AGEING&HIV

CHAIN UKI

CARE OF HIV AND AGEING IMPLEMENTATION NETWORK

Medications:

Polypharmacy and deprescribing for people living with HIV

Chairs:
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Memory Sachikonye

Speakers:
Ali Grant
Maria Liu
Dr Tom Levett

ASK A QUESTION HERE

Polypharmacy and deprescribing for people living with HIV

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01

What is polypharmacy?

Ageing well with HIV

- Over 50% of people living with HIV in the UK are over 50 years of age(2023), as a result of successful treatment as well as new diagnoses in older age.
- This is predicted to rise further
- As people age, the number of comorbidities people live with increases, and polypharmacy is introduced
- The prevalence of comorbidities and other age-related conditions is higher in people living with HIV
- Polypharmacy is both a consequence of prescribing lifelong ART and non-ART medication

Polypharmacy

Commonly described as 5 or more medications, exact number not as relevant; also discussion about whether this should include ART?

An increased number of meds has been shown in studies to correlate with negative clinical outcomes: DDIs, ADRs, non-adherence, increase in subsequent healthcare costs (reduced cognitive impairment, falls, etc), reduced patients' quality of life

Appropriate

'Prescribing for an individual for complex/multiple conditions in circumstances where medicines use has been optimised and are prescribed according to best evidence.'

Problematic

'The prescribing of multiple medicines inappropriately, or where the intended benefit of the medicines are not realised.'

Why?

- Lack of evidence base
- Risk of harm likely to outweigh benefit
- Drug combinations are hazardous due to interactions
- The overall demands of medicine-taking, or 'pill burden', are unacceptable to the patient, resulting in incomplete adherence
- prescribing cascade

02

What can we do to address polypharmacy?

Structured Medication review

- comprehensive review of a patient's medication, considering all aspects of their health, including balance of benefits and risks of continuing medication or alternative options. This should be a shared decision process between clinician and patient, ensuring it is person-centred.
- The objective: reaching an agreement with the patient about treatment, optimising the impact of medicines, minimising the number of medication-related problems, and reducing waste
- Ideally completed annually

Structured Medication review

- Obtain a full medication history, including privately obtained meds, eg, internet bought
- Review medication use: what are they taking, does it work, does it cause any side effects, do they have any concerns about their meds?
- Review list for DDIs and common side effects
- Obtain relevant medical history: appropriateness of current medication, as well as patient understanding
- Review each medication for appropriateness
- List and prioritise medication-related problems and discuss proposed changes with the patient

Address adherence

Swallowing difficulties

Use of reminder aids / devices / alarms – would this be helpful?

How are they managing their medication? In bottles / blisters / dosette boxes – can they open these? Can they read labels?

What social support is available?

Patients understanding of their medication and schedule

COM-B Framework: key components of adherence behaviour:
Capability, Opportunity, Motivation
Can be used to identify and implement interventions to support adherence

03

Deprescribing / medication optimisation

Definitions

Medicines optimisation

a person-centred approach to safe and effective medicines use, to ensure people obtain the best possible outcomes from their medicines.

Deprescribing

The complex process required for the safe and effective reduction or withdrawal of inappropriate medications. Takes into account the patient's physical functioning, co-morbidities, preferences, and lifestyle.

May use the term 'appropriate prescribing'

Underprescribing

The omission of potentially beneficial medications that are clinically indicated for treatment or prevention of a disease.

Deprescribing

- Important to involve the patient/carer in all healthcare decisions
- Continue to liaise with GPs and other specialists prescribing for that patient to ensure seamless care & duplication
- When thinking about deprescribing, need to consider level of frailty as opposed to chronological age, eg, secondary prevention meds
- Keep in mind, in frailty, treatment targets will differ
    - For example, thresholds for glucose control or blood pressure may not be as strict in elderly, frail patients
    - This may not be as applicable to patients living with HIV who present with frailty at a much younger age

Deciding to stop / reduce

Discontinue

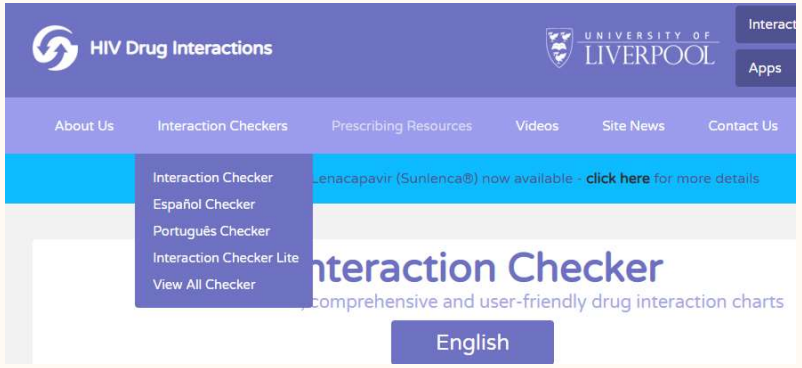
- Stop one at a time
- Gradually
- Consider rebound
- Enlist help of seniors or specialists

Continue

- Optimise therapy
- Reduce dose/frequency/ prn
- Substitute with a safer drug, formulation, schedule
- Wait and see

Also need to consider ART

- Is the current ART still appropriate?
- Consider a 2-drug regimen – would this minimise drug exposure and/or toxicities?
- DDIs to be considered as co-medications or co-morbidities increase
  - Use of Liverpool DDI checker



04

Medication toolkits

Practical Tools

NICE & EACS:
- **STOPP/START**
- **AGS BEERS**

Identify medication burden:
AGS BEERS Criteria + ACB burden calculator + MediChec

Assess appropriateness:
Medication Appropriateness Index (MAI) + STOPP/START

Deprescribing:
MedStopper + Deprescribing.org algorithms

Adjust for frailty or EOL:
STOPPFrail

Anticholinergic Burden Calculator

Antimuscarinics/Anticholinergics - Mechanism:

- Block acetylcholine, a key neurotransmitter
- Acetylcholine controls many parasympathetic functions: bladder emptying, heart rate, saliva, temperature regulation, vision, and gut movement.
- In the brain, acetylcholine supports alertness, concentration, and learning.

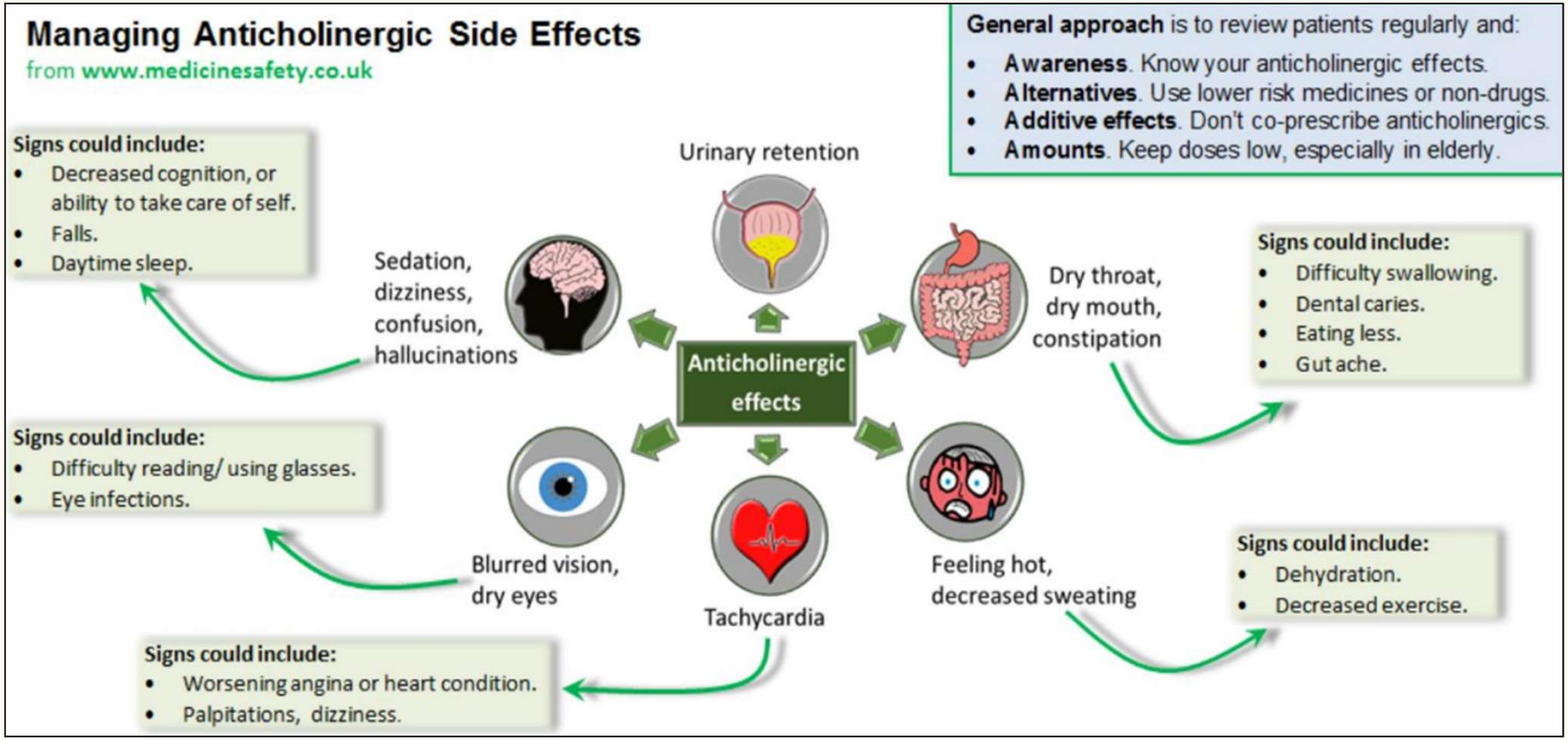
What the calculator does:

- Scores cumulative anticholinergic effect
- Higher burden = higher risk of adverse effects, especially in older or vulnerable patients
- Anticholinergic burden strongly linked with cognitive decline, dementia, falls, and even early death—every additional ACB point increases mortality risk by ~26% over 2 years

Anticholinergic Medication Use and Cognitive Impairment in the Older Population: The Medical Research Council Cognitive Function and Ageing Study - Fox - 2011 - Journal of the American Geriatrics Society

Falls & fractures → lead to immobility, hospitalisation complications (e.g., pneumonia, clots)

Cumulative frailty → increases overall risk of hospitalisation and death



Arrhythmias (fast/irregular) → risk of sudden cardiac death/cardiovasc events

Severe delirium/confusion → failure to eat/drink, infections, higher mortality

ACB calculator

Support Us | Home | About ACB | Medicines Scorecard

Start typing...

Score:
Medicine:
Brands:

Start typing...

Score:
Medicine:
Brands:

Start typing...

Score:
Medicine:
Brands:

+ Add new medicine | Reset

Total ACB Score:

- Drugs with possible anticholinergic burden score 1.
- Drugs with definite anticholinergic burden score 2 or 3.
- If you cannot find your medication listed in the calculator, you can assume it scores 0.

Has ACB Calculator helped you? Tell us about it

Webpage updated on 03 July 2024

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[7] and the Anticholinergic Cognitive Burden Scale[4] have been demonstrated to show most validity and reliability[8]. Therefore, we have used a combination of these 2 scales when creating the ACB calculator. When discrepancies arose, 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

ACB Calculator created by Dr Rebecca King & Steve Robins

Peggy Harrison 1920-2015

www.acbcalc.com

Now available as an app:

Available on the App Store

Get it on Google play

www.medichec.com

MEDICHEC

ASSESSMENT

01

One by one, type the names of the medications your patient is currently taking into the search bar

02

Click on the '+' symbol to add a medication to your list

03

Refer to the results below to see your entered medications

Search medication ..

Add custom drug

RESULTS

View side-effects: ☑ **View all**

☑ AEC ☑ QTc Prolongation

Sort by:

☐ High severity - Low severity drugs

(If selecting one side effect only)

Beers Criteria (AGS)

The Beers Criteria helps decide potentially inappropriate medication due to age-related changes in metabolism, comorbidities, and higher sensitivity to side effects

Table 1. Medications considered as potentially inappropriate
Table 2. Medications potentially inappropriate in patients with certain diseases or syndromes
Table 3. Medications to be used with caution
Table 4. Potentially inappropriate drug–drug interactions
Table 5. Medications whose dosages should be adjusted based on renal function

From THE AMERICAN GERIATRICS SOCIETY

A POCKET GUIDE TO THE

2023 AGS BEERS CRITERIA®

This clinical tool, based on the 2023 AGS Updated Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults (AGS Beers Criteria®), has been developed to assist healthcare providers in improving medication safety in older adults. Our purpose is to inform clinical decision-making concerning the prescribing of medications for older adults in order to improve safety and quality of care.

Originally conceived of in 1991 by the late Mark Beers, MD, a geriatrician, the Beers Criteria catalogues medications that cause side effects in the elderly due to the physiologic changes of aging. The 2023 American Geriatrics Society (AGS) Beers Criteria® (AGS Beers Criteria®) for Potentially Inappropriate Medication (PIM) Use in Older Adults is the seventh overall update and fourth since AGS became the criteria's steward in 2011. As with previous updates, the AGS and its expert panel have attempted to preserve the spirit and intent of the original Beers Criteria by providing an explicit list of PIMs that are best avoided by older adults in most circumstances or under specific situations, such as certain diseases, conditions, or care settings.

The full document, along with accompanying resources and an appendix of medications removed from the criteria tables, can be found in its entirety online at geriatricscareonline.org.

INTENDED USE

The criteria are intended to be applied to adults 65 years old and older in all ambulatory, acute, and institutionalized settings of care, except hospice and end-of-life care settings.

The intention of the AGS Beers Criteria® is to: (1) reduce older adults' exposure to Potentially Inappropriate Medications (PIMs) by improving medication selection; (2) educate clinicians and patients; and (3) serve as a tool for evaluating quality of care, cost, and patterns of drug use in older adults.

- This should be viewed as a guideline for identifying medications for which the risks of use in older adults often outweigh the benefits.
- The criteria are a blunt instrument, and we are unable to delineate all specialized use cases and possible exceptions to the criteria.
- This list is not meant to supersede clinical judgment or an individual patient's values and needs.
- Prescribing for older adults is often a complex endeavor involving the consideration of many factors, particularly the preferences and goals of the patient and family.
- These criteria are not meant to be applied in a punitive manner.
- These criteria also underscore the importance of using a team approach to prescribing and the use of non-pharmacological approaches and of having economic and organizational incentives for this type of model.
- The criteria are not applicable in all circumstances (i.e., patients receiving palliative and hospice care). If a provider is not able to find an alternative and chooses to continue to use a drug on this list in an individual patient, designation of the medication as potentially inappropriate can serve as a reminder for close monitoring and periodic review.

The primary target audience is the practicing clinician. Although the AGS Beers Criteria® may be used internationally, it is specifically designed for use in the United States and there may be additional considerations for certain drugs in specific countries.

AGS THE AMERICAN GERIATRICS SOCIETY
Geriatrics Health Professionals.
Leading change. Improving care for older adults.

PAGE 1

TABLE 1. 2023 American Geriatrics Society Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults

Organ System, Therapeutic Category, Drug(s)[a]	***Recommendation,*** Rationale, *Quality of Evidence* (*QE*[b]), *Strength of Recommendation* (*SR*[b])
Antihistamines	
First-generation antihistamines ■ Brompheniramine ■ Chlorpheniramine ■ Cyproheptadine ■ Dimenhydrinate ■ Diphenhydramine (oral) ■ Doxylamine ■ Hydroxyzine ■ Meclizine ■ Promethazine ■ Triprolidine	***Avoid*** Highly anticholinergic; clearance reduced with advanced age, and tolerance develops when used as hypnotic; risk of confusion, dry mouth, constipation, and other anticholinergic effects or toxicity. Cumulative exposure to anticholinergic drugs is associated with increased risk of falls, delirium, and dementia, even in younger adults. Consider total anticholinergic burden during regular medication reviews and be cautious in "young-old" as well as "old-old" adults. Use of diphenhydramine in situations such as acute treatment of severe allergic reaction may be appropriate. *QE = Moderate; SR = Strong*

TABLE 2. 2023 American Geriatrics Society Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults Due to Drug–Disease or Drug–Syndrome Interactions That May Exacerbate the Disease or Syndrome

Disease or Syndrome	Drug(s)[a]	***Recommendation,*** Rationale, *Quality of Evidence* (*QE*[b]), *Strength of Recommendation* (*SR*[b])
Cardiovascular		
Heart failure	Cilostazol Dextromethorphan-quinidine Nondihydropyridine calcium channel blockers (CCBs) ■ Diltiazem ■ Verapamil Dronedarone NSAIDs and COX-2 inhibitors	***Avoid: Cilostazol, Dextromethorphan-quinidine. Avoid in heart failure with reduced ejection fraction: Nondihydropyridine calcium channel blockers (CCBs), Diltiazem, Verapamil. Use with caution in patients with heart failure who are asymptomatic; avoid in patients with symptomatic heart failure: Dronedarone, NSAIDs and COX-2 inhibitors, Thiazolidinediones, Pioglitazone.*** Potential to promote fluid retention and/or exacerbate heart failure (NSAIDs and COX-2 inhibitors, non-dihydropyridine CCBs,

TABLE 4. 2023 American Geriatrics Society Beers Criteria® for Potentially Clinically Important Drug–Drug Interactions That Should Be Avoided in Older Adults

Object Drug or Class	Interacting Drug or Class	***Recommendation,*** Risk Rationale, *Quality of Evidence* (*QE*[a]), *Strength of Recommendation* (*SR*[a])
RAS inhibitor (ACEIs, ARBs, ARNIs, aliskiren) or potassium-sparing diuretics (amiloride, triamterene)	Another RAS inhibitor or potassium-sparing diuretic	***Avoid routinely using 2 or more RAS inhibitors, or a RAS inhibitor and potassium sparing diuretic, concurrently in those with chronic kidney disease Stage 3a or higher.*** Increased risk of hyperkalemia. *QE = Moderate; SR = Strong*

TABLE 3. 2023 American Geriatrics Society Beers Criteria® for Potentially Inappropriate Medications to Be Used with Caution in Older Adults[a]

Drug(s)[b]	***Recommendation,*** Rationale, *Quality of Evidence* (*QE*[c]), *Strength of Recommendation* (*SR*[c])
Dabigatran for long-term treatment of nonvalvular atrial fibrillation or venous thromboembolism (VTE)	***Use caution in selecting dabigatran over other DOACs (e.g., apixaban) for long-term treatment of nonvalvular atrial fibrillation or VTE. See also criteria on warfarin and rivaroxaban (Table 1) and footnote d regarding choice among DOACs.*** Increased risk of GI bleeding compared with warfarin (based on head-to-head clinical trials) and of GI bleeding and major bleeding compared with apixaban (based on observational studies and meta-analyses) in older adults when used for long-term treatment of nonvalvular atrial fibrillation or VTE. *QE = Moderate; SR = Strong*
Prasugrel Ticagrelor	***Use with caution, particularly in adults 75 years old and older. If prasugrel is used, consider lower dose (5 mg) for those 75 years old and older.***

TABLE 5. 2023 American Geriatrics Society Beers Criteria® for Medications That Should Be Avoided or Have Their Dosage Reduced with Varying Levels of Kidney Function in Older Adults

Drug	CrCl (mL/min) at Which Action Required	***Recommendation,*** Rationale, *Quality of Evidence* (*QE*), *Strength of Recommendation* (*SR*)
Anti-infective		
Ciprofloxacin	<30	***Doses used to treat common infections typically require reduction when CrCl <30 mL/min*** Increased risk of CNS effects (eg, seizures, confusion) and tendon rupture *QE = Moderate; SR = Strong*

Alternative Treatments

The **2023 AGS Beers Criteria**, together with the companion guide '**Alternative Treatments to Selected Medications in the 2023 Beers Criteria**', identifies high-risk drugs in older adults and suggests safer alternatives grouped by disease state

Journal of the American Geriatrics Society

Journal of the
American Geriatrics Society

SPECIAL ARTICLE

Alternative Treatments to Selected Medications in the 2023 American Geriatrics Society Beers Criteria®

American Geriatrics Society Beers Criteria® Alternatives Panel | Michael A. Steinman

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ABSTRACT

The American Geriatrics Society (AGS) Beers Criteria® serve to identify medications whose potential for harm outweighs their intended benefit in older adults. This highlights the need for guidance not only on what therapies to avoid but also on readily available alternative treatment strategies. AGS thus convened a multidisciplinary, interprofessional panel to develop a list of these alternative treatment strategies for older adults based on guidelines and evidence, updating an earlier effort published in 2015. This report presents these in a manner intended to be easily usable by front-line clinicians facing common clinical scenarios. The list includes pharmacologic alternatives to medications on the AGS Beers Criteria® as well as non-pharmacologic management strategies that are often safer and equally or more effective than the potentially inappropriate medications they are replacing. Clinician, patient, and caregiver resources are also provided to support the implementation of alternative treatment strategies in clinical practice.

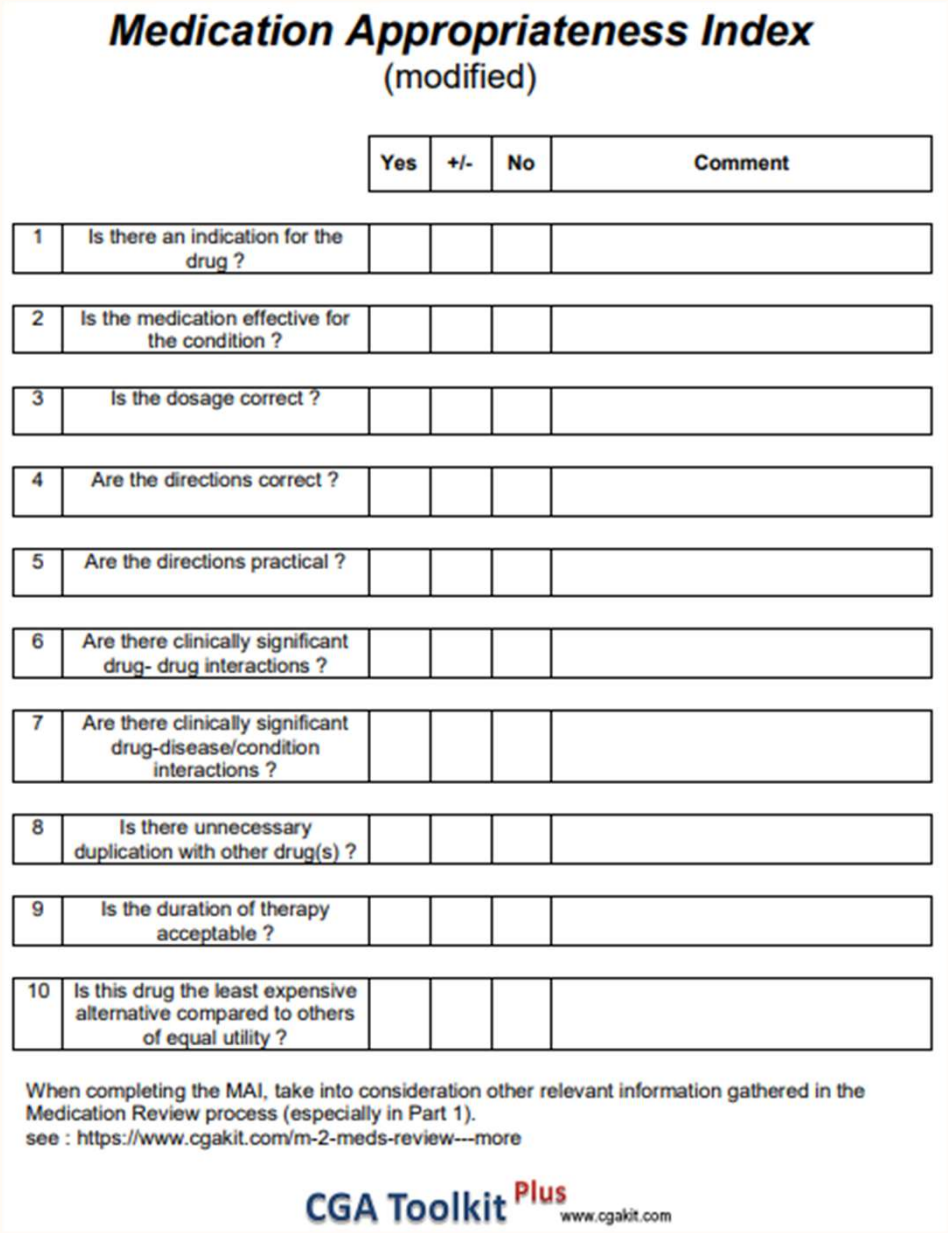
1 | Introduction

The 2023 American Geriatrics Society (AGS) Beers Criteria® and its preceding versions identify medications whose potential for harm outweighs their intended benefit in older adults compared with readily available alternatives [1]. However, clinicians, patients, and caregivers need guidance not only on what therapies to avoid, but on alternative non-pharmacologic and pharmacologic treatment strategies to consider in place of such potentially inappropriate medications. An initial version of such a list of alternatives was published in 2015, addressing medications from the 2012 AGS Beers Criteria® that were included in quality measures used by the Centers for Medicare and Medicaid Services (CMS) to evaluate quality of care provided to Medicare beneficiaries [2]. In the interim, several updated versions of the AGS Beers Criteria® have been published, and a decade has passed. To address the evolving nature of the AGS Beers Criteria® and the overall landscape of care, the AGS thus embarked on an effort to provide an updated list of alternative therapies to consider using in place of commonly used medications identified in the 2023 AGS Beers Criteria® and to present these in a way that would be maximally useful to clinicians caring for older adults.

The list includes common evidence-based alternatives, including non-pharmacologic management strategies that are often safer and equally or more effective than the potentially inappropriate medications they can replace. It does not presume that patients have already tried non-pharmacologic therapies. The list is not intended to be comprehensive or to give detail on deciding between these alternatives or a prioritized order of use; clinical judgment must always be used to determine how the alternatives should be applied to each individual patient. However, brief comments on the relative benefit/safety profile and preferred order of alternatives are noted when there is clear consensus based on clinical practice guidelines and/or expert opinion. Readers are guided to additional resources for more in-depth recommendations. Readers are also provided links to patient guides and other resources for help in implementing these alternative strategies into their clinical practice.

The members of American Geriatrics Society Beers Criteria® Alternatives Panel are given in Appendix 1.

Medication Appropriateness Index



Medication Appropriateness Index
(modified)

		Yes	+/-	No	Comment
1	Is there an indication for the drug ?				
2	Is the medication effective for the condition ?				
3	Is the dosage correct ?				
4	Are the directions correct ?				
5	Are the directions practical ?				
6	Are there clinically significant drug- drug interactions ?				
7	Are there clinically significant drug-disease/condition interactions ?				
8	Is there unnecessary duplication with other drug(s) ?				
9	Is the duration of therapy acceptable ?				
10	Is this drug the least expensive alternative compared to others of equal utility ?				

When completing the MAI, take into consideration other relevant information gathered in the Medication Review process (especially in Part 1).
see : https://www.cgakit.com/m-2-meds-review---more

CGA Toolkit Plus www.cgakit.com

STOPP:

Screening Tool of Older People's potentially inappropriate Prescriptions

STOPP/START

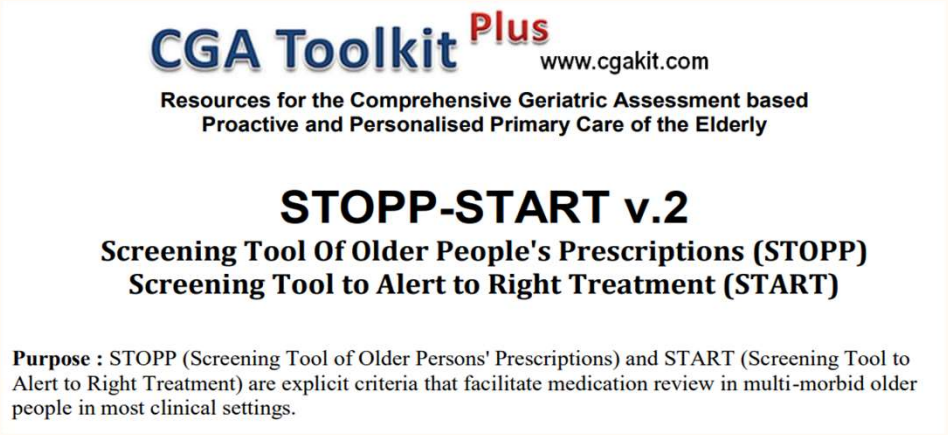
START:

Screening Tool to Alert doctors to Right Treatments

STOPP: Identifies **potentially inappropriate prescriptions** to reduce adverse events and polypharmacy.

START: Highlights **omissions of indicated treatments** to ensure appropriate medicines are prescribed.

- **114 criteria total** → 80 STOPP + 34 START
- **Developed by experts** (doctors, pharmacists, pharmacologists, GPs) across 13 European countries
- Organised by body systems (e.g., cardiovascular, CNS) with explanations for each criterion
- **Proven impact:** RCT evidence shows use of STOPP/START → improved prescribing appropriateness & fewer omissions in older hospitalised patients



BNF Chapter 4. Nervous System

STOP:

Tricyclic antidepressants (TCA) (particularly Dosulepin):

- with dementia *(risk of worsening cognitive impairment)*.
- with glaucoma *(likely to exacerbate glaucoma)*.
- with cardiac conductive abnormalities *(pro-arrhythmic effects)*.
- with constipation or medication likely to exacerbate constipation, following review *(likely to worsen constipation)*.
- with prostatism or prior history of urinary retention *(risk of urinary retention)*.

Benzodiazepines or hypnotics:

- with acute or chronic respiratory failure i.e. pO_2 less than 8.0 kPa and/ or pCO_2 greater than 6.5 kPa (*risk of exacerbation of respiratory failure*).
- if fallen in past 3 months.
- for longer than 4 weeks (*no indication for longer treatment; risk of prolonged sedation, confusion, impaired balance, falls, road traffic accidents; all benzodiazepines/ hypnotics should be withdrawn gradually if taken for more than 4 weeks as there is a risk of causing a withdrawal syndrome if stopped abruptly)*.

BNF Chapter 4. Nervous System

START:

Levodopa or dopamine agonist in idiopathic Parkinson's disease with definite functional impairment and resultant disability.

Antidepressant (non TCA) in the presence of moderate-severe depressive symptoms lasting at least three months (*higher risk of adverse drug reactions with TCAs than with SSRIs or SNRIs)*.

SSRI (or SNRI if SSRI is contra-indicated) for persistent severe anxiety that interferes with independent functioning, or for social anxiety disorder where patient declines cognitive behavioural therapy.

BNF Chapter 6. Endocrine System

STOP:

Sulfonylureas with a long duration of action (e.g. glibenclamide, chlorpropamide, glimepiride) with type 2 diabetes mellitus (*risk of prolonged hypoglycaemia*).

Metformin if eGFR below 30 ml/min/1.73m^2 (*risk of lactic acidosis*).

Pioglitazone in patients with heart failure (*risk of exacerbation of heart failure)*.

Oestrogens:

- with a history of breast cancer or venous thromboembolism *(increased risk of recurrence)*.

BNF Chapter 6. Endocrine System

START:

ACEI or AIIRA (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.

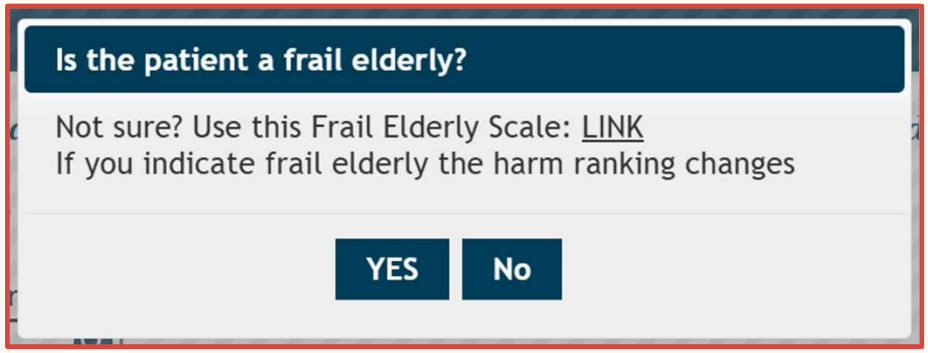
Bisphosphonates and vitamin D and calcium (where dietary calcium intake inadequate) in patients taking long-term systemic glucocorticosteroid therapy (greater than or equal to 7.5 mg prednisolone per day (or equivalent) for 3 months or more).

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).

MedStopper

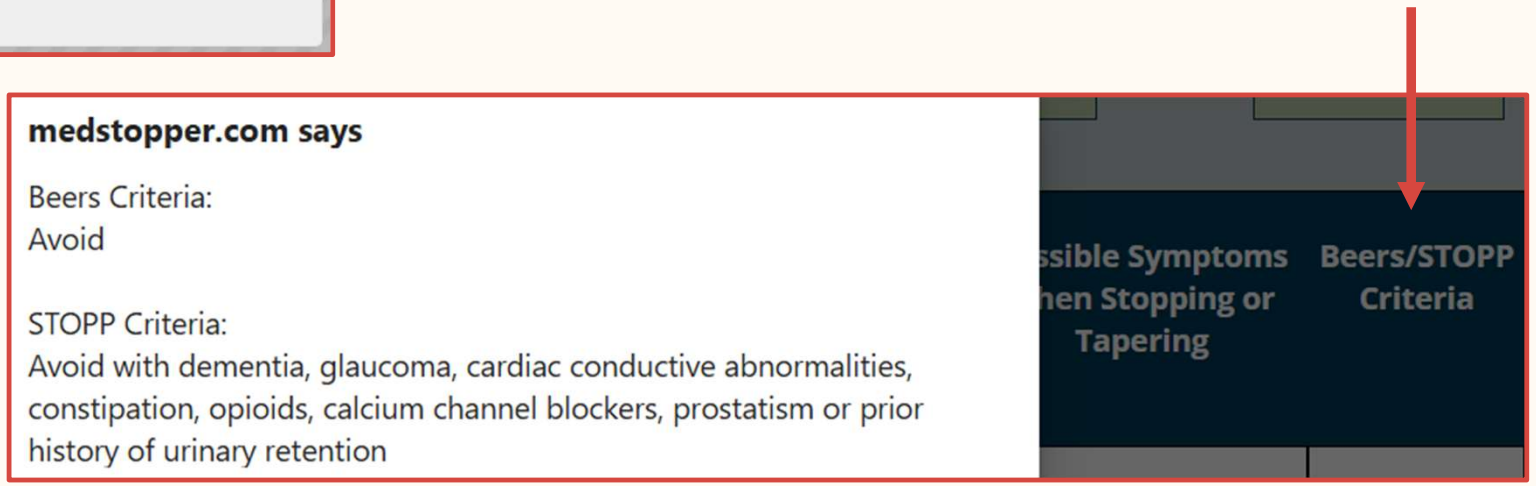
Guides clinicians in safely reducing or stopping medications in older adults.



How it Works:

- All patient medications are entered along with their indications
- Provides tapering guidance and symptom alerts
- The tool ranks drugs from “most to least likely to stop” using three criteria:

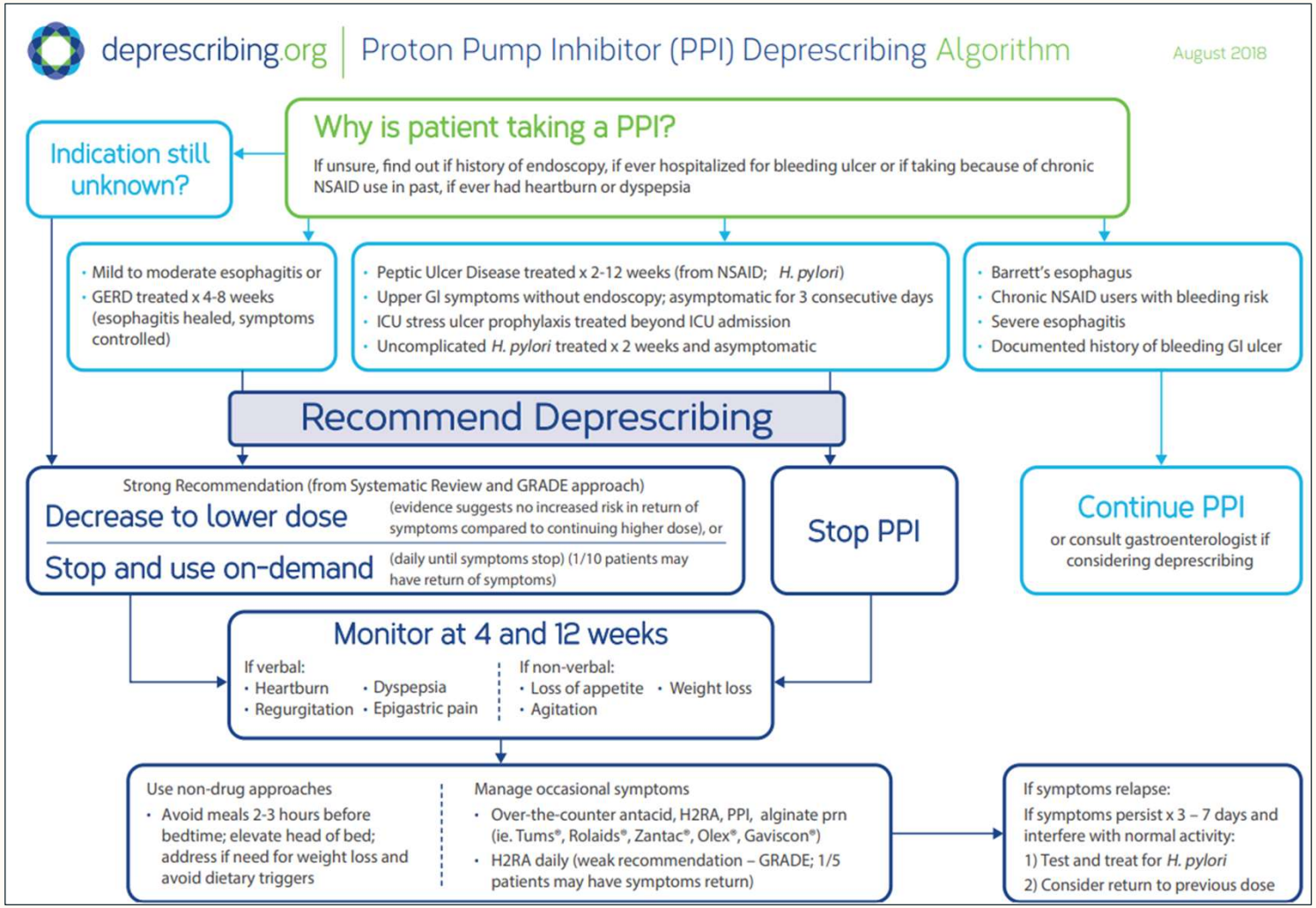
1. Potential to improve current symptoms
2. Potential to prevent future illness
3. Likelihood of causing harm



www.medstopper.com

Deprescribing.org

- Proton Pump Inhibitor
- Antipsychotics
- Anticholinergics
- Benzodiazepines
- Antihyperglycemics



Deprescribing.org

- Proton Pump Inhibitor
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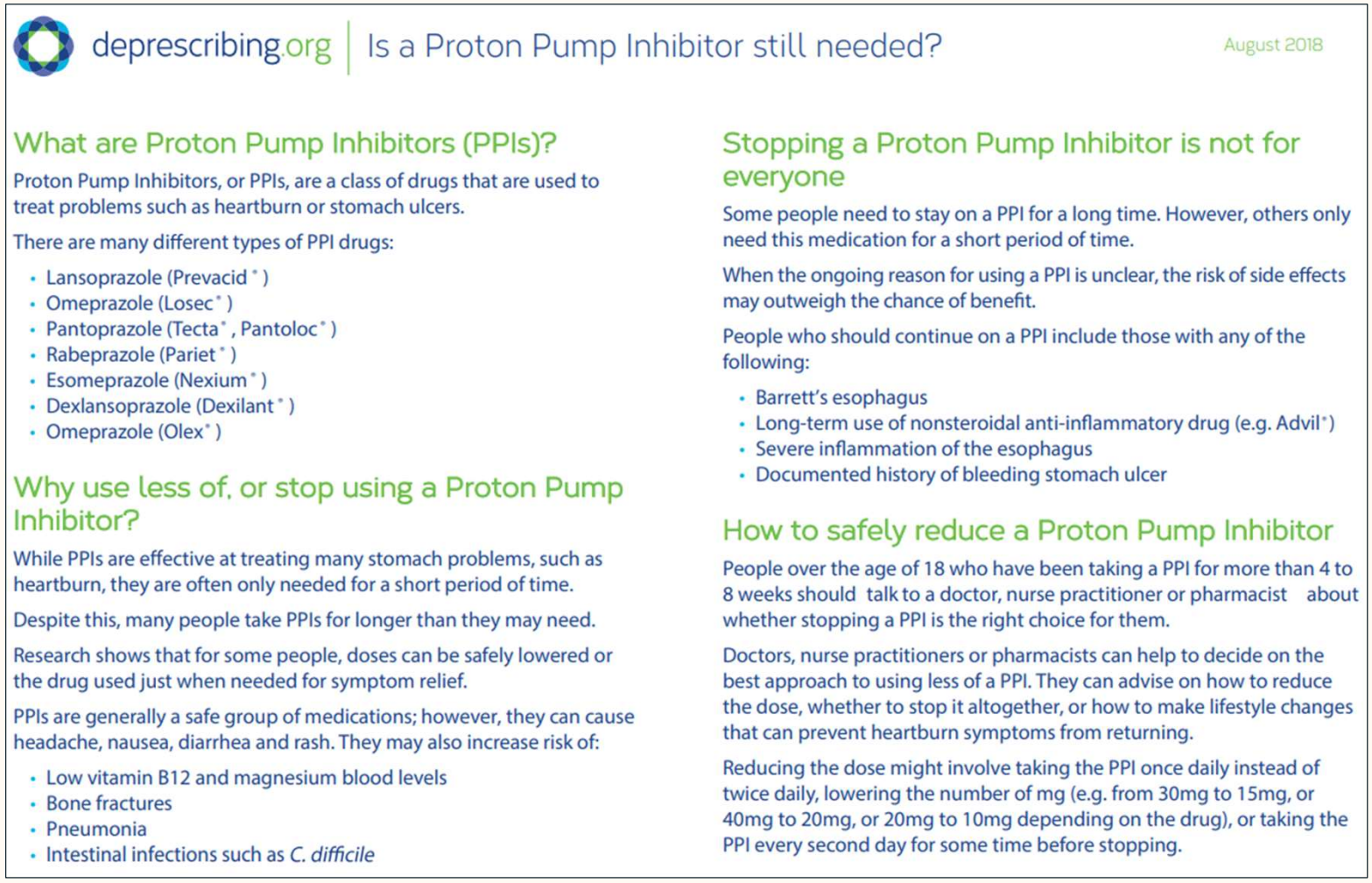

deprescribing.org | Is a Proton Pump Inhibitor still needed?

August 2018

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®, Pantoloc®)
- 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.

Deprescribing.org

- Proton Pump Inhibitor
- Antipsychotics
- Anticholinergics
- Benzodiazepines
- Antihyperglycemics

SHOULD I KEEP TAKING MY ACID REFLUX MEDICATION?

A consult decision aid for you to discuss whether to continue your proton pump inhibitor (PPI)

1. Why am I being offered this choice?

YOU HAVE TAKEN A PPI FOR AT LEAST 4 WEEKS (to treat mild/moderate heartburn or acid reflux)	Acid reflux happens when acid from your stomach travels into your esophagus (a tube that connects the mouth to the stomach). The acid causes heartburn, pain in the throat or trouble swallowing. PPIs stop release of acid in the stomach.
YOU HAVE NO SYMPTOMS	PPIs resolve symptoms and heal about 60 to 80% of patients after 4 to 8 weeks. Some people may not need to keep taking PPIs long-term. Guidelines suggest using the lowest effective dose for the shortest duration.
YOU DO NOT HAVE A REASON TO STAY ON A PPI LONG-TERM	Certain people need PPIs long-term (for example, those taking regular NSAIDs*, those with a history of a stomach bleed, Barrett's esophagus or severe inflammation in their esophagus). It is not be suitable for these people to stop their PPI.

*NSAID = non-steroidal anti-inflammatory drugs (e.g. ibuprofen [Advil], naproxen [Aleve])

2. What are your options?

●●● **Continue taking your PPI as you are now**

↘ **Use a lower dose of PPI**

Stop and use PPI "on-demand" (only when you have symptoms, for as long as it takes for symptoms to go away, then stop)

3. Rate the importance of benefits and harms of each option

CONTINUE VS. LOWER DOSE

This is the best estimate of what happens to 100 people with mild/moderate acid reflux who use a lower dose of PPI versus those who continue the same dose for 12 months.

Use stars ★ to show how much each benefit, risk, or reason matters to you. No stars means not at all. Five stars means a great deal. **Circle the number of stars that apply to you.**	Continue PPI ●●●	Use a lower dose of PPI ↘	How much does this matter? ⚖
SYMPTOMS COME BACK 6 **out of 100** more people's[++] symptoms will come back (between 3 less to 19 more people) There may be a slight or no increase in the chance of symptoms coming back if you take a lower dose of your PPI	43 out of 100	49 out of 100	★★★★★
Add other reasons to choose continue your PPI at the same dose:			★★★★★

CONTINUE VS. STOP AND USE ON-DEMAND

This is the best estimate of what happens to 100 people with mild/moderate acid reflux who use PPIs "on-demand" versus those who continue at the same dose over 3 to 6 months.

Use stars ★ to show how much each benefit, risk, or reason matters to you. No stars means not at all. Five stars means a great deal. **Circle the number of stars that apply to you.**	Continue PPI ●●●	Stop PPI and use "on-demand" ✋	How much does this matter? ⚖
SYMPTOMS COME BACK 7 **out of 100** more people's[++] symptoms will come back (between 3 more to 11 more people) There may be an increased chance of symptoms coming back if you stop and take your PPI on-demand	9 out of 100	16 out of 100	★★★★★
PILLS PER WEEK People[+++] will take 3.8 less pills per week on average (between 2.8 less to 4.7 less pills per week) You will likely take less pills if you take a PPI on-demand		3.8 less pills per week	★★★★★
Add other reasons to continue taking your PPI at the same dose:			★★★★★

RARE ADVERSE EFFECTS

It is uncertain whether the following adverse effects are associated with PPI use (versus those not taking PPIs) because the certainty of evidence is very low:

Use stars ★ to show how much each benefit, risk, or reason matters to you. No stars means not at all. Five stars means a great deal. **Circle the number of stars that apply to you.**	Continue PPI	No PPI	How much does this matter?
Community-acquired pneumonia If 10,000 people take PPIs for 1-6 months 18 more people may get community-acquired pneumonia compared to those who do not take PPIs [+]	68 out of 10,000 experience this	50 out of 10,000 experience this	★★★★★
***C. difficile* infection** If 10,000 people take PPIs 10 more people may get a *C. difficile* infection compared to those who do not take PPIs over 1 year [+]	22 out of 10,000 experience this	12 out of 10,000 experience this	★★★★★
Hip Fractures If 100,000 women take PPIs 24 more women may have a hip fracture compared to those who do not take PPIs (per year) [+] If 100,000 men take PPIs 15 more men may have a hip fracture compared to those who do not take PPIs (per year) [+]	**Women** 105 out of 100,000 **Men** 66 out of 100,000 experience this	**Women** 81 out of 100,000 **Men** 51 out of 100,000 experience this	★★★★★

STOPPFrail

What it does:

- Tailored tool identifying 27 potentially inappropriate meds in frail older patients with limited life expectancy

Why it matters:

- Promotes deprescribing in palliative or advanced frailty context, shifting focus to comfort and benefit rather than disease prevention.

Section B: Cardiovascular system

B1. Lipid lowering therapies
(statins, ezetimibe, bile acid sequestrants, fibrates, nicotinic acid and acipimox)
These medications need to be prescribed for a long duration to be of benefit. For short-term use, the risk of ADEs outweighs the potential benefits [43–45]

B2. Alpha-blockers for hypertension
Stringent blood pressure control is not required in very frail older people. Alpha blockers in particular can cause marked vasodilatation, which can result in marked postural hypotension, falls and injuries [46]

STOPP-Frail

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

STOPP-Frail is a list of potentially inappropriate prescribing indicators 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) Poor 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/not prescribe 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

05

Case studies: managing polypharmacy

Deprescribing is hard: Barriers

- Easier to leave things alone
- Easy to start drugs but difficult to stop
- Little evidence/guidance on how to deprescribe safely
- Medico-legal concerns
- Drug withdrawal in older people can be unpredictable/risky
- Time-consuming (if doing it properly)
- GP (and other specialists) reluctant to stop drugs where started by specialists or where there is a +ve guideline recommendation
- Consent and capacity issues in older people

Case 1: 60-year-old male

Drug	Indication
Odefsey – Emtricitabine, rilpivirine, TAF	Well controlled HIV
Atorvastatin 20mg ON	High cholesterol – Primary prevention
Indapamide 1.5mg	Hypertension
Amlodipine 5mg	Hypertension
Co-dydramol 2 QDS	OA hip
Promethazine 25mg ON prn	Sleep disturbance

Problems identified from clinic:

- Undertreated hypertension
- Hypokalaemia
- Urinary urge with incontinence
- Persistently elevated ALT
- Mobility impairment secondary to OA of right hip
- Non-frail on review

Case 1: drug considerations

Drug	Issue	Action
Odefsey – Emtricitabine, rilpivirine, TAF	Tolerating, no concordance issues, viral suppression	Unchanged
Atorvastatin 20mg ON	May be an issue if liver function worsened	Continued
Indapamide 1.5mg	Hypokalaemia, worsening urinary symptoms	Stopped
Amlodipine 5mg	Under treated hypertension	Increased to 10mg
Co-dydramol 2 QDS	Dihydrocodeine associated with constipation, falls, confusion	Continued
Promethazine 25mg ON prn	Sedative, associated with falls, but using sparingly	Continued
Anything missing?	Hypertension not controlled on 10mg amlodipine, BP 146/98, Q-risk 13.5%. 2nd drug needed	Losartan added and up-titrated to 50mg (cough with ACEi)

Case 1: post review

Regular drugs:

- Odefsey (Emtricitabine, rilpivirine, TAF)
- Atorvastatin 20mg ON
- Amlodipine 10mg OM
- Losartan 50mg OM

As needed drugs:

- Co-dydramol 2 QDS
- Promethazine 25mg ON prn

Other interventions from clinic:

- Orthopaedic review for hip pending
- Alcohol reduction advice
- Review of urinary symptoms off indapamide
- Ongoing up-titration of anti-hypertensive

Case 2: 66-year-old male

Drug	Indication
Dovato: dolutegravir, lamivudine	Well controlled HIV
Atenolol 50mg OM	Hypertension
Ramipril 10mg OM	Hypertension
Atorvastatin 20mg ON	High cholesterol
Vitamin D3 800units	Osteoporosis
Folic acid 5mg OM	Folate deficiency
Lansoprazole 15mg	Prescribed with NSAID
Hydroxyzine 25mg ON	Sleep disturbance

Additional comorbidities:

- Osteoporosis with T8 fracture
- Peripheral neuropathy

Problems identified from clinic:

- Multifactorial falls
- Profound fatigue
- Dizziness with no postural drop
- Low sodium
- Osteoporosis off treatment (had five years of alendronate)
- Symptoms of benign prostatic hypertrophy pending urology

Case 2: drug considerations

Drug	Issue	Action
Dovato: dolutegravir, lamivudine	Tolerating, no concordance issues, viral suppression	Unchanged
Atenolol 50mg OM	Fatigue as a side effect, not in hypertension guidance	Stopped
Ramipril 10mg OM	Falling, low BP. 24 hour BP average 115/73	Reduced to 5mmg
Atorvastatin 20mg ON	Indicated based on CV risk and tolerated	Continued
Vitamin D3 800units	Universal recommendation, plus osteoporosis	Continued
Folic acid 5mg OM	Deficient with ongoing risk	Continued
Lansoprazole 15mg	Prescribed alongside and NSAID, since stopped. No ongoing indication	Stopped
Hydroxyzine 25mg ON	Sedating, falls risk, prescribed for insomnia secondary to nocturnal itch.	Continued – patient request
? Anything missing	Antiresorptive treatment for osteoporosis. T-score -4.1 with multiple vertebral fractures (occurring on alendronate)	Alendronate recommenced, with calcium, exploring alternative treatments

Case 2: Post review

New drug list

- Dovato: dolutegravir, lamivudine
- Ramipril 5mg OM
- Atorvastatin 20mg ON
- **Calcium** and Vitamin D3
- Folic acid 5mg OM
- Hydroxyzine 25mg ON
- **Alendronate 70mg weekly**
- **Tamsulosin MR 400mcg OM**

(number of drugs increased)

- Still has polypharmacy – hard to avoid completely
- Non-pharmacological advice - orthostatic hypotension
- Dental intervention pending further osteoporosis treatment (high risk of osteonecrosis of jaw)
- Smoking cessation advice

Case 3: 77-year-old male

Drug	Indication
Lamivudine, Darunavir, Ritonavir	Well controlled HIV
Rosuvastatin 20mg ON	High cholesterol – Primary prevention
Amantadine 100mg OD	Fatigue in MS
Citalopram 20mg OD	Depression
Sodium valproate 500mg OD	Epilepsy
Levothyroxine 50mcg od	Hypothyroidism
Apidra (short acting), Lantus (long acting)	Type 2 Diabetes

Additional comorbidities:

- CKD stage 3 a
- CIDP with double incontinence
- Treated Hep C with cirrhosis

Problems identified from clinic:

- Problematic polypharmacy
- Recurrent falls with orthostatic hypotension
- Recurrent hypoglycaemia
- Decompensated liver disease – ascites
- Frailty with unmet care needs

Case 3: drug considerations

Drug	Issue	Action
Lamivudine, Darunavir, Ritonavir	Boosted regimen – risk of interactions	Switch - Lamivudine, Dolutegravir
Rosuvastatin 20mg ON	Could deprescribe given indication, accept higher target	Kept but for consideration
Amantadine 100mg OD	Causes postural hypotension – unclear benefit (though patient had faith in it)	Stopped
Citalopram 20mg OD	Causes postural hypotension – appeared ongoing need	Continued
Sodium valproate 500mg OD	Can cause neurological problems but deprescribing risks seizures	Continued
Levothyroxine 50mcg od	Hormone replacement	Critical to continue
Apidra (short acting), Lantus (long acting)	Hypoglycaemia – can accept higher HbA1c in frailty, could switch to oral medication	Short acting stopped, long acting reduced
Anything missing?	Decompensated liver disease – not on any treatment (eg spironolactone)	No addition – risk of worsening postural hypotension, conservative approached favoured

Case 3: Post review

New drug list

- Lamivudine
- Dolutegravir
- Rosuvastatin 20mg ON
- Citalopram 20mg OD
- Sodium valproate 500mg OD
- Levothyroxine 50mcg OD
- Lantus OD

(7 drugs from 10)

- Still has polypharmacy – hard to avoid completely
- Opportunities to:
  - further deprescribe
  - simplify regimen – injectable insulin to oral hypoglycaemic
- Non-pharmacological advice - orthostatic hypotension (avoided drug treatment)
- Also needed:
  - New care package
  - Bladder and bowel team input
  - Community falls team
  - Advanced care planning for CLD

Summary: The geriatrician's perspective

- Multimorbidity associated with prescription accumulation
- Polypharmacy linked to frailty and adverse outcomes
- Top 5 reason for referral to our HIV ageing service (Brighton)

- Medication review should aim to:
  - identify, and where possible deprescribe what is inappropriate
  - identify, and consider where missing drugs are needed or doses could be optimised

- Ideally this should be part of a comprehensive geriatric assessment
- Decisions should be made with patients and communicated clearly