



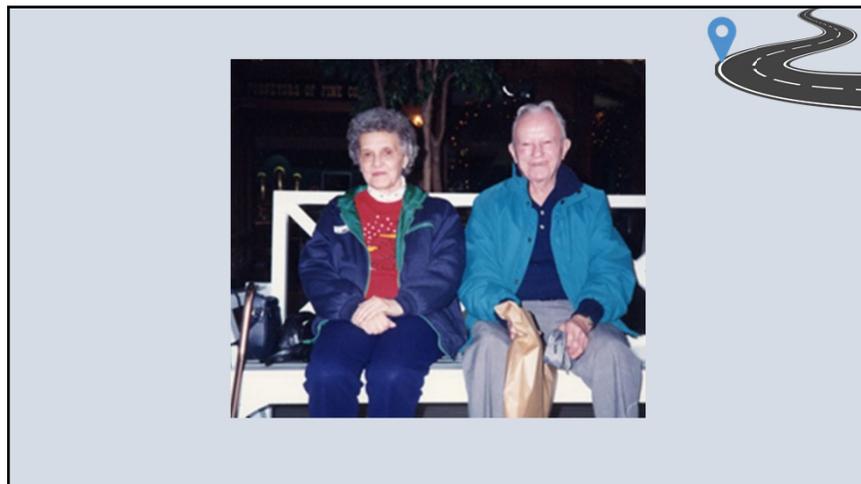
Cases in Geriatrics: Navigating Polypharmacy

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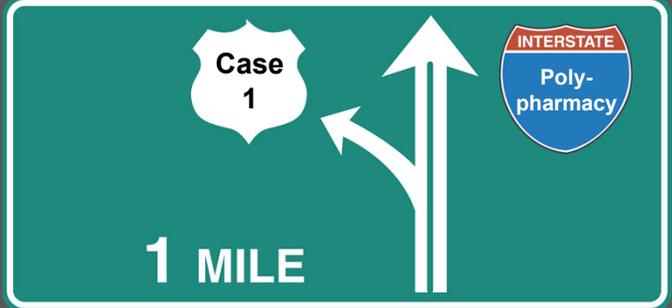
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📍 Learning Objectives

- Understand the negative consequences of polypharmacy among older adults.
- Learn about the de-prescribing and what medications are no longer considered helpful for older adults.
- Discuss how to safely reduce polypharmacy in real-world settings among older adults.
- Describe barriers to reducing polypharmacy and means of overcoming these barriers.



EXIT Do I need all these meds?

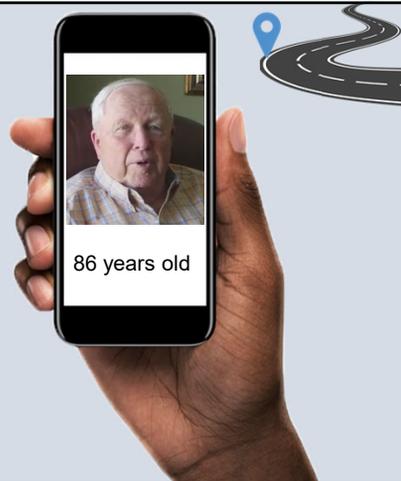


86-year-old with...

- PMH Hypertension (HTN)
- Benign Prostatic Hypertrophy (BPH) Low Back Pain/Muscle Spasms
- Constipation
- Coronary Artery Disease (CAD) s/p CABG
- Asthma
- Gastroesophageal Reflux Disease (GERD)

Specialists

- Pulmonologist
- Cardiologist
- Rheumatologist
- Urologist
- Gastroenterologist

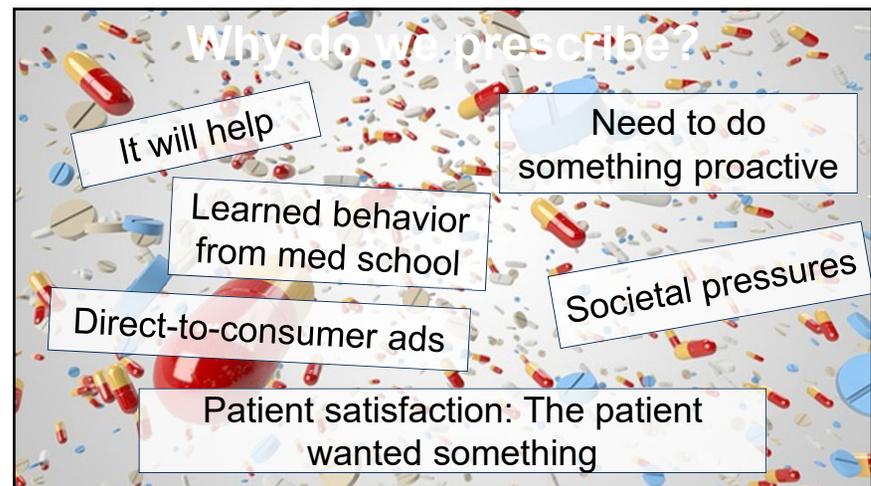


Medication List

Medication	Order Detail
AMLODIPINE 5 MG TABS	TAKE 1 TABLET DAILY, AS DIRECTED
asprin 325 MG TABS	1 TABLET DAILY
Azelastine HCl (ASTELIN) 137 MCG/SPRAY SOLN	2 sprays each nostril twice a day
baclofen 20 MG TABS	20mg BID, 10mg daily
BILEVEL PRESCRIPTION	air touch full face mask - medium
BILEVEL ST PRESCRIPTION	s-10 aircurve asy in asvauto mode. epap5-15 ps 3-15, climate control line, chin strap and hur
BISACODYL HR	1 suppository qhs
Budesonide-Formoterol Fumarate (SYMBICORT) 80-4.5 MCG/IA...	Two puffs BID, rinse mouth after use
Calcium Carbonate-Vitamin D (CALCIUM + D PO)	None Entered
CORTIFOAM 10 % FOAM	None Entered
COUGH ASSIST MACHINE PRESCRIPTION	Please send vital cough assist supplies. (Patient taking differently; use BID as directed)
CPAP PRESCRIPTION	auto ASV mode with EPAP max = 15 cm H2O, EPAP min = 5 cm H2O, PS max = 3 , PS m
CPAP PRESCRIPTION	please provide CPAP download report and fax to 312-695-4741. please give pt new SD card.
ezetimibe (ZETIA) 10 MG TABS	TAKE 1 TABLET DAILY
Fesoterodine Fumarate (TOVIAZ) 8 MG TB24	1 TABLET DAILY
Fluticasone Propionate (FLONASE NA)	2 spray per nostril
GENTAMICIN 480 mg in NS 1L compounded GU irrigation	Instill 50-60 cc intravesically daily
hydrocodone-acetaminophen (NORCO) 10-325 MG TABS	One or two tablets by mouth every four to six hours as needed for pain
Inhalant (XOPENEX) 0.53 MG/3ML NEBU	2 times a day as needed
lubprostone (AMITIZA) 24 MCG CAPS	AMITIZA 24 MCG PO BID w/ food
Magnesium Hydroxide (MILK OF MAGNESIA PO)	None Entered
Melatonin 1 MG CAPS	AS NEEDED
modafinil (PROVIGIL) 200 MG TABS	1 TABLET TWICE DAILY/
MONOJECT SYRINGE CATH TIP 60 ML MISC	AS DIRECTED
mirabegron (MIRAPONS) 0.53 MG/3ML NEBU	1 TAB EVERY 5 MIN AS NEEDED, UP TO 3 PER EPISODE
omeprazole (PRILLOSEC) 40 MG OPCR	1 CAPSULE bid
PARI LC PLUS NEBULIZER MISC	USE AS DIRECTED
Pramipexole Dihydrochloride 0.25 MG TABS	TAKE THREE TABLETS TWO HOURS BEFORE BEDTIME
Pravastatin Sodium 40 MG TABS	TAKE 1 TABLET AT BEDTIME
valsartan (DIOVAN) 160 MG TABS	1/2 tablet (60mg) PO daily

Polypharmacy

- Use of multiple medications and/or the administration of more medications than are clinically indicated, representing unnecessary use
- Common among the elderly
- Studies have shown that 55-60% of outpatients > 65 yrs take medications that are suboptimal or lacking an indication
- Negative Consequences:
 - Adverse drug reaction (ADR), Increased risk of morbidity – including Cognitive Impairment, Urinary Incontinence, Falls, Hospitalizations, Delirium, Weight loss
 - Implications for Adherence, Financial Hardship, Mortality



📍 Key to Med List De-prescribing

Reason:

- Every drug should have a reason

Repeats:

- Check for repeats (especially among multiple providers/settings)

Reversals:

- Drugs to counteract other drugs

Remains:

- Meds that began short term but then became long-term (Also those used >20 years)



📍 I need something to help me sleep?

- No.
- You need to be off of some of these medicines.
- Sleeping during the day?

. baclofen 20 MG TABS	20mg BID, 10mg daily
. Melatonin 1 MG CAPS	AS NEEDED
. modafinil (PROVIGIL) 200 MG TABS	1 TABLET TWICE DAILY/

- Limit naps
- Urinating 6 times a night?
 - Limit alcohol and fluids after 6PM

📍 When did you start that medicine?

- Before I retired, I was a sales executive and was dealing with a lot of stress.

“My doc gave me alprazolam (Xanax) to help my stress and another doc gave me temazepam (Restoril) to help me sleep. They also gave me omeprazole (Prilosec) for my GERD.”

. omeprazole (PRILOSEC) 40 MG CPDR 1 CAPSULE bid

[DO NOT USE BENZOS WITH SENIORS!!!!]

- If lifestyle has changed, think about de-prescribing
- Perfect time is looking at refills

EXIT

Mom is more confused. Help?



- 95-year-old with...
 - PMH Moderate Frontotemporal Dementia (MOCA 15)
 - Constipation
 - Osteoarthritis
 - Glaucoma and Macular Degeneration
 - Seasonal Allergies
- Recently discharged from the hospital for a pneumonia and finishing an antibiotics course.
- Went to a skilled nursing facility where she stayed for 3 days and then returned home because of agitation.
- Daughter is Primary Caregiver and lives with her. Noticed that she is much more confused!



Quinolones

- Ciprofloxacin, Levofloxacin, Moxifloxacin
- CNS excitatory effects of quinolone = agitation
- Many adverse reactions, such as confusion, weakness, loss of appetite, tremor or depression, are often mistakenly attributed to old age.
- Widely associated with C. diff infections (carries 50% mortality in seniors)
- Hypoglycemia and Hypoglycemic comas
- Increased risk of tendon rupture

Rx Aspirin
 Levofloxacin (Levaquin)
 Acetaminophen
 Diphenhydramine (Benadryl)
 Timolol Eye Drops
 Cyclobenzaprine (Flexeril)
 Temazepam (Restoril)

The FDA noted that safety reviews have shown that fluoroquinolones, when used systemically are associated with disabling and potentially permanent serious side effects that can occur together. These side effects can involve the tendons, muscles, joints, nerves, and central nervous system. As a result, the FDA required manufacturers to update fluoroquinolone drug labeling and their associated Medication Guides to reflect this new safety information.

What type of Acetaminophen (Tylenol) are you taking?

“After coming home from the hospital and nursing home, Mom couldn’t sleep.”

“I switched mom over to Tylenol PM.”

- PM = Diphenhydramine = Confusion
- NO GOOD

“Since it’s spring and her seasonal allergies are kicking in, I started her on Benadryl.”

Rx Aspirin
 Levofloxacin (Levaquin)
 Acetaminophen
 Diphenhydramine (Benadryl)
 Timolol Eye Drops
 Cyclobenzaprine (Flexeril)
 Temazepam (Restoril)

- Don’t use Benzodiazepines or Diphenhydramine in Older adults as choice for insomnia, agitation, delirium.
- Check OTCS

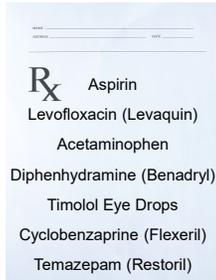


Choosing Wisely

***AGS Choosing Wisely Workgroup. American Geriatrics Society Identifies Another Five Things That Providers and Patients Should Question. J Am Geriatr Soc 2014; 62:1-11.

📍 Muscle relaxants = Confusion

- Cyclobenzaprine was started in the Skilled nursing facility to help with muscle aches with therapy.
- Cyclobenzaprine (Flexeril), carisoprodol (Soma), metaxalone (Skelaxin), orphenadrine (Norflex)
- Anticholinergic Side Effects
- Cognitive impairment, Sedation, Weakness, urine retention.
- Questionable efficacy at lower doses



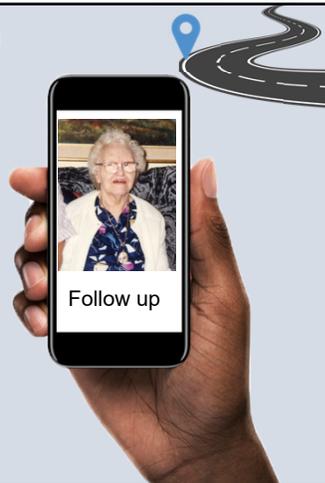
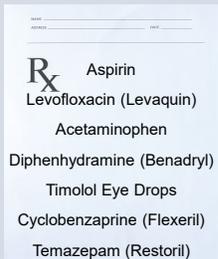
Instead = Heat, Ice, Creams (capsaicin, menthol)

📍 Does she still need that Aspirin?

- No
- For Primary Prevention, no longer considered helpful in patients over the age of 70 years



- Stopped meds that could cause confusion
- Improved symptoms – Much Less Confused
- Going to Adult Day Care to help with Caregiver Stress



EXIT

Grandma is not Eating?

**Case
3**

**INTERSTATE
Poly-
pharmacy**

1 MILE

89-year-old with...

- PMH Severe Osteoarthritis–wheelchair bound
- Hypercholesterolemia
- Constipation
- Mild Cognitive Impairment
- Spouse died 3 months ago
- Moved in with granddaughter and husband
- Coming to see you to establish new a Primary Care Provider



Medications

- Atorvastatin (Lipitor) 10 mg PO nightly
- Donepezil (Aricept) 10 mg PO daily
- Dronabinol (Marinol) 5 mg PO twice daily
- Megestrol (Megace) 800 mg PO daily
- Oxandrolone (Oxandrin) 5 mg PO twice daily
- Acetaminophen 1000 mg PO three times daily
- Zinc supplement daily
- Multi-Vitamin daily

Exam

- Cachectic
- Weight = 88 lbs (prior documented 100 lbs)
- Height = 5 feet tall
- Blood Pressure 100/60, Heart Rate 90
- Bilateral +3 Lower Extremity Edema



What should you ask?

- Diet History?
 - *Granddaughter is a yoga instructor who adheres to a whole-food vegan diet. Patient eats alone for breakfast and lunch.*
- How's your Mood?
 - *High risk for depression (Moved from home, spousal death)*
 - *PHQ -2 positive (>3)*
- How's your thinking?
 - *Mini-Cog is perfect! MOCA is 27/30.*

Over the past 2 weeks, how often have you been bothered by any of the following problems?	Not At all	Several Days	More Than Half the Days	Nearly Every Day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed or hopeless	0	1	2	3

Cognitive Testing

- Mini-cog (3 words, clock draw, recall words)

- Dog
- Penny
- Apple



- Dog
- Penny

Montreal Cognitive Assessment (MOCA)
www.mocatest.org
 30 different languages, blind, multiple versions

Borson S, Scanlan JM, Chen PJ et al. The Mini-Cog as a screen for dementia: Validation in a population-based sample. J Am Geriatr Soc 2003;51:1451-1454.

Medications

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- Acetaminophen 1000 mg PO three times daily
- Zinc supplement daily
- Multi-Vitamin daily

Does she need to be on Donepezil?

- No.
- Can cause loss of appetite and worsening constipation.
- NEVER used mild cognitive impairment, subjective memory loss.
- NOT for prevention.

NAME _____ DATE _____
 ADDRESS _____

Rx Atorvastatin (Lipitor)
 Donepezil (Aricept)
 Dronabinol (Marinol)
 Megestrol (Megace)
 Oxandrolone (Oxandrin)
 Acetaminophen
 Zinc supplement daily
 Multi-Vitamin daily

Don't prescribe cholinesterase inhibitors for dementia without periodic assessment for perceived cognitive benefits and adverse gastrointestinal effects



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Does she need to be on Atorvastatin?

- No.
- No history of CAD or CVA.
- Could be causing aches/pains
- Likely outlived its utility...

"You have graduated to fewer meds."

Adults 76 years and older with no history of CVD

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of initiating statin use for the primary prevention of CVD events and mortality in adults 76 years and older without a history of heart attack or stroke

NAME _____ DATE _____
ADDRESS _____

Rx Atorvastatin (Lipitor)
Donepezil (Aricept)
Dronabinol (Marinol)
Megestrol (Megace)
Oxandrolone (Oxandrin)
Acetaminophen
Zinc supplement daily
Multi-Vitamin daily

Statin for Primary Prevention of CV events and mortality in old and very old adults with and without T2DM

Conclusions:

- In participants >74 years w/out T2DM, statin treatment was not associated w/ a reduction in ASCVD or in all cause mortality, even when the incidence of ASCVD was statistically significantly higher than the risk thresholds proposed for statin use.
- In the presence of diabetes, statin use was statistically significantly associated w/ reductions in the incidence of ASCVD and in all cause mortality. This effect decreased >85 years and disappeared in nonagenarians

Ramos R. BMJ. 2018 Sep 5;362:k3359

Differing Guidelines on Statins Secondary to Publication Dates: No Recommendation on ≥Age 85

	56 y/o	66 y/o	76 y/o	86 y/o
ACA/AHA	Class 1 😊	Class 1 😊	Class IIb 😞	Class IIb 😞
NICE	STRONG 😊	STRONG 😊	STRONG 😊	WEAK 😞
CCS	STRONG 😊	STRONG 😊	WEAK 😞	WEAK 😞
USPSTF	Level B 😊	Level B 😊	X	X
ESC/EAS	X	Class IIa 😞	Class IIa 😞	Class IIa 😞

Adapted from Mortensen, MB et al. J Am Coll Cardiol. 2018;71(1):85-94.

Does she need to be on Appetite Stimulants?

- No.
 - Has been having worsening leg edema.
 - Common side effect.
 - Another side effect is confusion.
- Research shows at most ONE pound...
...increase in ONE year of use.

NAME _____ DATE _____
ADDRESS _____

Rx Atorvastatin (Lipitor)
Donepezil (Aricept)
Dronabinol (Marinol)
Megestrol (Megace)
Oxandrolone (Oxandrin)
Acetaminophen
Zinc supplement daily
Multi-Vitamin daily

Avoid using prescription appetite stimulants or high-calorie supplements for treatment of anorexia or cachexia in older adults.



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High Calorie Supplements?

Nutrition, Taste, and Cost

Ensure or Boost

Serving Size 1 bottle (8oz)

Amount Per Serving	Calories from Fat 50
Calories 250	
	% Daily Values*
Total Fat 6g	9%
Saturated Fat 1g	5%
Polysaturated Fat 3g	
Monounsaturated Fat 2g	
Trans Fat 0g	
Cholesterol 5mg	2%
Sodium 190mg	8%
Potassium 390mg	
Total Carbohydrate 40g	13%
Dietary Fiber 1g	4%
Sugars 22g	
Protein 9g	
Vitamin A 25%	Vitamin C 50%
Calcium 30%	Iron 25%

* Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

8 oz regular Yogurt

Serving Size 1 8 oz container

Amount Per Serving	Calories from Fat 32
Calories 143	
	% Daily Values*
Total Fat 3.52g	5%
Saturated Fat 2.27g	11%
Polysaturated Fat 0.1g	
Monounsaturated Fat 0.967g	
Cholesterol 14mg	5%
Sodium 159mg	7%
Potassium 531mg	
Total Carbohydrate 15.99g	5%
Dietary Fiber 0g	0%
Sugars 15.98g	
Protein 11.92g	
Vitamin A 0%	Vitamin C 3%
Calcium 42%	Iron 1%

* Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

1 slice Cheddar Cheese

Serving Size 1 slice (1 oz)

Amount Per Serving	Calories from Fat 94
Calories 113	
	% Daily Values*
Total Fat 9.28g	14%
Saturated Fat 5.906g	30%
Polysaturated Fat 0.264g	
Monounsaturated Fat 2.629g	
Cholesterol 29mg	10%
Sodium 174mg	7%
Potassium 27mg	
Total Carbohydrate 0.36g	0%
Dietary Fiber 0g	0%
Sugars 0.15g	
Protein 6.97g	
Vitamin A 6%	Vitamin C 0%
Calcium 20%	Iron 1%

* Percent Daily Values are based on a 2000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.

Follow-up

- Depressed → Added Mirtazapine (Remeron) 15 mg daily
- Leg swelling decreased
- Liberalized diet → No need to start vegan diet at 89 y/o
- SOCIAL EATING.... New Great Grandbaby... New Weight Gain

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Donepezil (Aricept)
Dronabinol (Marinol)
Megestrol (Megace)
Oxandrolone (Oxandrin)
Acetaminophen
Zinc supplement daily
Multi-Vitamin daily



Rx Mirtazapine
Acetaminophen
Multi-Vitamin daily



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Reversals:

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Remains:

- Meds that began short term but then became long-term (Also those used >20 years)



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IN US NEWS AND
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