Medication Optimization for the Primary Care Provider

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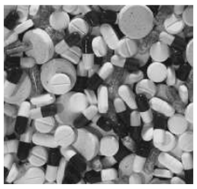
Dr Vicki's First Rule of Geriatrics

- If a bad thing is happening to a patient, a drug did it until proven otherwise



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MRS B.

- She is a 78 year old lady with CAD, HTN, HL
- She had a STEMI 2 months ago
- In and out of the hospital
- Her PCP asked her to bring in her medication bottles to her next appointment…

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Do the Brown Bag Test: have your patients bring all their meds in!

- Go through
  - Medicine cabinets
  - Bedside tables
  - Kitchen table
- Include
  - Rx
  - OTC
  - Vitamins
  - Supplements

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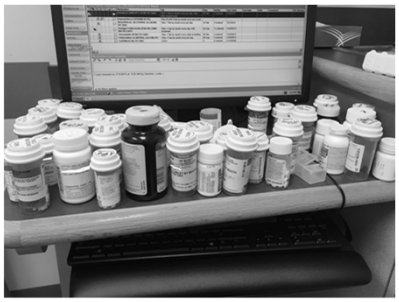
Mrs. B's pill bottles



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Brown Bag Review pays off…

Two months after her bare metal stent:

- *Wonder if her cardiologist knows that her aspirin expired 17 years ago….*

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And then, there is my dad who just puts all his pills in one bottle…

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What is polypharmacy?

- Number of meds
  - Most studies suggest more than 5
- Unnecessary meds
  - No indication
- Inappropriate meds
  - Ineffective
  - Duplication
  - No further benefit

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Polypharmacy

- More than 40% of older adults take >5 or more medications a day
  - 200% increase over 20 years
- Risk of suffering an ADE increases by 7-10% for each drug added
- In the next decade, if prescribing patterns do not change older adults will…
  - Experience 74 million adverse drug events requiring medical care
  - Be hospitalized 5 million times

-Moriarity F, Hardy C, Bennett K, Smith SM, Fahey T. Trends and interaction of polypharmacy and potentially inappropriate prescribing in primary care over 15 years in Ireland: a repeated cross-sectional study.
- Onder G, Marengoni A. Polypharmacy. JAMA. 2017;318(17):1728. doi:10.1001/jama.2017.15764
- http://www.ihi.org/communities/blogs/how-to-address-the-harm-of-medication-overload
-Eliminating **medication overload**: A national action plan. Working Group on **Medication Overload**. Brookline, MA: The **Lown Institute**, 2020

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Polypharmacy as a Disease

- Risk factors
  - Multiple disease states, multiple providers, transitions of care, poor medication tracking
- Symptoms
  - Non-adherence to medications, falls, pill burden, financial toxicity
- Exacerbating factors
  - Prescribing cascades, poor communication, lack of patient education

PharmacyToday • December 2018. Deprescribing is the cure for 'disease' of polypharmacy

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Kinetics in the Elderly

Organ System	Physiologic Change	Effect on Medication
GI	Change in stomach pH Slowed gastric emptying	-Decrease in absorption of some medications/vitamins -Longer absorption rate
Skin	Loss of fat	Reduced drug reservoir
Body composition	↓ Lean body mass ↑ Body Fat ↓Albumin	↑Accumulation of fat-soluble drugs ↑ Free fraction of highly protein bound drugs
Liver	↓ Blood flow to the liver ↓ Change in liver enzymes	Change in drug metabolism
Renal	Decrease in kidney function/mass	↓ Renal elimination of many medications ↑ Half-life of renally eliminated meds

ACCP Updates in Therapeutics® 2017: Pharmacotherapy Preparatory Review and

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Factors Contributing to Polypharmacy

- Increasing age
- Multiple symptoms
- Multiple medical problems
- Copious prescribing
- Multiple providers
  - specialists, the VA, etc.
- •Lack of primary care provider
- •Use of multiple pharmacies
- •Drug regimen changes
- •Hoarding of medications
- •Self-treatment
  - •OTCs, supplements, online

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Medication Optimization Step 1

WHAT ARE THEY ACTUALLY TAKING???

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Best times for Brown Bag Review!

- At times of care transitions
  - In/out of the hospital
  - Home from the SNF
- Annual Wellness Visit
- New symptom or new Rx
- Palliative care/ end of life care

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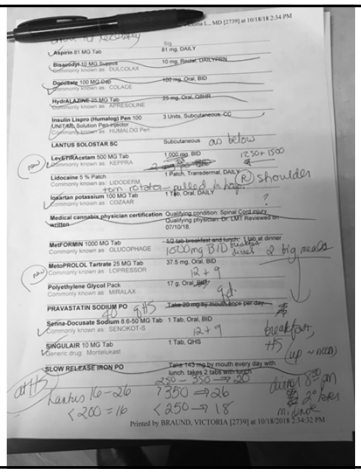

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Get one good Medication List

- ***The EPIC med list is always wrong!***
- Make sure you know what medications you are on and why
- Make sure that the patient/ family has a copy of the medication list

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Medication Optimization Step 2

PILL BOX.

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Encourage pill box use!

- Use a pill box if they have more than a few pills
  - Even for vitamins
- New! Prepacking pharmacies
  - CVS Simple Dose
  - Capsule.com
  - PillPack.com

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Jasper loves his pill box

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Medication Optimization Step 3

LOW HANGING FRUIT!!!

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Nonessential is most supplements

- Old people LOVE their vitamins
- Why not??
  - » Ineffective
  - » Often huge and hard to swallow
  - » Polypharmacy

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Medication Optimization Step 4

LET'S DEPRESCRIBE!

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Deprescribing

Starting medications is like the bliss of marriage, and stopping them is like the agony of divorce.

Doug Danforth

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LET'S DEPRESCRIBE!

- Why Bother?
- Resources
- Start with these
- Tips for success

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Concept of Deprescribing

- Recognize opportunities to **stop** a medication
- Stop a medication if:
  - *Harms > benefits*
  - *Minimal or no effectiveness*
  - *No indication*
    - » My pet peeve: a PPI gives them dx of GERD
  - *Not being taken correctly*
    - » "therapeutic noncompliance"

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Concept of Deprescribing

- Plan, communicate, and coordinate:
  - Include patient, caregiver, and other healthcare providers
  - What to expect/intent
  - Instructions, e.g., how to taper
- Monitor and follow-up
  - Withdrawal reactions
  - Exacerbation of underlying conditions

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LET'S DEPRESCRIBE!

- Why Bother?
- **Resources**
- Start with these
- Tips for success

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Originator of the Beers Criteria
Dr. Mark Beers: 1955-2009
First list published 1991

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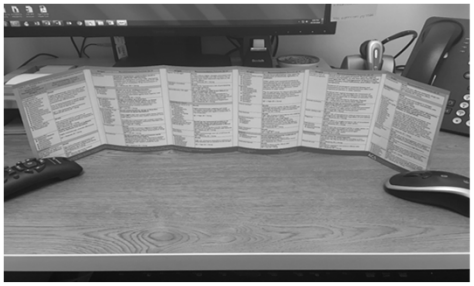
Beers List Pocket Card 2019



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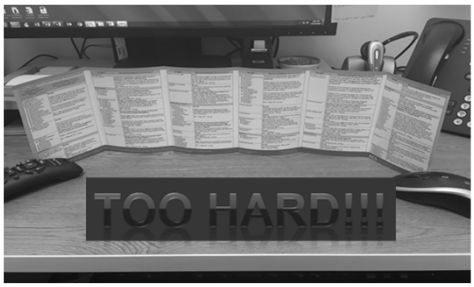
Beers List Pocket Card



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What to know about Beers List

- Think of Beers Criteria as a **warning light**
- **This medication is potentially inappropriate**
  - Why is patient taking the drug; is it truly needed?
  - Are there safer and/or more effective alternatives?
  - Does patient have particular characteristics that increase or mitigate risk of this medication?
- Actively assess for symptoms, and assess whether these could be related to meds

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What to know about Beers List

- Pharmacy Benefit Managers now use these as "quality measures" and send us nastigrams
  - "you are a terrible doctor: this patient is on a Beer's List medication"
- Seriously, we all have old people on zolpidem and benzos
  - Last week, I had a new patient who was on chlordiazepoxide ($T_{½}$ of up to 300 hours!)

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More Resources for Deprescribing

Choosing Wisely.org

Deprescribing.org

- Algorithms for
  - Benzodiazepines
  - PPIs
  - Antipsychotics
  - Antihyperglycemic agents

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Resources for Deprescribing

Choosing Wisely.org
Deprescribing.org

FOR FUN; YouTube
- **Bohemian Polypharmacy**

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Deprescribing.org


deprescribing.org | Is a Proton Pump Inhibitor still needed?

What are Proton Pump Inhibitors (PPIs)?

Proton Pump Inhibitors, or PPIs, are a class of drugs that are used to treat problems such as heartburn or stomach ulcers.

There are many different types of PPI drugs:

- Lansoprazole (Prevacid®)
- Omeprazole (Losec®)
- Pantoprazole (Tecta®, Panteloc®)
- Rabeprazole (Pariet®)
- Esomeprazole (Nexium®)
- Dexlansoprazole (Dexilant®)
- Omeprazole (Olex®)

Why use less of, or stop using a Proton Pump Inhibitor?

While PPIs are effective at treating many stomach problems, such as heartburn, they are often only needed for a short period of time.

Despite this, many people take PPIs for longer than they may need.

Research shows that for some people, doses can be safely lowered or the drug used just when needed for symptom relief.

PPIs are generally a safe group of medications; however, they can cause headache, nausea, diarrhea and rash. They may also increase risk of:

- Low vitamin B12 and magnesium blood levels
- Bone fractures
- Pneumonia
- Intestinal infections such as *C. difficile*

Stopping a Proton Pump Inhibitor is not for everyone

Some people need to stay on a PPI for a long time. However, others only need this medication for a short period of time.

When the ongoing reason for using a PPI is unclear, the risk of side effects may outweigh the chance of benefit.

People who should continue on a PPI include those with any of the following:

- Barrett's esophagus
- Long-term use of nonsteroidal anti-inflammatory drug (e.g. Advil®)
- Severe inflammation of the esophagus
- Documented history of bleeding stomach ulcer

How to safely reduce a Proton Pump Inhibitor

People over the age of 18 who have been taking a PPI for more than 4 to 8 weeks should talk to a doctor, nurse practitioner or pharmacist about whether stopping a PPI is the right choice for them.

Doctors, nurse practitioners or pharmacists can help to decide on the best approach to using less of a PPI. They can advise on how to reduce the dose, whether to stop it altogether, or how to make lifestyle changes that can prevent heartburn symptoms from returning.

Reducing the dose might involve taking the PPI once daily instead of twice daily, lowering the number of mg (e.g. from 30mg to 15mg, or 40mg to 20mg, or 20mg to 10mg depending on the drug), or taking the PPI every second day for some time before stopping.

Farrell B, Pottie K, Thompson W, Boghossian T, Pizuba L, Kashifl FY, et al. Deprescribing proton pump inhibitors. Evidence-based clinical practice guideline. Can Fam Physician 2017;63:354-64 (Eng), e310-81 (Fr).

deprescribing.org Bruyère open

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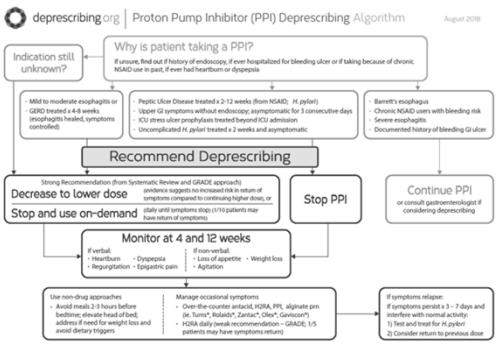
Deprescribing.org



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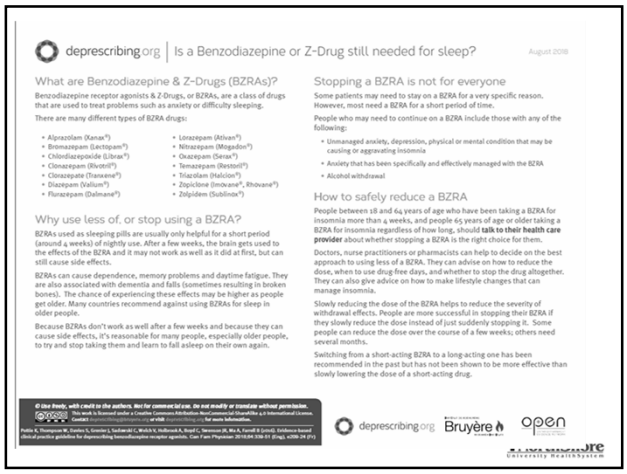

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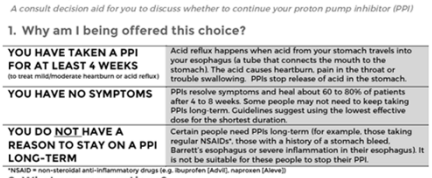
Deprescribing.org



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MedStopper.com

- By entering the list of medications a patient is receiving, Medstopper sequences the drugs from "more likely to stop" to "less likely to stop"
- Based on three key criteria
  1. Potential of the drug to improve symptoms
  2. Potential to reduce the risk of future illness
  3. Likelihood of causing harm.
- Suggestions for how to taper the medication are also provided.

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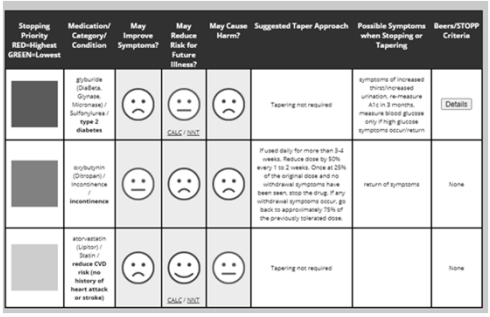
Medstopper.com



Stopping Priority RED=Highest GREEN=Lowest	Medication/ Category/ Condition	May Improve Symptoms?	May Reduce Risk for Future Illness?	May Cause Harm?	Suggested Taper Approach	Possible Symptoms when Stopping or Tapering	Beers/STOPP Criteria
	glyburide (Diabeta, Glynase, Micronase) / Sulfonylurea / type 2 diabetes	☹	😐 CALC / NNT	☹	Tapering not required	symptoms of increased thirst/increased urination, re-measure A1c in 3 months, measure blood glucose only if high glucose symptoms occur/return	Details
	oxybutynin (Ditropan) / incontinence / incontinence	😐	☹	☹	If used daily for more than 3-4 weeks. Reduce dose by 50% every 1 to 2 weeks. Once at 25% of the original dose and no withdrawal symptoms have been seen, stop the drug. If any withdrawal symptoms occur, go back to approximately 75% of the previously tolerated dose.	return of symptoms	None
	atorvastatin (Lipitor) / Statin / reduce CVD risk (no history of heart attack or stroke)	☹	😐 CALC / NNT	😐	Tapering not required		None

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Lown Institute.org

Eliminating **medication overload**: A national action plan. Working Group on **Medication Overload**. Brookline, MA: The **Lown Institute**, 2020

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Lown Institute Recommendations

- Implement prescription checkups
- Raise awareness
- Improve information at point of care
- Education and training
- Reduce industry influence

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"Drug Fact Box"

Drug Facts Box LUNESTA (ESZOCLOPINE) versus placebo for insomnia

What is this drug for?	To reduce the symptoms of insomnia—trouble falling or staying asleep—experienced by adults for at least one month
Who might consider taking it?	Adults age 18 and older with insomnia
Recommended monitoring	No blood tests, watch out for abnormal behavior
Other things to consider doing	Reduce caffeine intake (especially at night), increase exercise, establish regular bedtime, avoid daytime naps

LUNESTA STUDY FINDINGS

788 healthy adults with insomnia for at least 1 month—sleeping less than 6.5 hours per night and/or taking more than 30 minutes to fall asleep—were given LUNESTA or PLACEBO nightly for 6 months. Here's what happened:

What difference did LUNESTA make?	People given PLACEBO	People given LUNESTA (3 mg each night)
Did LUNESTA help?		
LUNESTA users fell asleep faster (15 minutes faster)	45 minutes to fall asleep	30 minutes to fall asleep
LUNESTA users slept longer (37 minutes longer)	5 hours 45 minutes	6 hours 22 minutes
Did LUNESTA have side effects?		
Life threatening side effects No difference between LUNESTA and a sugar pill	None reported yet	
Symptom side effects More had unpleasant taste in their mouth (additional 20% due to drug)	6% 6 in 100	26% 26 in 100

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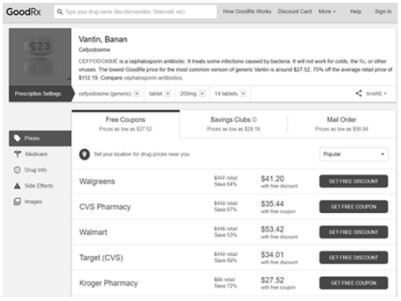
Good Rx.com



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LET'S DEPRESCRIBE!

- Why Bother?
- Resources
- **Start with these**
- Tips for success

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Examples of Medications Eligible for Deprescribing

- Bisphosphonates
  - After 5+ years or if CKD
- Anti-allergy
  - Older folks generally outgrow allergies
- PPIs and H_2 antagonists
  - A marker of a hospitalization
- AChEI (donepezil) and memantine
  - Are they really doing anything?
- Iron
  - Do they have IDA? Have you checked ?
- Antipsychotics
  - Are they really "psychotic"?

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No Geriatrics lecture is complete without a Benadryl® slide!

- Benadryl® (diphenhydramine) is Bad!
- And ubiquitous!
  - In most OTC sleep meds

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Anticholinergic Adverse Effects

- "Mad as a hatter"
  - delirium, confusion
- "Blind as a bat"
  - mydriasis
- "Red as a beet"
  - Flushed
- "Dry as a bone"
  - Dry mouth and eyes
- "Hot as a hare"
  - Hyperthermia
- Other AE's
  - Constipation
  - Urinary retention
  - Falls
  - Tachycardia

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Benadryl® (diphenhydramine)

- Anticholinergic medications
  - Dry eyes, dry mouth, constipation, urinary retention, mental confusion
  - Big cause of side effects in seniors
- It's really an allergy med!
  - Not indicated for sleep…that's just a side effect!

Should not be used routinely for sleep!

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Incontinence Medications

- Strong anticholinergic properties
  - Constipation, dry mouth, etc
- Small benefit
  - Very few women regain complete continence

Agency for Healthcare Research and Quality. Nonsurgical treatments for urinary incontinence in adult women: diagnosis and comparative effectiveness. Comparative Effectiveness Review No. 36. April, 2012.

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PPIs

- Since 2012, FDA warned about increased risk of C.diff
- Increased risk of CKD
- Increased risk of osteoporosis
- Decreased B12 and magnesium levels

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Benzodiazepines and Z-drugs

- Significant side effects
  - Increased risk of falls
  - Cognitive impairment
  - Possible increased risk for Alzheimer disease
- Often patients are reluctant to come off of these meds; don't start here!
- Here is a helpful reference :
  - https://www.mayoclinicproceedings.org/article/S0025-6196(16)30509-2/fulltext
  - Also deprescribing.org

Gray, Shelly L., et al. "Benzodiazepine use and risk of incident dementia or cognitive decline: prospective population based study." *bmj* 352 (2016).

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Acetylcholinesterase inhibitors; ex: donepezil

- Very modest benefit
- Can have significant side effects
  - Nausea
  - Lack of appetite
  - Weight loss
  - Incontinence
  - Increased need for pacemaker

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Statins in Primary Prevention

- Limited evidence for primary prevention in patients over 75\
  - Studies exclude older, sicker pts
  - No clear guidance
- Decide based on personal judgment
  - Other CV risk factors

Evidence concering optional duration of statin treatment in older, frail adults is lacking. van der Ploeg MA, Floriani C, Achterberg WP, et al. Recommendations for (Discontinuation of) Statin Treatment in Older Adults: Review of Guidelines. *J Am Geriatr Soc*. 2020;68(2):417-425. doi:10.1111/jgs.16219

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OPTIMISE Trial

- Is antihypertensive medication reduction possible without significant changes in BP control or adverse events?
- Randomized 1:1 to removing 1 medication vs usual care

Peterson ED, Rich MW. Deprescribing Antihypertensive Medications for Patients Aged 80 Years or Older: Is Doing Less Doing No Harm? *JAMA*. 2020;323(20):2024–2026

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OPTIMISE Background

- Numerous trials show lower BP is better (even in the elderly!)
  - HYVET, SPRINT
- Still need to exercise caution and personalized treatment goals
  - SPRINT trial excluded patients with multiple comorbities or dementia

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OPTIMISE Results

- Deprescribing 1 medication was non-inferior to normal follow up
- Did not prove it was safe
  - Unknown long term safety
  - Systolic BP in deprescribing group was 3.4mmHG higher
  - Starting BP was ~130mmHg
  - Underpowered for safety issues

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LET'S DEPRESCRIBE!

- Why Bother?
- Resources
- Start with these
- **Tips for success**

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Deprescribing Keys

- Understanding this is a very sensitive subject
  - "Legacy prescribing"
    - » Never expected to be forever meds
    - » Ex: PPIs, bisphosphonates, antidepressants
  - Deprescribing from a different prescriber
  - Perception that deprescribing is a "loss"

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Suggestions for Starting

- Pick one adverse effect and look at all medications
- Ask patient if they think problem is caused by the medication
- Look for “legacy prescribing”
- Choose medications to focus on
- Start with one patient a day

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Deprescribing

- Can be very challenging
  - Protocols exist, but feasibility and effectiveness vary
- Should be a shared dialogue with patients
  - Generally shown to have a positive effect on communication and outcomes
- Interventions that require active patient involvement are more effective

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Talking about deprescribing with patients

1. Older patients respond to medications differently
2. Weaker evidence regarding medication effectiveness
3. Increased medication burden
4. Change in goals of treatment

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Helpful Phrases

- “Pause and monitor” vs. “discontinue”
- “You are on a number of medications now. I would like to regularly review these to make sure each of them is still benefiting you, as well as check for side effects
- As we get older, medications that worked well may no longer have the same benefit; in particular, I'm thinking that “x” may no longer be needed.
- “From your point of view, what matters most to you? How do you feel about these options? Is this something you would consider?”
- “What medications are important for you to keep taking”
- Concept of a “beyond use date”

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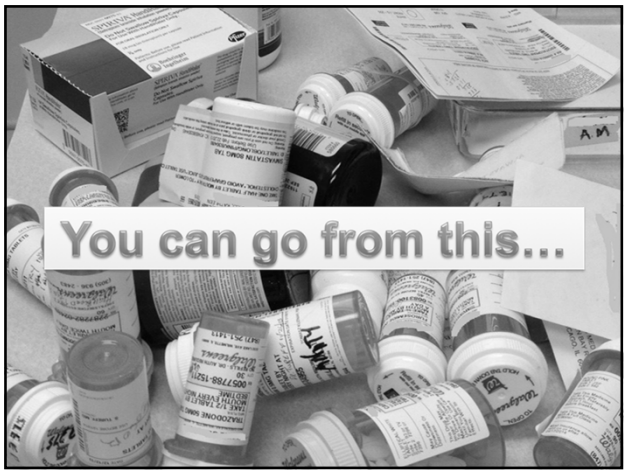

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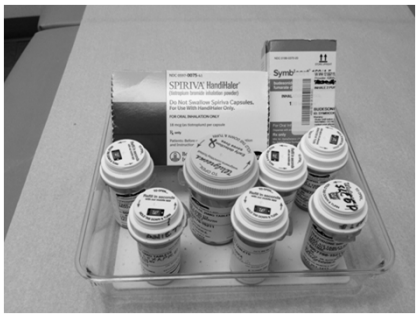

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- US Deprescribing Research Network: deprescribingresearch.org
- www.deprescribingnetwork.ca (Canadian Deprescribing Network)
- http://medstopper.com (based at the University of British Columbia)
- https://tapermd.com/ (based at MacMaster University, Ontario, CA)

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Questions?

vbraund@northshore.org

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Thank You!

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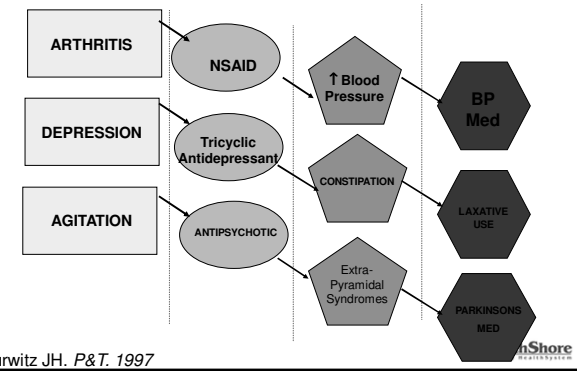
The Prescribing Cascade



Gurwitz JH. *P&T. 1997*

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Ideas for later

- Use of ASA
- Don't use dig for 1st line
- Don't use Macrodantin for CrCl < 30
  - Used to be 60 so nice ☺
  - Don't use for chr supperssion
- Sulfonylureas
- SGLT2's in elderly; see Matt email
- Muscle relaxants
- SNRIs if hx of falls
- Credible Meds.org for QT prolongation
- NO Aricpet with oxybutinin

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Ideas for later

- ASA 81 proph age decreased form 80 to 70
  - First study done on U.S. MDs 1988 long ago before statins, etc
- Tramadol → hyponatremia
- TMP/ SMX bad with CKD w/ ACE/ ARB→ hyperkalemia
- PD pts with VH→ quetiapine, clozapine, pimvanserin ($$$)

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