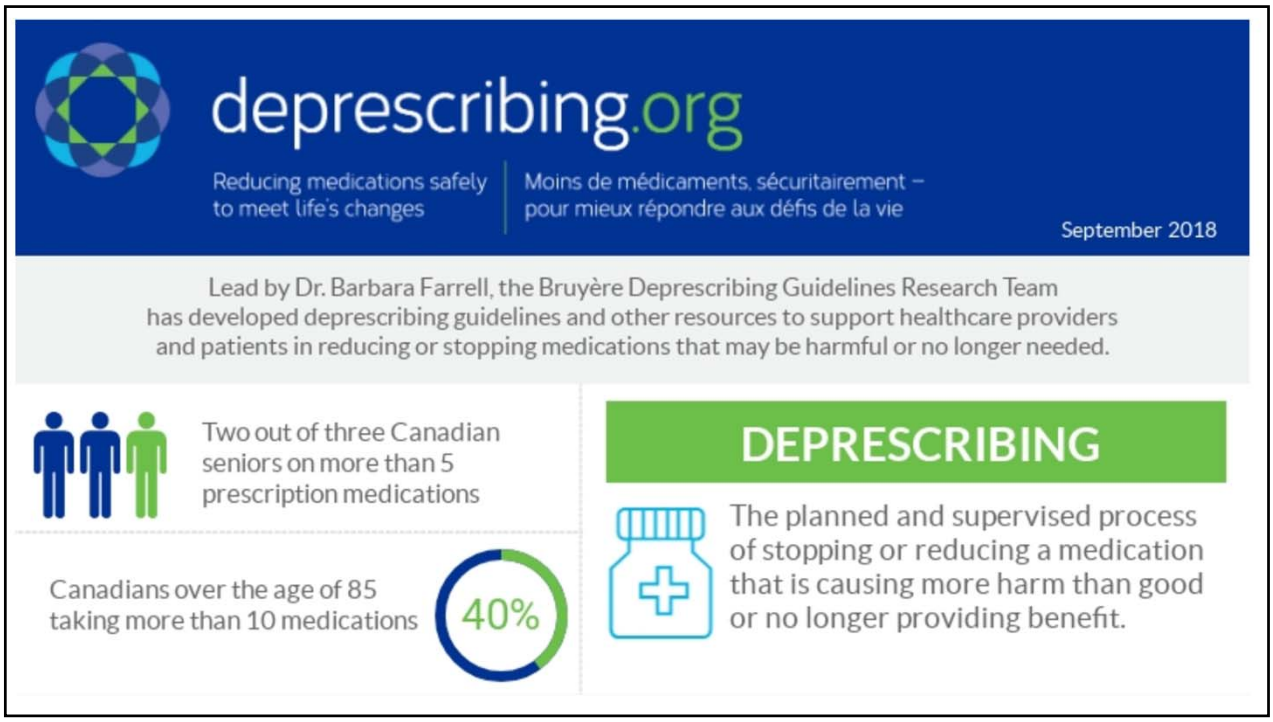
deprescribing.org
Reducing medications safely to meet life's changes
Moins de médicaments, sécuritairement – pour mieux répondre aux défis de la vie
September 2018
Lead by Dr. Barbara Farrell, the Bruyère Deprescribing Guidelines Research Team has developed deprescribing guidelines and other resources to support healthcare providers and patients in reducing or stopping medications that may be harmful or no longer needed.
Two out of three Canadian seniors on more than 5 prescription medications
Canadians over the age of 85 taking more than 10 medications
40%
DEPRESCRIBING
The planned and supervised process of stopping or reducing a medication that is causing more harm than good or no longer providing benefit.

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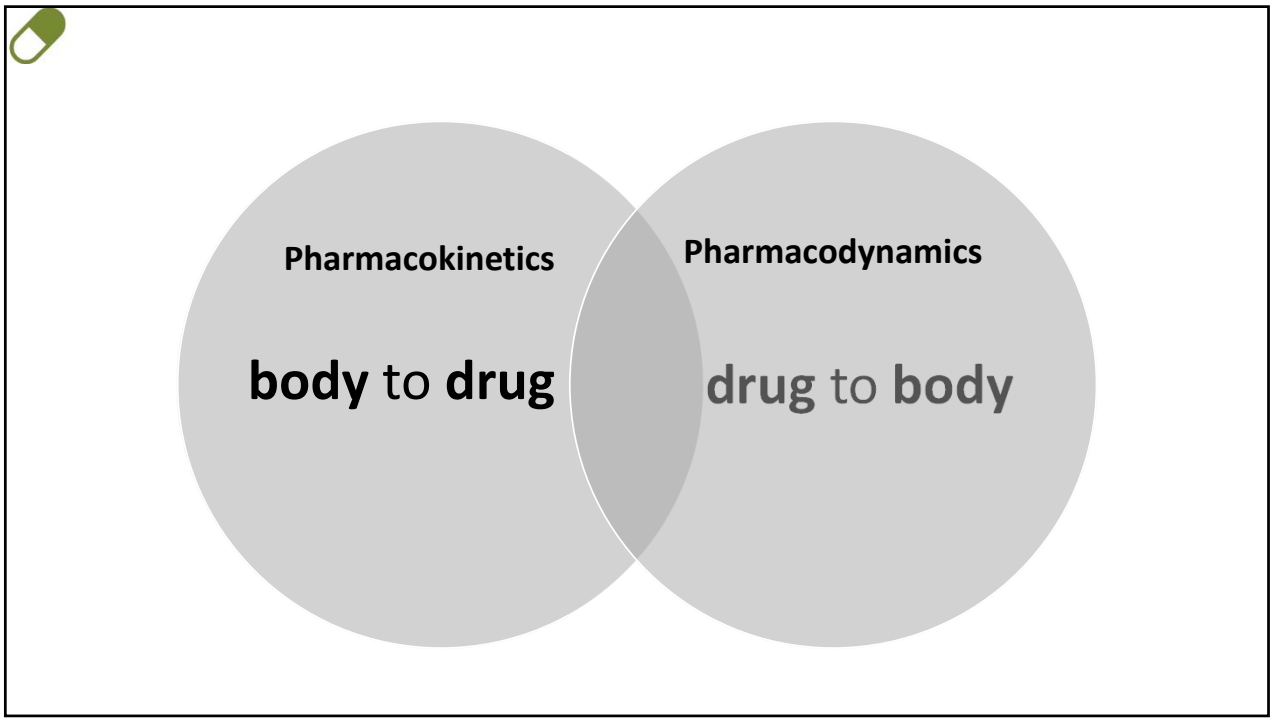

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Physiologic changes that occur with age

- **Pharmacokinetics** (*how the body reacts to a medication*)
  - Decreased absorption, metabolism and elimination
    - Increased concentrations of medications at the same doses
  - Increased/decreased distribution dependent of drug properties
    - Increased distribution of fat soluble drugs → accumulation
- **Pharmacodynamics** (*how the medication reacts to the body)*
  - Changes in
    - Receptor binding
    - Post receptor effects
    - Homeostatic responses
    - Blood brain permeability
      - Effects of drugs at similar concentrations are **more pronounced**

Wooten JM. *Southern Medical Journal*. 2012.

12

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- Exw#jhw#khuh$
- Rihq#dssursuldwh#dqg#qhfhvvdu|#
- Rqh#dw#d#wlph

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The Geriatric 5Ms

Age-Friendly Health Systems

- Mobility
- Mind
- Medications
- Multicomplexity
- Matters Most

Geriatric 5Ms: Tinetti, Huang and Molnar, JAGS 2017; Mate et al, Healthcare 2018; Slides adapted from Schwartz and Monette, HMS 2021

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Mobility & Medications

- Consider:
  - Dexterity
  - Strength
  - Gait
  - Transportation
- Ask:
  - Are you able to get around the house okay?
  - Any difficulty opening your pill bottles?
  - Any difficulty swallowing medications?
  - How easy is it to obtain your medications?
- Solutions
  - Easy open cap modification
  - Liquid formulations or pills that can be crushed
  - Interprofessional care team support
  - Mailed prescriptions

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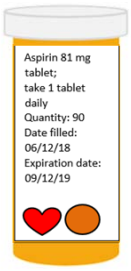
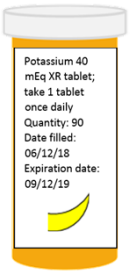
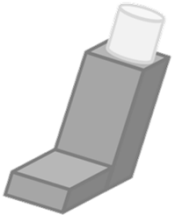
Mobility: Managing Medications







Visual Impairment
Dexterity Issues

Difficulty Swallowing
Poor Dentition

Cognitive Impairment
vs. Low Health Literacy

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Mind & Medications

- Consider:
  - Cognitive impairment
  - Mood or affect
  - Health literacy
- Ask:
  - Do any medications make you feel foggy, drowsy, or down?
  - Do you have any difficulty keeping track of your medications?
  - Is it difficult to take all of your medications at the right time?
  - How many doses have you missed in the last week?
- Solutions:
  - If possible, decrease/change medications w/ undesirable cognitive/mood effects
  - Review medication instructions
  - Propose lists or alarms as reminders

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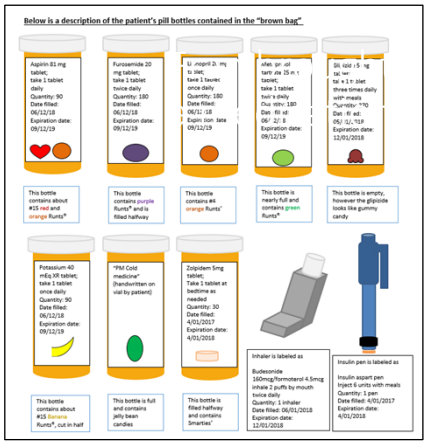
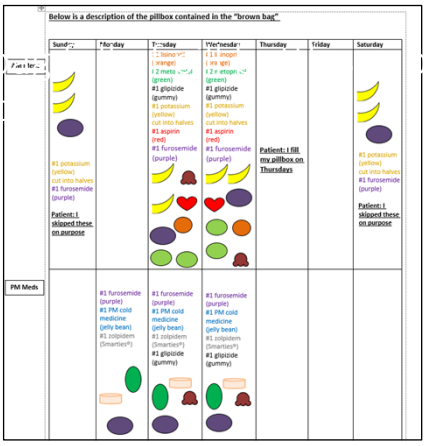
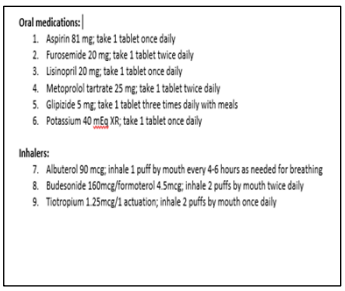


Pill Bottles



Pillbox



Oral medications:

1. Aspirin 81 mg; take 1 tablet once daily
2. Furosemide 20 mg; take 1 tablet twice daily
3. Lisinopril 20 mg; take 1 tablet once daily
4. Metoprolol tartrate 25 mg; take 1 tablet twice daily
5. Glipizide 5 mg; take 1 tablet three times daily with meals
6. Potassium 40 mEq XR; take 1 tablet once daily

Inhalers:

7. Albuterol 90 mcg; inhale 1 puff by mouth every 4-6 hours as needed for breathing
8. Budesonide 160mcg/formoterol 4.5mcg; inhale 2 puffs by mouth twice daily
9. Tiotropium 1.25mcg/1 actuation; inhale 2 puffs by mouth once daily

Medication List

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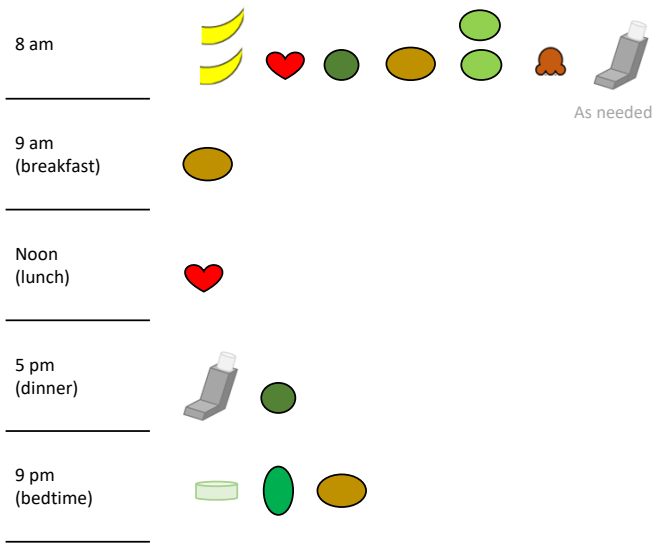
Complex Medication Regimen



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Multicomplexity and Medications

- Consider:
  - Physiology of Aging
  - Prognosis/Benefit Lag Time
  - Barriers to accessing healthcare
- Ask:
  - Are there any new concerns you have about your health?
  - How do you get your medications? How do you pay for them?
  - Are you able to travel by car? To drive? Public transportation?
- Solutions
  - Review, update, and prioritize problem list
  - Interprofessional care team support
  - Interpreter services as needed

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Multicomplexity and Medications

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Matters Most & Medications

- Consider:
  - Priorities
  - Goals
  - Care preferences
- Ask:
  - What parts of your day, or your life, are most important to you?
  - Are there any medications, or other aspects of your care, that hinder you from meeting your personal goals?
- Solutions
  - Identify problematic side effects
  - Patient-centered care goals
  - Interprofessional care team support

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Matters Most & Medications

patient priorities care | Choosing what matters. Doing what works.

JAMA Internal Medicine | Original Investigation

Association of Patient Priorities–Aligned Decision-Making With Patient Outcomes and Ambulatory Health Care Burden Among Older Adults With Multiple Chronic Conditions
A Nonrandomized Clinical Trial

Mary E. Tinetti, MD; Aanand D. Naik, MD; Lilian Dindo, PhD; Darce M. Costello, EdD, MPH, MBA; Jessica Esterson, MPH; Mary Geda, BN, MSN, RN; Jonathan Rosen, MD; Kizzy Hernandez-Bigos, BA; Cynthia Daisy Smith, MD; Gregory M. Ouellet, MD; Gina Kang, MD; Yungah Lee, MD; Caroline Blaum, MD

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Medications

Deprescribing

Planned or supervised process of **dose reduction** or **stopping medication(s)** that may be causing **harm** or **no longer providing benefit**

Scott IA et al. *JAMA*. 2015; 175(5):827-834.

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Fig. 1 The deprescribing rainbow highlighting the clinical, psychological, social, financial and physical determinants that should be considered when deciding to undertake an episode of deprescribing

Todd *et al.* The deprescribing rainbow. *BMC Geriatr* 2018

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Medications

Deprescribing Protocol: Reducing Inappropriate Polypharmacy

1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility → 4. Prioritize → 5. Implement and monitor deprescribing

Scott IA et al. *JAMA*. 2015; 175(5):827-834.

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Medications

- Alprazolam 1 mg twice daily
- Amlodipine 10 mg daily
- Atorvastatin 80 mg daily
- Diphenhydramine 25 mg as needed for sleep
- Lisinopril 40 mg daily
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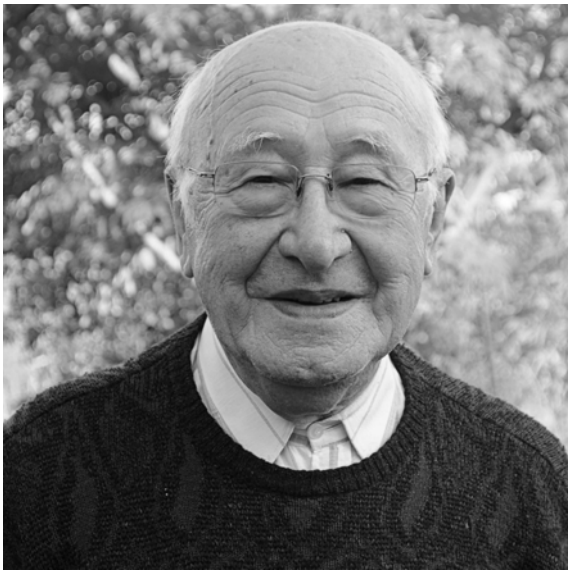

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1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility → 4. Prioritize → 5. Implement and monitor deprescribing

What is Mr. V actually taking?

Does this medication have an indication?

Amlodipine 10 mg daily

Alprazolam 1 mg twice daily

Atorvastatin 80 mg daily

Glyburide 10 mg twice daily

Metformin 500 mg daily

Lisinopril 40 mg daily

Omeprazole 20 mg daily

Diphenhydramine 25 mg as needed for sleep

Senna 8.6 mg daily as needed for constipation

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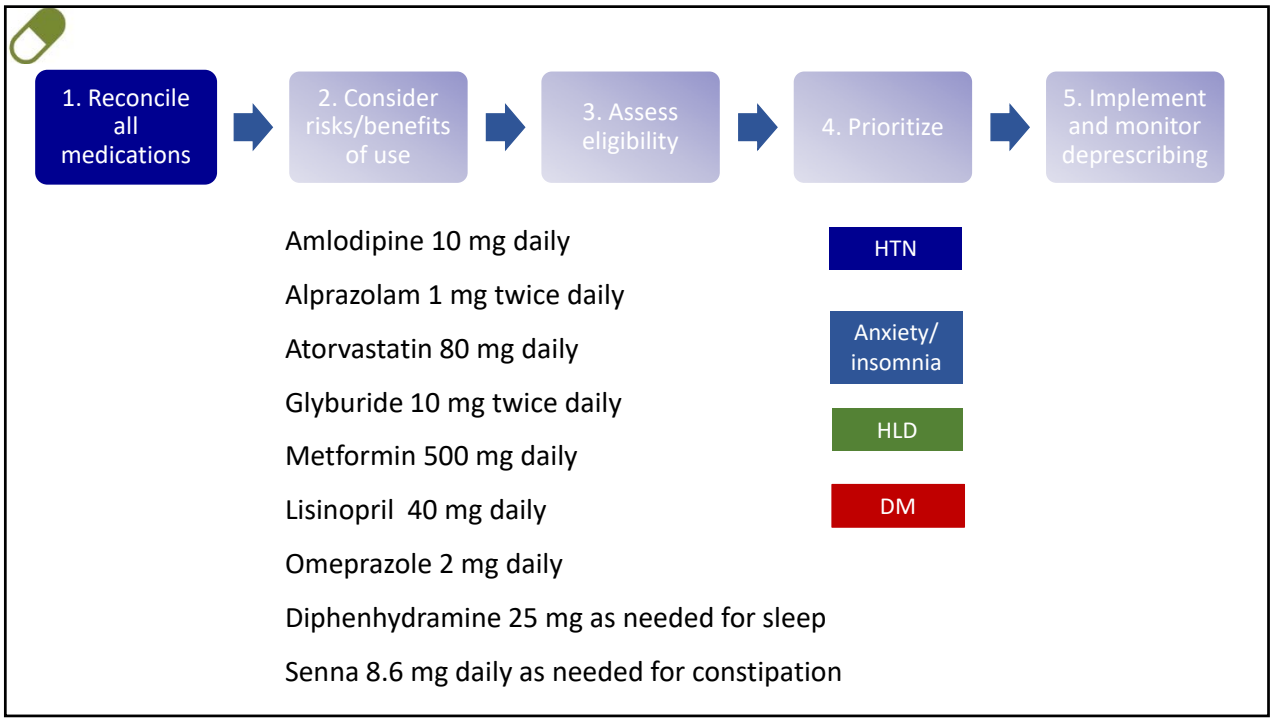
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Glyburide 10 mg twice daily
Metformin 500 mg daily
Lisinopril 40 mg daily
Omeprazole 2 mg daily
Diphenhydramine 25 mg as needed for sleep
Senna 8.6 mg daily as needed for constipation
HTN
Anxiety/ insomnia
HLD
DM

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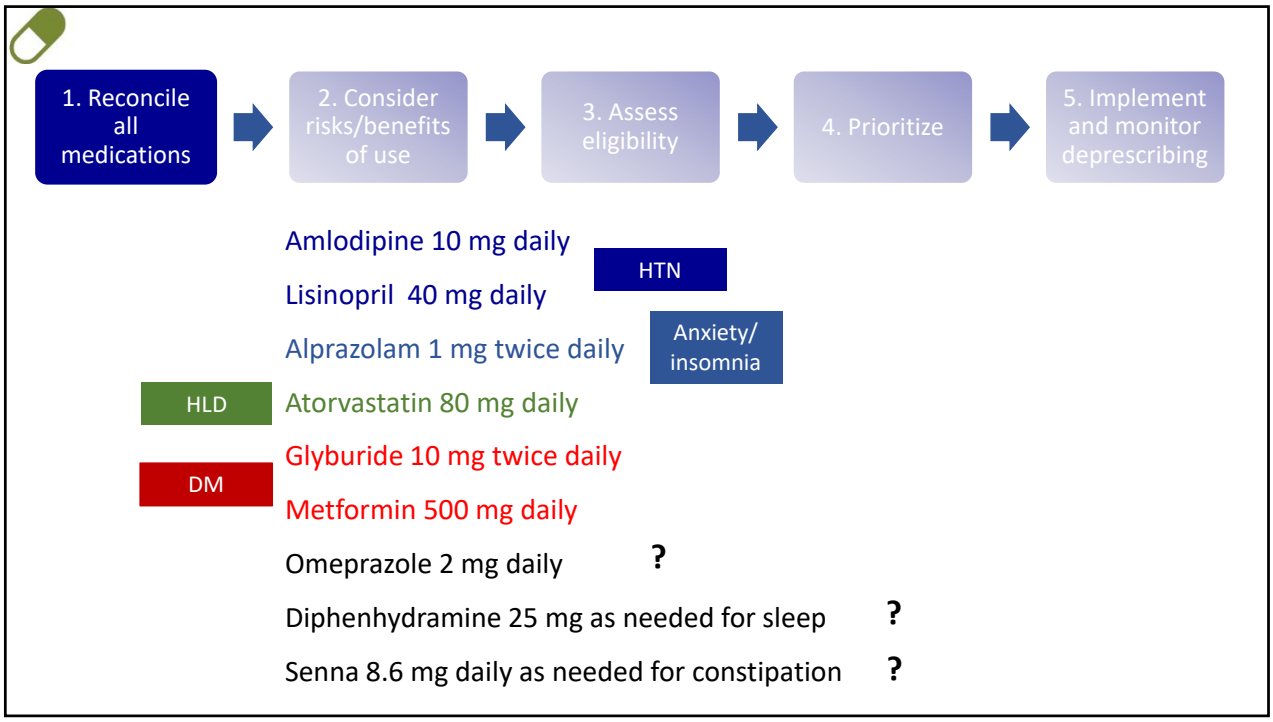
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Omeprazole 2 mg daily ?
Diphenhydramine 25 mg as needed for sleep ?
Senna 8.6 mg daily as needed for constipation ?
HTN
Anxiety/ insomnia
HLD
DM

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1. Reconcile all medications → **2. Consider risks/benefits of use** → 3. Assess eligibility → 4. Prioritize → 5. Implement and monitor deprescribing

- American Geriatrics Society Beers Criteria
- Medication Appropriateness Index
- Anticholinergic Risk Scale
- STOPP and START

AGS BEERS CRITERIA® 2019

AGS Beers Criteria, *JAGS* 2019
Hanlon JT et al. *J Clin Epidemiol.*1992
Gallagher P *Int J Clin Pharmacol Ther* 2008
Ruldolph et al. *Arch Intern Med* 2008
Phung E et al. *Journal of Palliative Medicine* 2018

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1. Reconcile all medications → **2. Consider risks/benefits of use** → 3. Assess eligibility → 4. Prioritize → 5. Implement and monitor deprescribing

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Glyburide 10 mg twice daily
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Lisinopril 40 mg daily
Omeprazole 20 mg daily
Diphenhydramine 25 mg as needed for sleep
Senna 8.6 mg daily as needed for constipation

AGS BEERS CRITERIA® 2019

AGS Beers Criteria 2015
Hanlon JT et al. *J Clin Epidemiol.*1992
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Phung E et al. *Journal of Palliative Medicine* 2018

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1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility

- Anticholinergic Risk Scale

Table 4. Anticholinergic Risk Scale[a]

3 Points	2 Points	1 Point
Amitriptyline hydrochloride	Amantadine hydrochloride	Carbidopa-levodopa
Atropine products	Baclofen	Entacapone
Benztropine mesylate	Cetirizine hydrochloride	Haloperidol
Carisoprodol	Cimetidine	Methocarbamol
Chlorpheniramine maleate	Clozapine	Metoclopramide hydrochloride
Chlorpromazine hydrochloride	Cyclobenzaprine hydrochloride	Mirtazapine
Cyproheptadine hydrochloride	Desipramine hydrochloride	Paroxetine hydrochloride
Dicyclomine hydrochloride	Loperamide hydrochloride	Pramipexole dihydrochloride
Diphenhydramine hydrochloride	Loratadine	Quetiapine fumarate
Fluphenazine hydrochloride	Nortriptyline hydrochloride	Ranitidine hydrochloride
Hydroxyzine hydrochloride and hydroxyzine pamoate	Olanzapine	Risperidone
Hyoscyamine products	Prochlorperazine maleate	Selegiline hydrochloride
Imipramine hydrochloride	Pseudoephedrine hydrochloride–triprolidine hydrochloride	Trazodone hydrochloride
Meclizine hydrochloride	Tolterodine tartrate	Ziprasidone hydrochloride
Oxybutynin chloride		

Ruldolph et al. *Arch Intern Med* 2008

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1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility → 4. Prioritize → 5. Implement and monitor deprescribing

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Alprazolam 1 mg twice daily

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Phung E et al. *Journal of Palliative Medicine* 2018

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1. Reconcile all medications → 2. Consider risks/benefits of use → **3. Assess eligibility** → 4. Prioritize → 5. Implement and monitor deprescribing

- Potential or active adverse reaction
- No indication
- Ineffective
- Prescribing cascade

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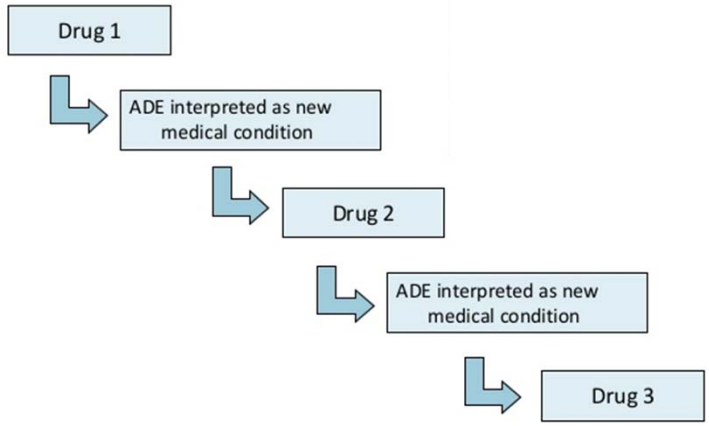
1. Reconcile all medications → 2. Consider risks/benefits of use → **3. Assess eligibility** → 4. Prioritize → 5. Implement and monitor deprescribing



"Any new symptom in an older adult should be considered a drug side effect until proven otherwise"

Rochon and Gurwitz, BMJ 1997

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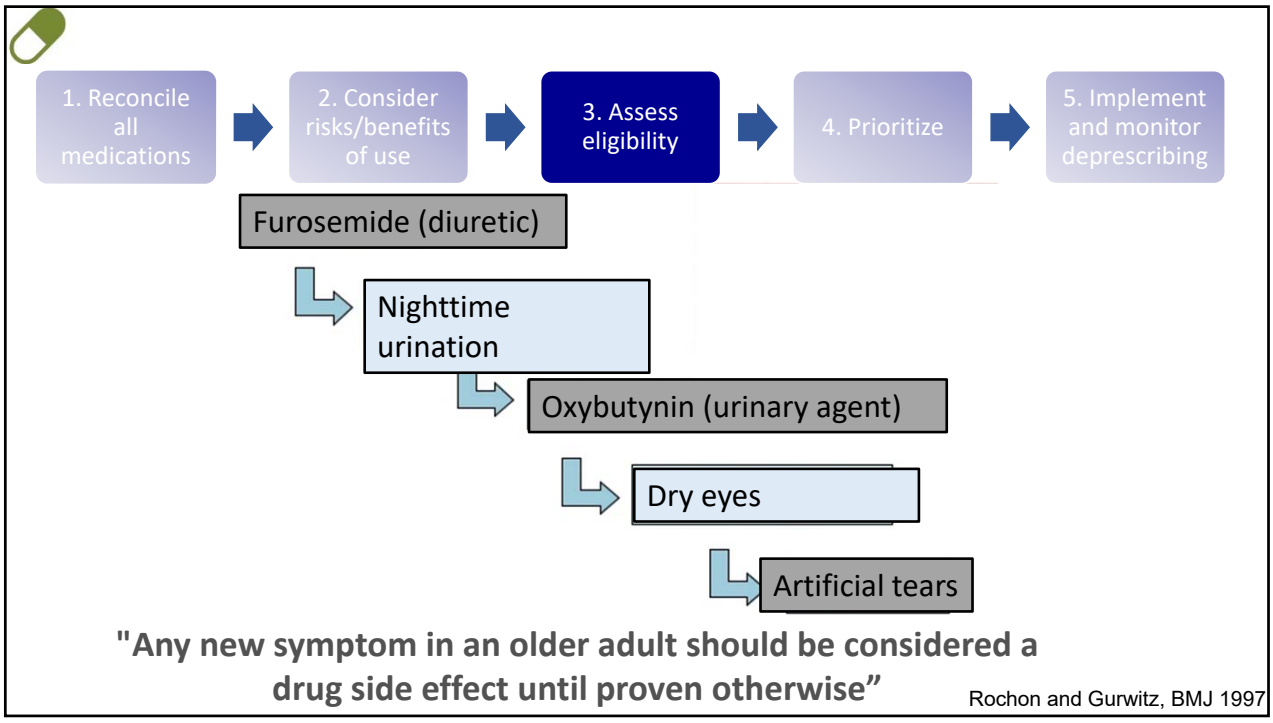
1. Reconcile all medications
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5. Implement and monitor deprescribing
Furosemide (diuretic)
Nighttime urination
Oxybutynin (urinary agent)
Dry eyes
Artificial tears
"Any new symptom in an older adult should be considered a drug side effect until proven otherwise"
Rochon and Gurwitz, BMJ 1997

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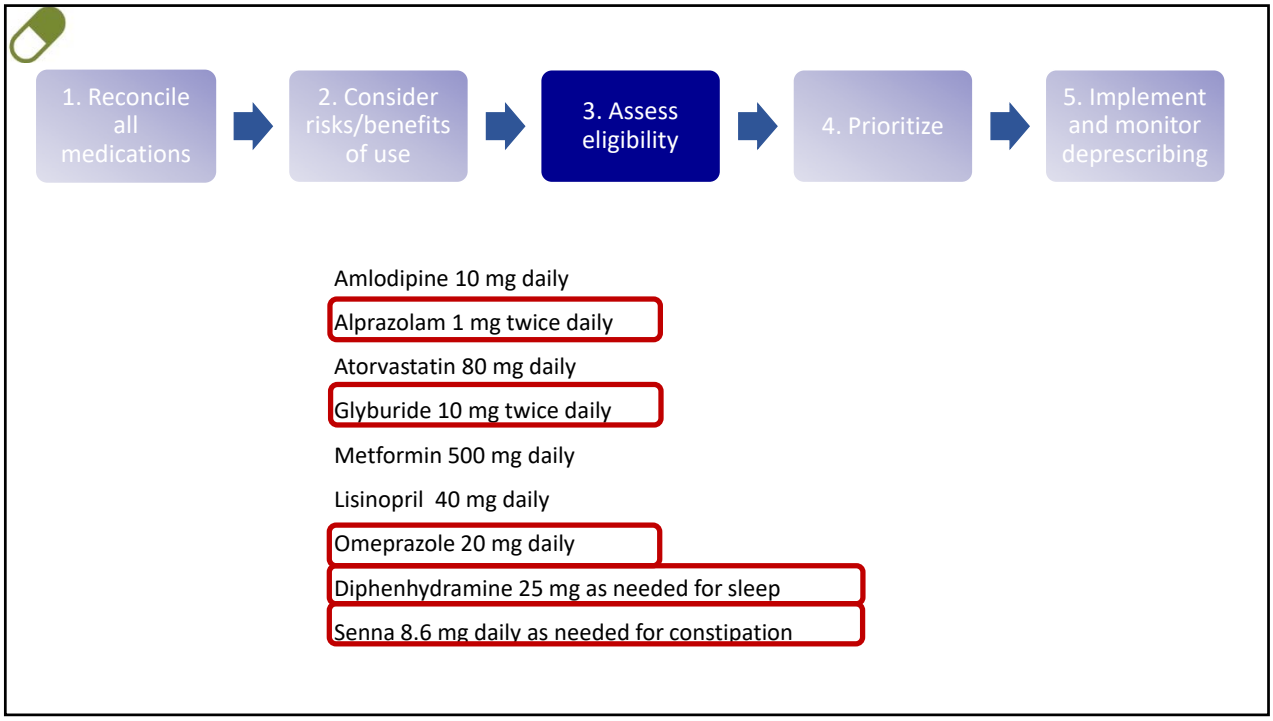
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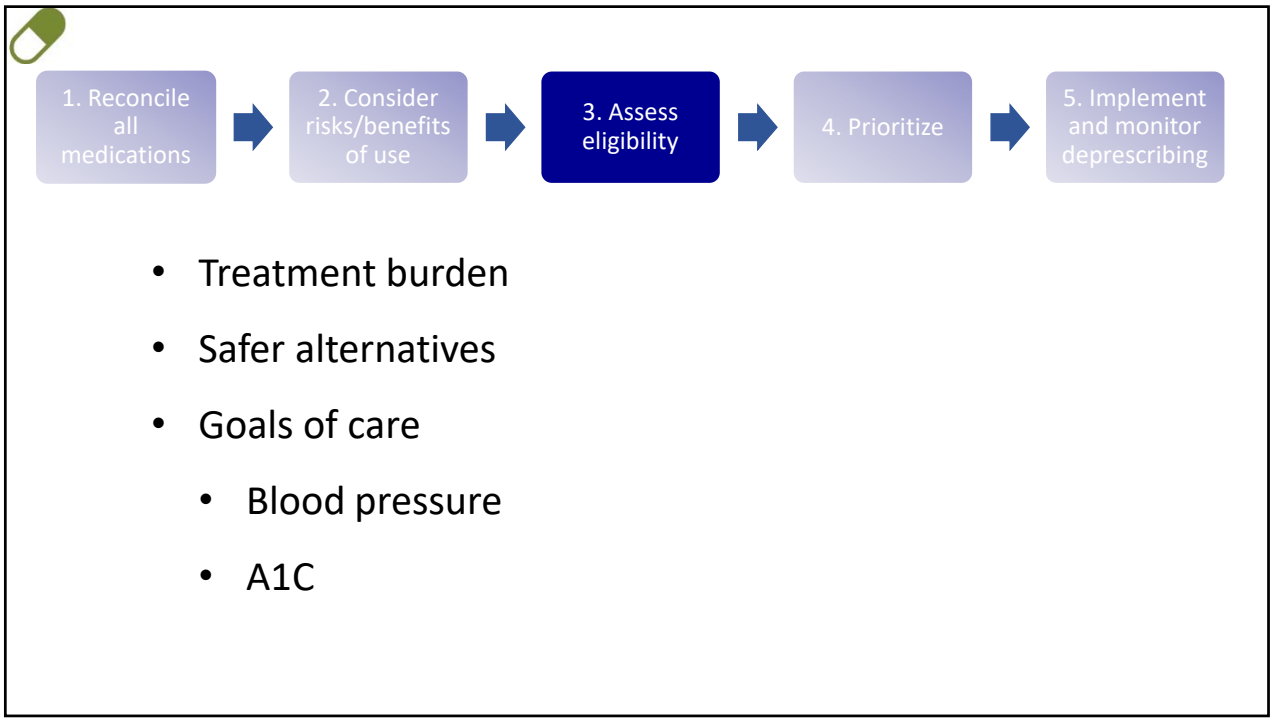

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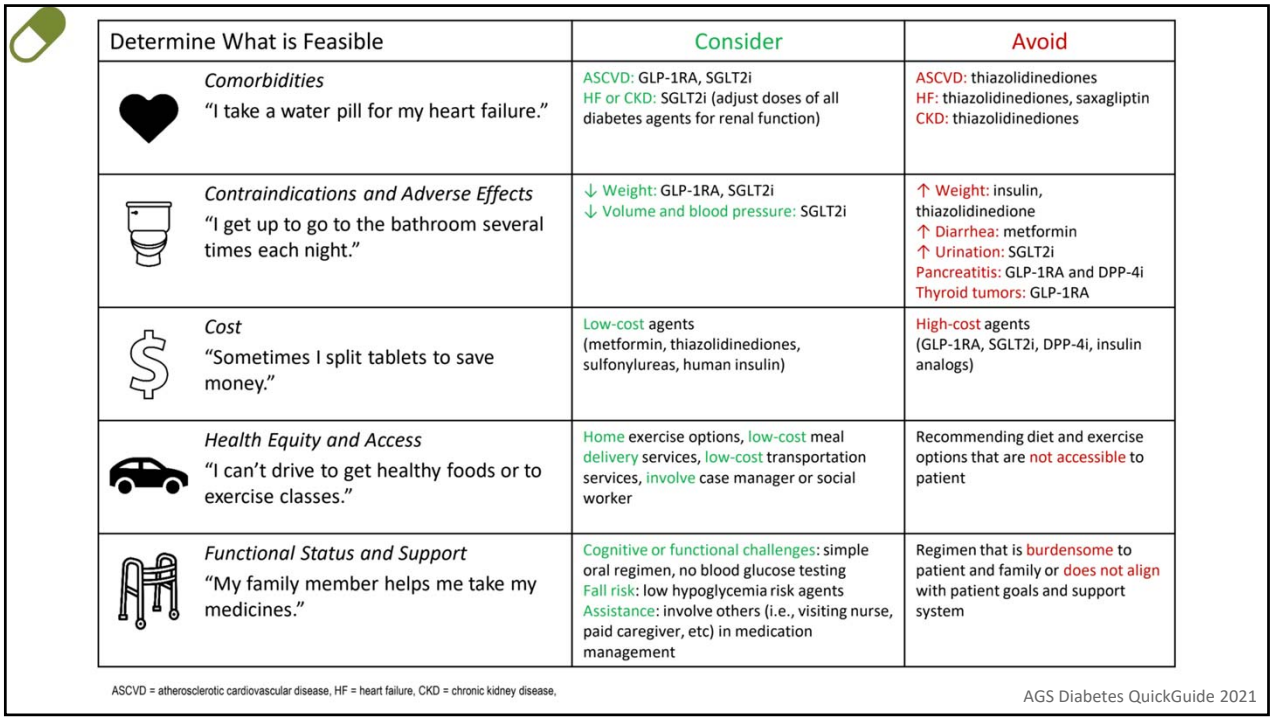

Determine What is Feasible	Consider	Avoid
Comorbidities "I take a water pill for my heart failure."	ASCVD: GLP-1RA, SGLT2i HF or CKD: SGLT2i (adjust doses of all diabetes agents for renal function)	ASCVD: thiazolidinediones HF: thiazolidinediones, saxagliptin CKD: thiazolidinediones
Contraindications and Adverse Effects "I get up to go to the bathroom several times each night."	↓ Weight: GLP-1RA, SGLT2i ↓ Volume and blood pressure: SGLT2i	↑ Weight: insulin, thiazolidinedione ↑ Diarrhea: metformin ↑ Urination: SGLT2i Pancreatitis: GLP-1RA and DPP-4i Thyroid tumors: GLP-1RA
Cost "Sometimes I split tablets to save money."	Low-cost agents (metformin, thiazolidinediones, sulfonylureas, human insulin)	High-cost agents (GLP-1RA, SGLT2i, DPP-4i, insulin analogs)
Health Equity and Access "I can't drive to get healthy foods or to exercise classes."	Home exercise options, low-cost meal delivery services, low-cost transportation services, involve case manager or social worker	Recommending diet and exercise options that are not accessible to patient
Functional Status and Support "My family member helps me take my medicines."	Cognitive or functional challenges: simple oral regimen, no blood glucose testing Fall risk: low hypoglycemia risk agents Assistance: involve others (i.e., visiting nurse, paid caregiver, etc) in medication management	Regimen that is burdensome to patient and family or does not align with patient goals and support system

ASCVD = atherosclerotic cardiovascular disease, HF = heart failure, CKD = chronic kidney disease,

AGS Diabetes QuickGuide 2021

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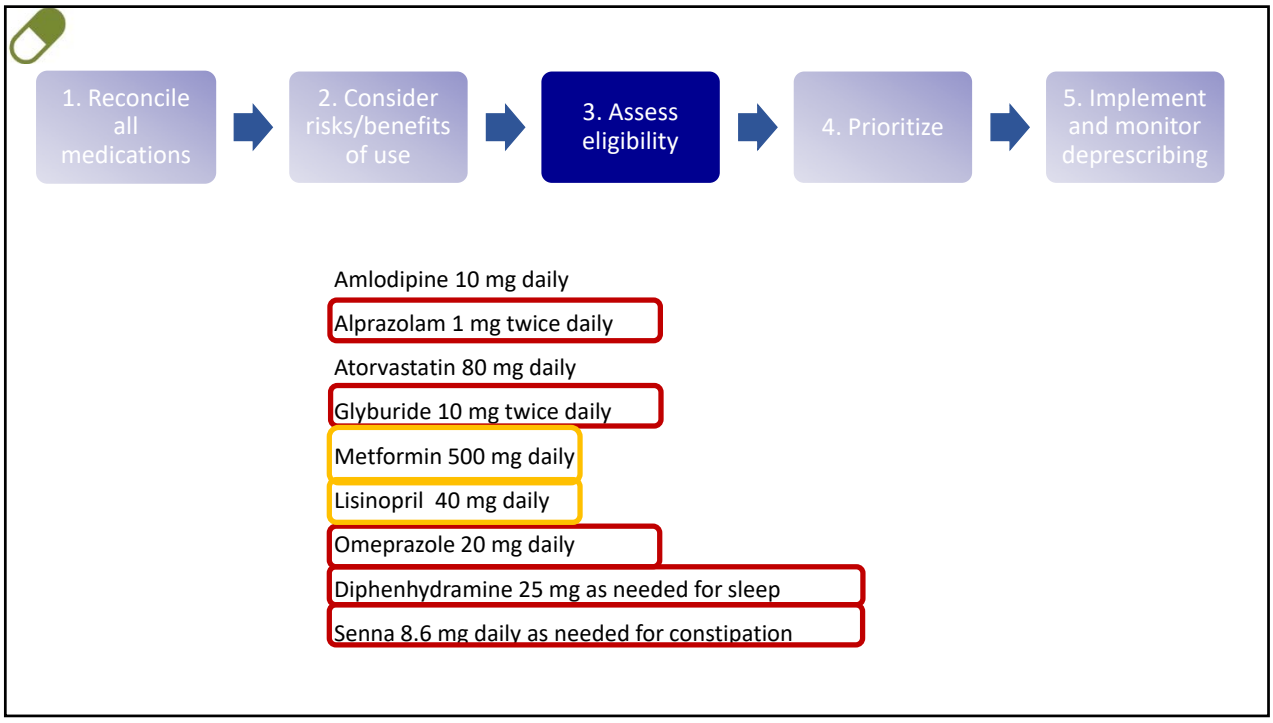
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Atorvastatin 80 mg daily
Glyburide 10 mg twice daily
Metformin 500 mg daily
Lisinopril 40 mg daily
Omeprazole 20 mg daily
Diphenhydramine 25 mg as needed for sleep
Senna 8.6 mg daily as needed for constipation

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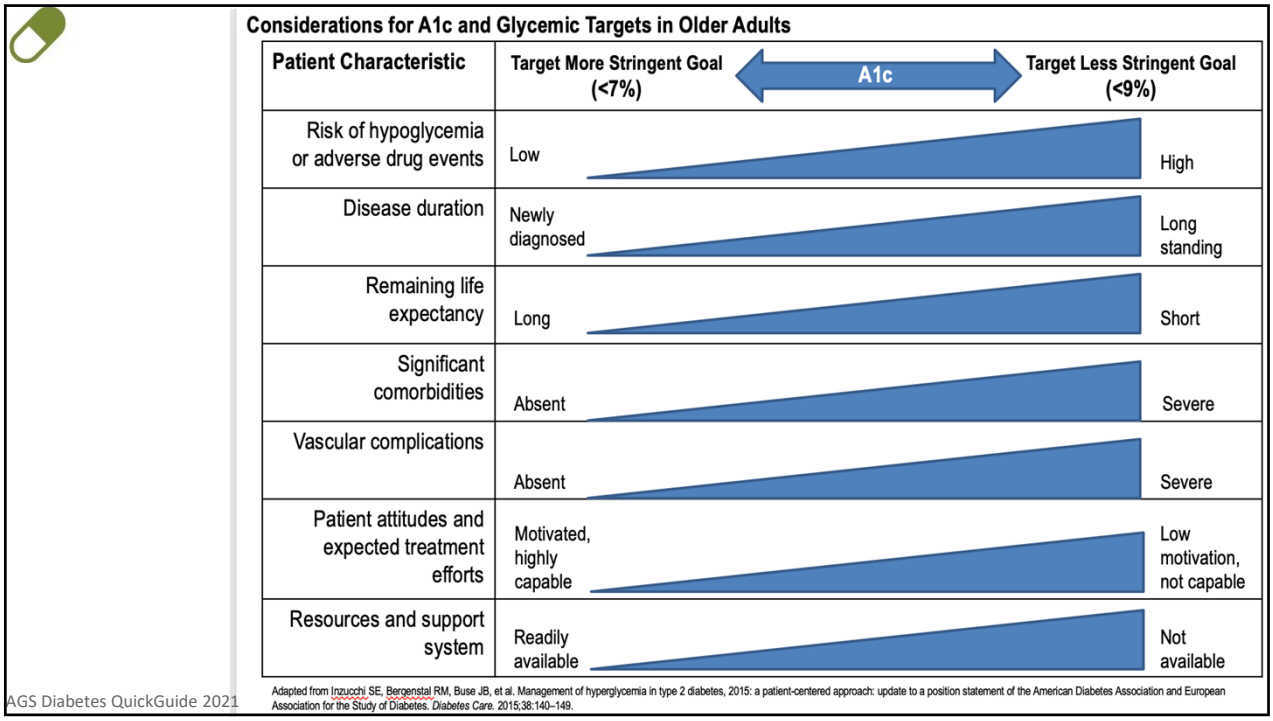
Considerations for A1c and Glycemic Targets in Older Adults
Patient Characteristic
Target More Stringent Goal (<7%)
A1c
Target Less Stringent Goal (<9%)
Risk of hypoglycemia or adverse drug events
Low
High
Disease duration
Newly diagnosed
Long standing
Remaining life expectancy
Long
Short
Significant comorbidities
Absent
Severe
Vascular complications
Absent
Severe
Patient attitudes and expected treatment efforts
Motivated, highly capable
Low motivation, not capable
Resources and support system
Readily available
Not available
AGS Diabetes QuickGuide 2021
Adapted from Inzucchi SE, Bergenstal RM, Buse JB, et al. Management of hyperglycemia in type 2 diabetes, 2015: a patient-centered approach: update to a position statement of the American Diabetes Association and European Association for the Study of Diabetes. Diabetes Care. 2015;38:140–149.

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Medications

1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility → **4. Prioritize** → 5. Implement and monitor deprescribing

- Priority
  - Benefit vs harm
  - Easiest to discontinue
  - Patient "buy-in"
  - Complex regimens
  - Cost

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1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility → **4. Prioritize** → 5. Implement and monitor deprescribing

Discuss Patient Preferences	Consider	Avoid
 Blood glucose monitoring "My fingers are like pin cushions from all this testing."	Low hypoglycemia risk agents → less testing or no testing (metformin, SGLT-2i, GLP-1RA, DPP-4i)	High hypoglycemia risk agents → more testing (sulfonylureas and insulin, especially bolus or sliding-scale insulin)
 Route of administration "I have a fear of needles."	Oral agents (metformin, SGLT-2i, DPP-4i, TZD)	Injectable agents (most GLP-1RA and insulin)
 Pill burden "I take way too many medications."	Once daily agents (metformin extended release, GLP-1RA, SGLT-2i, DPP-4i, TZD, basal insulin) Once weekly agents (GLP-1RA) Deprescribe other diabetes agents	Multiple daily dosing (metformin immediate release, sulfonylurea, bolus, or sliding-scale insulin)

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1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility → **4. Prioritize** → 5. Implement and monitor deprescribing

- Anticipated barriers
  - Rebound symptoms
  - Withdrawal symptoms
  - Patient attachment
  - Patient/provider relationship

deprescribing.org

MEDSTOPPER

US Deprescribing Research Network

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RESEARCH ARTICLE Open Access

Patient and provider perspectives on the development and resolution of prescribing cascades: a qualitative study

Barbara J. Farrell[1,2,3*], Lianne Jeffs[4,5], Hannah Irving[1] and Lisa M. McCarthy[6,7]

CLINICAL PRACTICE GUIDELINES

Deprescribing benzodiazepine receptor agonists

Evidence-based clinical practice guideline

Kevin Pottie MD MCISc CCFP FCFP Wade Thompson RPh MSc Simon Davies DM MB BS MSc Jean Grenier PhD CPsych Cheryl A. Sadowski PharmD Vivian Welch PhD Anne Holbrook MD PharmD MSc Cynthia Boyd MD MPH Robert Swenson MD Andy Ma Barbara Farrell PharmD ACPR FCSHP

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Original Investigation

Reduction of Inappropriate Benzodiazepine Prescriptions Among Older Adults Through Direct Patient Education
The EMPOWER Cluster Randomized Trial

Cara Tannenbaum, MD, MSc; Philippe Martin, BSc; Robyn Tamblyn, PhD; Andrea Benedetti, PhD; Sara Ahmed, PhD

You May Be at Risk

You are taking one of the following sedative-hypnotic medications:

◯ Alprazolam (Xanax®) ◯ Diazepam (Valium®) ◯ Temazepam (Restoril®)

Tannenbaum et al, JAMA Internal Med; http://www.criugm.qc.ca/fichier/pdf/BENZOeng.pdf

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1. Reconcile all medications → 2. Consider risks/benefits of use → 3. Assess eligibility → 4. Prioritize → 5. Implement and monitor deprescribing

- Written instructions
- Patient involvement
- Follow-up scheduled
- Back-up plan/threshold to restart
- Monitor for adverse drug withdrawal events

Stopping a medication should be done with the same considerations as starting one

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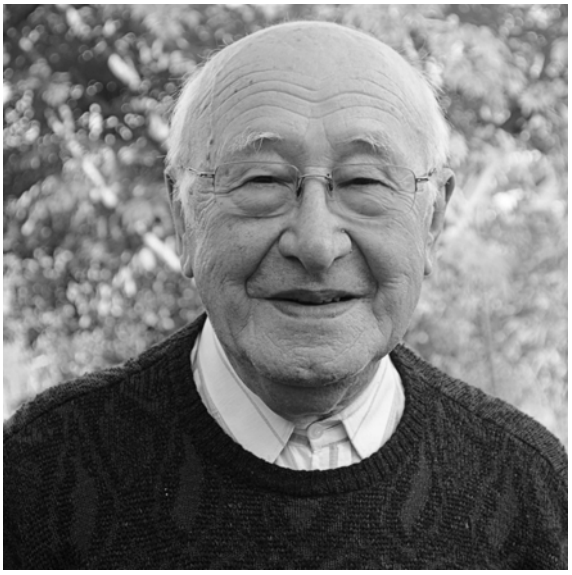
Medications

What are your final recommendations for Mr. V?

1. Stop taking **diphenhydramine**
2. Taper **alprazolam**
   - See deprescribing.org
3. Taper **omeprazole**
   - Tums on demand
4. Stop taking **glyburide** and monitor sugars, A1c
5. Evaluate for orthostatic hypotension or symptoms



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Strategies for Deprescribing

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