

Rational Prescribing in Older Adults



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Important Information

- ▶ The slides will progress at their own pace.
- ▶ Do not attempt to speed up the video.
- ▶ The Post Test will only unlock after the entire video has been viewed.
- ▶ The video can be paused and resumed later.

Learning Objectives

- ▶ Identify three specific medications or medication classes that increase the risk of ER visits or hospitalizations in older adults.
- ▶ Name two common clinical situations where widely used drugs have clear evidence of harm and little evidence of benefit.
- ▶ List three adverse effects related to antipsychotic use in older adults.
- ▶ Describe three methods for dealing with insomnia in older adults.
- ▶ List three clinical situations where deprescribing would be appropriate.

Medication Use in Older Adults

Among adults 65 years of age or older

- 40% take 5 to 9 medications.
- 18% take 10 or more medications. (Sloane Survey 2006)

Almost half of older adults take at least one medication that is not medically necessary.

(Maher 2014)



Why drugs are especially dangerous in older adults

Older adults are heterogeneous and generally more vulnerable than younger populations.

Factors affecting vulnerability include

- ▶ Use of multiple medications
- ▶ Difficulty taking medication due to
 - Disability
 - Cognitive issues
 - Esophageal dysfunction
 - Medication access or delivery issues
 - Pharmacy coverage benefits
- ▶ Older adults absorb drugs adequately but metabolize and excrete them more slowly than younger adults.

Adverse Drug Reactions (ADRs)

An adverse drug reaction is a noxious and unintended response to a medicine that occurs during normal use and at otherwise normal doses.

Common ADRs include

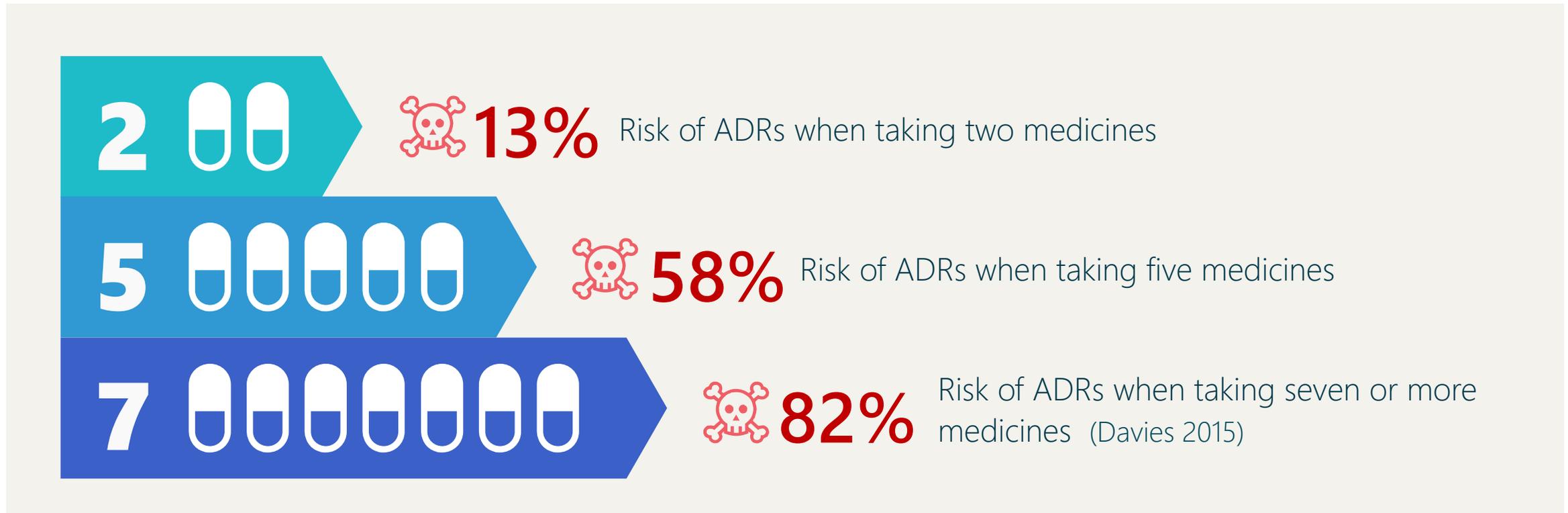
- ▶ Loss of balance, gait instability, and falls
- ▶ Altered mentation or impaired cognition
- ▶ Lightheadedness, dizziness, visual problems, loss of consciousness

ADRs increase the risk of

- ▶ **Emergency Department Visits**
 - Warfarin, insulin, and digoxin (Budnitz 2007)
- ▶ **Hospitalizations**
 - Cardiovascular agents, analgesics, hypoglycemic drugs (Tangiisuran 2012)

Consequences of Multiple Medication Use

The use of several medications simultaneously, even at otherwise appropriate doses, increases the risk of adverse effects, drug interactions, nonadherence, and death.



Drugs Contribute to Falls

Increased risk of falling is associated with

- ▶ Sedatives/hypnotics (including “Z-type” drugs: zolpidem, eszopiclone, zalepion)
- ▶ Antidepressants
- ▶ Benzodiazepines
- ▶ Diphenhydramine (Benadryl), clemastine (Tavist), chlorphenamine, and related sedating antihistamines
- ▶ Antihypertensives



Falls contribute to serious injury, loss of independence, and death.

Drugs Contribute to Cognitive Impairment

- Anticholinergics
- Antihistamines
- Benzodiazepines
- “Z-type” drugs (zolpidem, eszopiclone, zaleplon)
- Opioids
- Antispasmodics (muscle and GI)

Do UTIs cause cognitive impairment or delirium?

- **Don't automatically assume bacteriuria causes delirium.**
 - In noncatheterized patients, even if febrile, bacteriuria with altered mental status is not a reason to treat "UTI". Urine culture is not recommended in this setting. (Stone 2012, High 2009, Loeb 2001)
- UTIs have not been shown to cause delirium.
- Bacteremia can cause delirium.
- UTIs almost never lead to bacteremia.

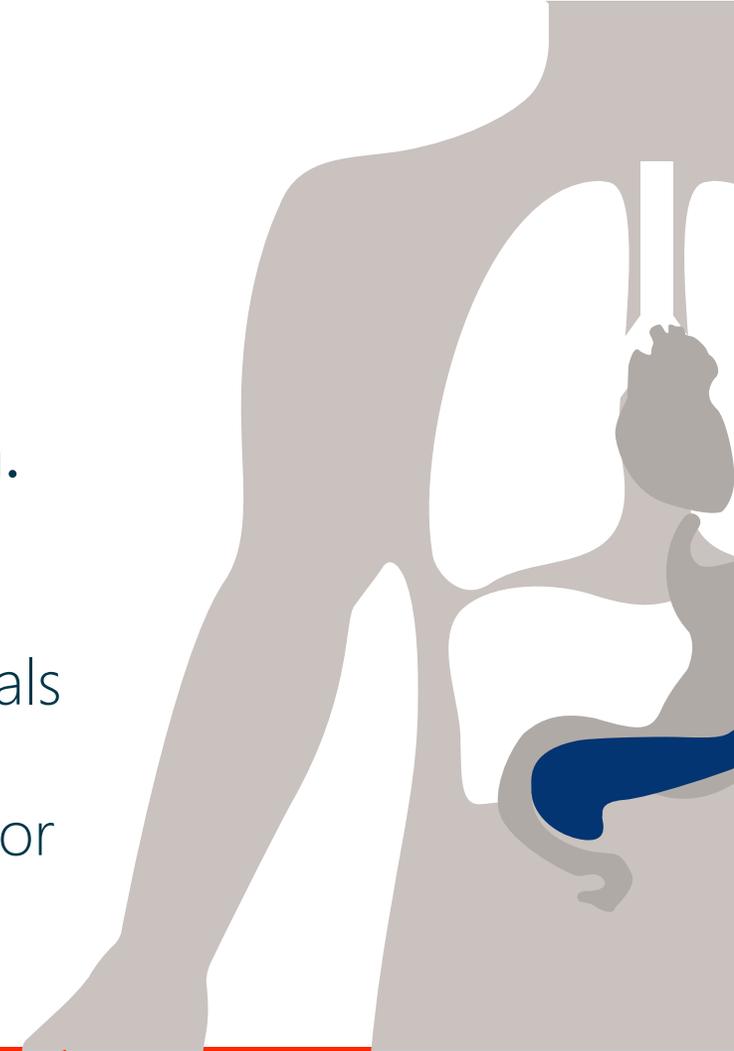
Diabetes: Conventional HbA1c are being relaxed in various guidelines

Major Comorbidity or Physiologic Age	Microvascular Complications		
	Absent or Mild	Moderate	Advanced
Absent >10 years of life expectancy	<7%	<8%	8-9%
Present 5 to 10 years of life expectancy	<8%	<8%	8-9%
Marked <5 years of life expectancy	8-9%	8-9%	8-9%

(Veterans Affairs/Department of Defense 2010)

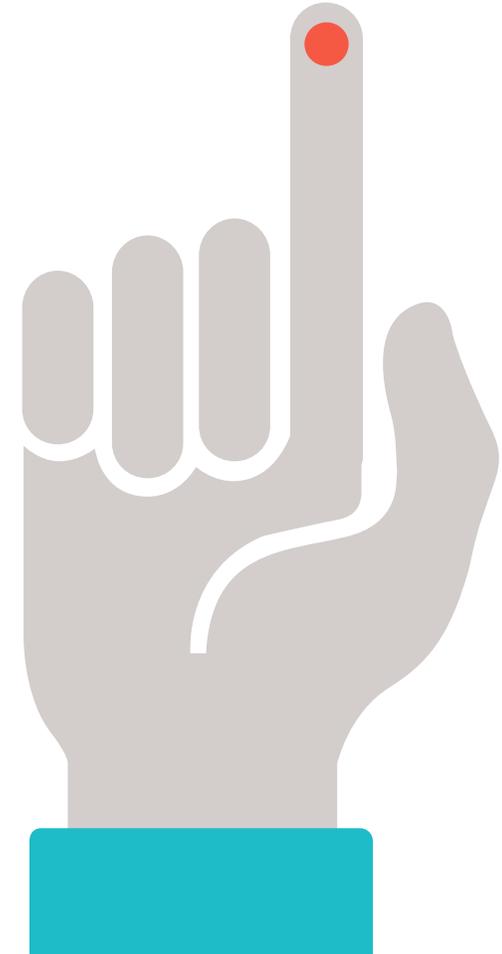
No RCTs of tight control have been done in older adults

- ▶ Risk of hypoglycemia is clear in all ages.
- ▶ Risk in older adults is greater.
- ▶ Tight control (intensive glycemic control) in older adults leads to an increased risk for hypoglycemia.
- ▶ Tight control has no effect on mortality.
 - A 2013 Cochrane review of 28 randomized controlled trials (RCTs) comparing intensive with conventional glycemic control in almost 35,000 adults found that the risk ratio for all-cause mortality was 1.00. (Hemmingsen 2013)



Metformin in Older Adults with Type 2 Diabetes

- ▶ Is recommended by the American Diabetes Association for first line treatment for type 2 diabetes in all adults, with few exceptions.
- ▶ Lowered mortality rates in UKPDS34. (UK Prospective Diabetes Study Group 1998)
- ▶ May also have other benefits.



Insulin Causes Hypoglycemia

- ▶ Insulin-related hypoglycemia and errors are implicated in an estimated 9.2% of ED visits associated with ADRs. (Geller 2014)
- ▶ This one preventable ADR accounts for nearly 100,000 ED visits every year.
 - Patients ≥ 80 were twice as likely to visit the ED and 5 times more likely to be hospitalized.



Insulin in Older Adults

Increased mortality

- ▶ In people with type 2 diabetes (mean age 64, n=48,000) taking oral hypoglycemics, adding insulin based therapy was associated with a higher risk of death (HR 1.46). (Currie 2010)

Cancer?

- ▶ “Although still limited, early evidence suggests that metformin is associated with a lower risk of cancer and that exogenous insulin is associated with an increased cancer risk.”
(Giovannucci, consensus statement, 2010)

Lack of evidence of efficacy

- ▶ No RCT has ever shown meaningful benefit from insulin for chronic complications attributed to type 2 diabetes.

Agitation – Case Study



Antipsychotics

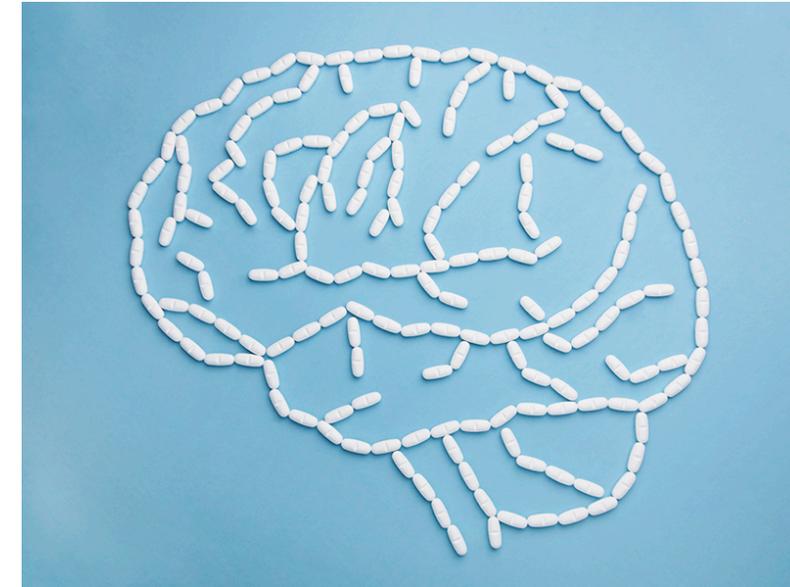
- Are approved to treat schizophrenia; some are approved for bipolar disorder.
 - New onset schizophrenia almost never occurs after age 60.
- May be indicated for hallucinations or delusions.
- Are commonly used off-label in older adults to treat dementia, agitation, anxiety, and insomnia.
 - In 2007, 83% of antipsychotic prescriptions for older adults were off-label.
 - Any positive effects may be attributed to the sedative effects of these drugs.

Antipsychotics are dangerous

- Death
- Strokes
- Diabetes
- Weight gain
- Cognitive decline
- Neuroleptic malignant syndrome
- Extrapiramidal effects
- Hypothermia
- Oversedation
- Falls

Antipsychotics Increase Mortality

- ▶ A systematic review and meta-analysis of 162 studies found that deaths occurred in 3.5% of patients randomized to second generation antipsychotics, compared to 2.3% of those receiving placebos. (Maher 2011)
- ▶ One in 87 patients treated with antipsychotics can be expected to die from the treatment. (Maher 2011)
- ▶ Antipsychotics double the risk of sudden cardiac death. (Vieweg 2009)



Antipsychotics: Harms vs. Benefits

- ▶ “Adverse effects offset advantages in the efficacy of atypical antipsychotic drugs for the treatment of psychosis, aggression, or agitation in patients with Alzheimer’s disease.” (Schneider 2006)
- ▶ They may worsen cognitive abilities.
 - In the CATIE study, atypical antipsychotics caused steady and significant cognitive declines equivalent to one year’s natural deterioration. (Vigen 2011)
 - In 823 nursing home patients, those who were taken off antipsychotics had better memory scores than those who remained on antipsychotics. (Avorn 1992)

The Myth of “Second-Generation” Antipsychotics

- ▶ **“Second-generation antipsychotics are now used more commonly than first-generation drugs, even though controlled trials have failed to demonstrate a clear advantage in efficacy with the newer drugs, except for clozapine and possibly olanzapine.”** (Medical Letter June 2013)
- ▶ Despite marketing claims, “second generation” antipsychotics are just as likely as “first generation” antipsychotics to cause tardive dyskinesia and other extrapyramidal symptoms. (Peluso 2012)
- ▶ “Why olanzapine beats risperidone, risperidone beats quetiapine, and quetiapine beats olanzapine; an exploratory analysis of head-to-head comparison studies of second-generation antipsychotics.” (Heres 2006)

Agitation is not what troubles caregivers the most

Common problems that concern caregivers	Solutions
Repetitive questioning	Expect to provide repetitive answers. Re-orient.
Argumentativeness	Agree. Model good behavior. Avoid debating.
Toileting issues	Timed voiding.
Upset, agitated, restless	Daytime activity and structure. Provide pet? Be calm.
Refusing care	Be flexible. Relax rules so long as safe.
Awake at night	Establish routines. Hire overnight coverage. Avoid bedtime beverages and caffeine.
Verbal aggression	Distract. Redirect. Identify and avoid antecedents.
Wandering	Daytime exercise and activity. Safety-proof walkways.

Agitation

Older patients with delirium or dementia may be unable to express why they are agitated.

- Identify and avoid triggers
- Evaluate for physical causes (e.g. drugs, pain, illness)
- Manage the environment (e.g. quiet routine is less challenging)
 - And be aware of unmanageable factors (e.g. grief)

Non-pharmacologic therapies should always be first line.

Insomnia – Case Study

- ▶ A 79 year old female presents to clinic for general follow-up. On a comprehensive medication review, you discover that she is taking lorazepam each night prior to bedtime and “Zyquil” (an over the counter sleep aid containing diphenhydramine) occasionally.
- ▶ On further questioning, you learn that she has some anxiety in the evenings and started taking lorazepam decades ago when her late husband became ill. Now she is often able to go to sleep, but wakes up several times nightly to urinate.
- ▶ She finds the Zyquil helps her stay asleep through the night.

Insomnia – Case Study

What would you do?

- A** Continue lorazepam, as she has had no adverse effects thus far, and discontinue Zykquil.
- B** Discontinue both medications immediately – their risk profiles outweigh any continued benefit.
- C** Discontinue both medications and instead prescribe a newer sleep aid like zolpidem. You know that benzodiazepines are bad.
- D** Taper off of lorazepam and stop Zykquil. Discuss sleep hygiene, behavior modifying therapies to decrease nocturia and consider CBT if nocturnal anxiety returns.

Insomnia – Case Study

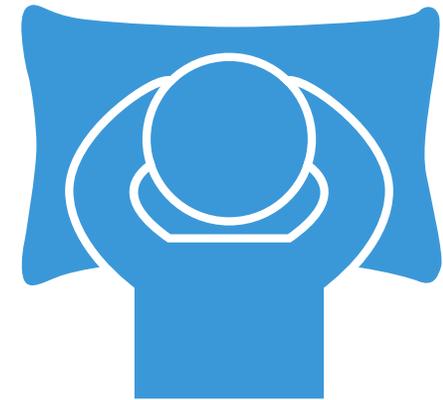
What should you do?

- A** Continue lorazepam, as she has had no adverse effects thus far, and discontinue Zykquil.
- B** Discontinue both medications immediately – their risk profiles outweigh any continued benefit.
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Why take sleeping pills?

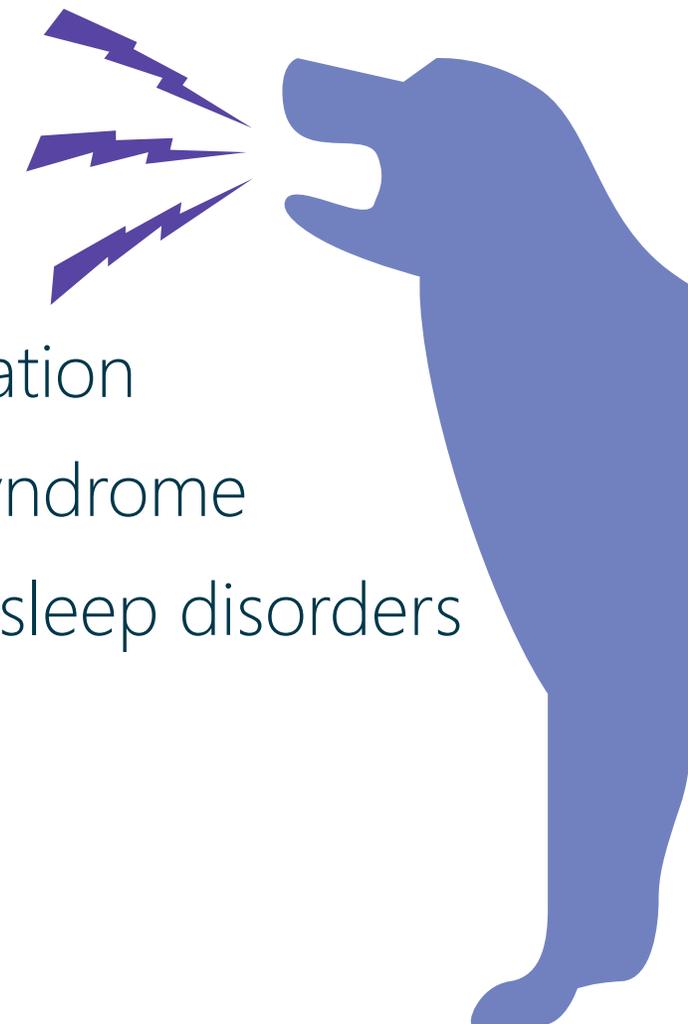
Research shows that sedative/hypnotics increase drowsiness, reduce function, and increase the desire to take naps the next day.

- ▶ If the purpose of sleep aids is to increase function the next day, then all medications fail this standard.
- ▶ Sedative/hypnotics are associated with
 - Confusion/negative cognitive effects
 - Dizziness and lightheadedness
 - Falls
 - Vehicle collisions
 - Hip fractures
 - Addiction (benzodiazepines)



What is interfering with sleep?

- ▶ Pain due to arthritis that inhibits comfortable sleeping
- ▶ Partner with sleep apnea, snoring issues, or restless legs
- ▶ Yappy dog barking or traffic noise outside
- ▶ Noise from the apartment downstairs or a neighbor who shares a wall
- ▶ Acid reflux
- ▶ Frequent urination
- ▶ Restless leg syndrome
- ▶ Undiagnosed sleep disorders
- ▶ Dementia
- ▶ Depression



Good Sleep Hygiene

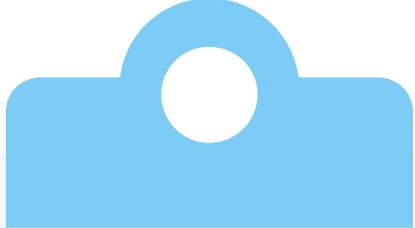
- Maintain regular sleep and wake schedules.
- Create a dark, quiet, and comfortable sleeping environment.
 - If lights can't be avoided, wear a sleep mask.
 - If noise can't be avoided, try earplugs or use a white noise machine.
- Refrain from drinking alcohol.
 - Alcohol can cause transient sleepiness, but often disturbs sleep later in the night.
- Refrain from consuming drinks or food close to bedtime.
- Refrain from using a light-emitting device such as a laptop, smartphone, television, or tablet within an hour of bedtime.

Non-pharmacological Sleep Management Strategies to Try

- Meditation or relaxation techniques
- A daily exercise program in the morning (Gentili 2014)
- Cognitive behavioral therapy (Lichstein 2013 and Morin 2004)
- A hot bath before bedtime
- Strong chamomile tea



Safer Prescribing Practices

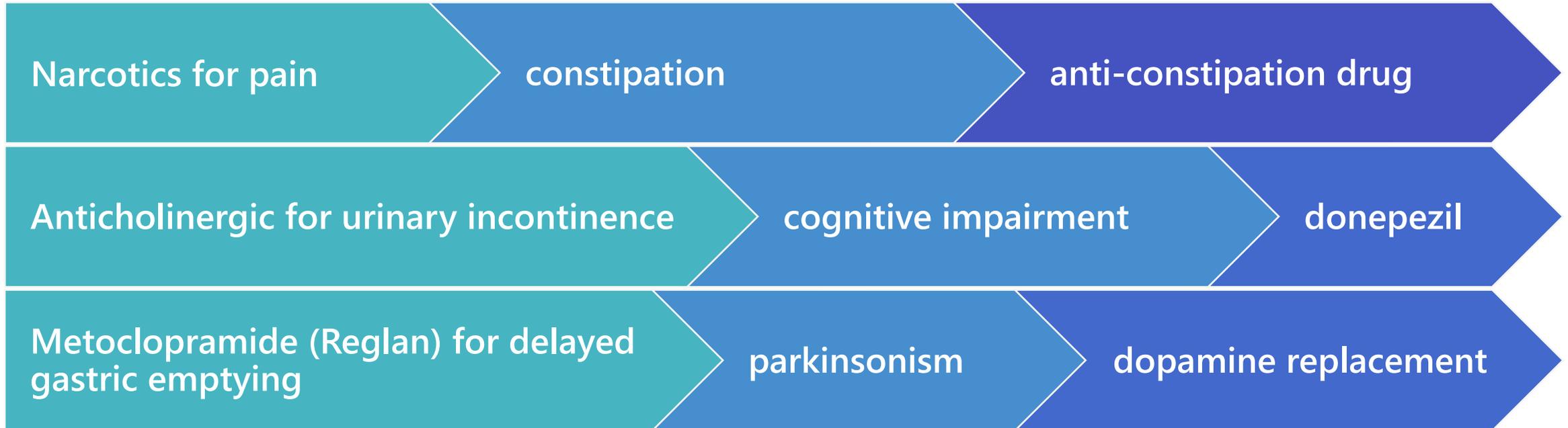
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- ✓ Establish goals
 - ✓ Don't prescribe drugs to manage ADRs due to other drugs
 - ✓ Monitor
 - ✓ Deprescribe unjustifiable drugs

Establish Goals

- ▶ For symptomatic treatment, focus on outcomes.
- ▶ Are benefits of drug treatment enough to offset burdens?
- ▶ Are there non-pharmaceutical options?

Focus on patient-centered clinical outcome goals.

Many drug-associated adverse effects increase the risk of additional medications

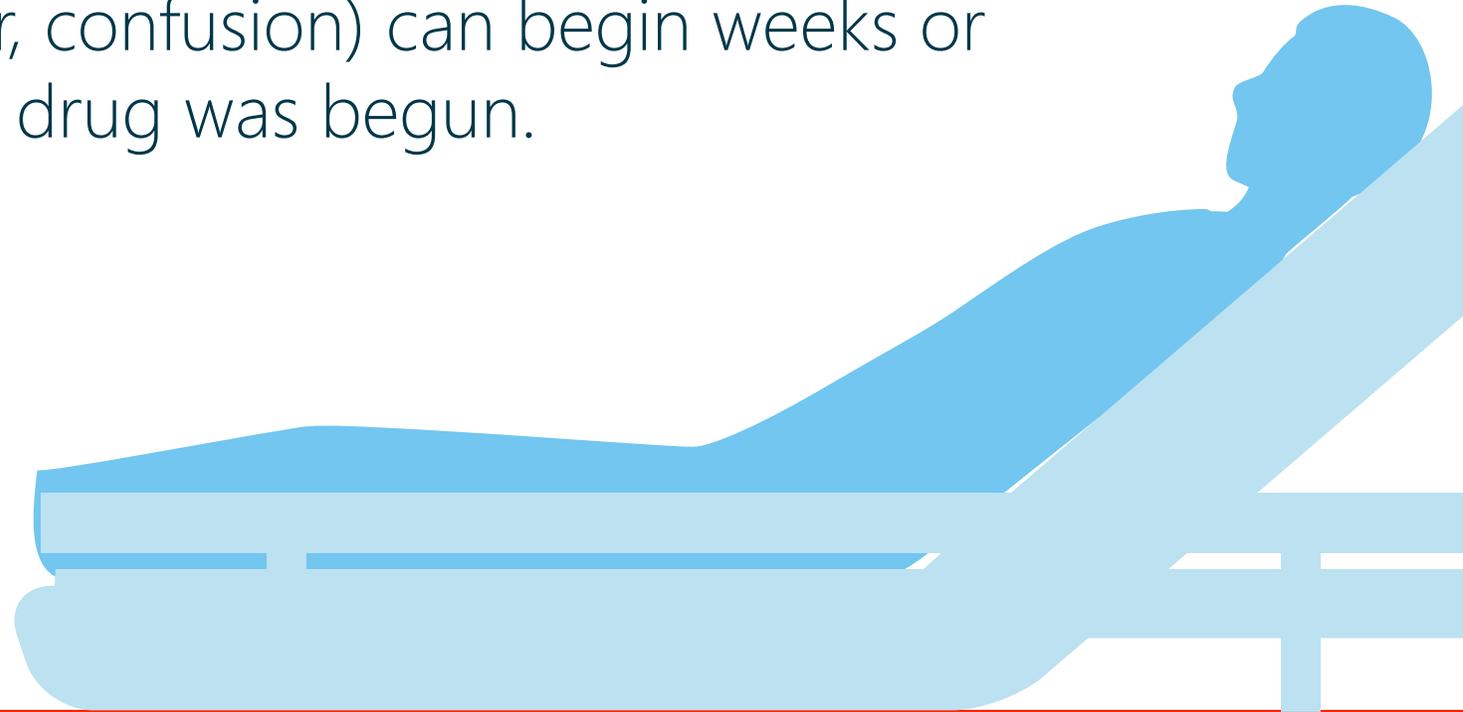


Adverse effects of one drug generally should not be treated with another drug.



Monitor

- ▶ An adverse drug reaction should be the first suspect for any symptom that arises after a patient starts a drug.
- ▶ Many ADRs (e.g. rash, fever, confusion) can begin weeks or months after the offending drug was begun.



Deprescribe

- ▶ An essential, and often the most gratifying, element of geriatric care is deprescribing drugs and watching a patient get better.
- ▶ Quality of life, quality of care, and the patient's financial situation may improve.
- ▶ You often will be rewarded by a grateful patient and family.



What to Deprescribe

Some drugs that we try especially hard to stop in older adults

- Proton pump inhibitors
- Drugs for urinary incontinence
- Anticonvulsants for vague neurologic symptoms
- Cholinesterase inhibitors
- Benzodiazepines



Things to Consider

- ▶ Some medications are tremendously beneficial.
- ▶ Many medications have little or no benefit and many cause serious harm.
- ▶ Industry-funded information tends to emphasize benefits and play down harms.
- ▶ Older adults are particularly vulnerable to overprescribing.
- ▶ Deprescribing may be the most important treatment.

Counseling Patients

- ▶ Osler said, "The desire to take medications is the main thing that separates man from the animals."
- ▶ Multibillion dollar marketing campaigns encourage us to prescribe, and patients to take, medications.
- ▶ Nonetheless, many patients are happy to discontinue medications, if this is done carefully.



Partner With Your Patients

- ▶ Do not assume that any list or patient recollection of medications is accurate.
- ▶ Once you have your best effort at a list of drugs, do not assume the patient is actually taking them.
- ▶ In general there is no such thing as “t.i.d.” And “b.i.d.” is a long shot. Give all drugs q.d. and all at once when possible.
- ▶ Ask “How many times in the last week have you forgotten your meds?” and “How do you take them so that you don’t forget?”
- ▶ Your default position should be, “Should I stop this drug?”

Care of Older Adults is a Team Sport

- ▶ Nurses and other members of the healthcare team
 - ▶ May become aware of adverse effects that patients don't tell physicians.
 - ▶ May hear about nonadherence issues.
 - ▶ Can provide education to patients on adverse drug reactions, adherence, and medication monitoring.
 - ▶ Can flag potential prescribing problems.

Partner With Your Pharmacists

- Provide noncommercial sources of information to help answer questions about drugs.
- Provide support in choosing the best drug for your patient.
- Provide drug utilization reports on patients to identify which prescriptions have been filled.
- Alert you to important drug-drug interactions.



Encourage Medication Reviews

Most pharmacies in the DC area will do free medication reviews.

- ▶ Have your patient check with their pharmacy to see if an appointment is necessary.
- ▶ Some community settings (churches, recreational centers, assisted living communities, or grocery stores) may have brown bag review events staffed by pharmacists and pharmacy students.
- ▶ **Encourage patients to do medication reviews with their pharmacists.**

Medication reviews are recommended twice a year for patients 75 years or older or anyone taking four or more medicines.

Independent Information about Drugs

Utilize non-commercial research to inform your prescribing preferences.

- Paid** **Prescrire**
english.prescrire.org
- Paid** **Medical Letter**
secure.medicalletter.org
- Paid** **Prescriber's Letter**
prescribersletter.therapeuticresearch.com
- Paid** **Pharmacist's Letter**
pharmacistsletter.therapeuticresearch.com

- Paid** **Up-to-Date**
www.uptodate.com
- Free** **Australian Prescriber**
www.australianprescriber.com
- Free** **Therapeutics Letter**
<http://www.ti.ubc.ca/therapeutics-letter/>

Resources



doh.dc.gov/dcrx

Beers Criteria
(Medication List)

<https://www.dcri.org/trial-participation/the-beers-list/>



<http://www.alosafoundation.org/independent-drug-information-service/>

Worst Pills

worstpills.org



An initiative of the ABIM Foundation

choosingwisely.org



www.americangeriatrics.org



<http://www.consumerreports.org/cro/health/prescription-drugs/best-buy-drugs/index.htm>

More resources
available at the DC
Center for Rational
Prescribing

doh.dc.gov/dcrx

