



**Potentially Inappropriate Medications for Older Persons:
Independent of Diagnoses or Conditions**

Medications	Concern	Severity Rating
Pain Relievers and Muscle Relaxants		
Propoxyphene and combination products (Darvon®, Darvocet N-100®, Darvon with ASA®, Darvon-N)	Used to control pain. Propoxyphene offers little pain-relieving advantage over acetaminophen (Tylenol®), yet has the side effects of other narcotics.	Low
Indomethacin (Indocin®, Indocin SR®)	Used to control pain and swelling. Compared to drugs in the same class (NSAIDs), Indomethacin produces more side effects such as confusion, agitation, and unsteadiness.	High
Pentazocine (Talwin®)	Used to control pain. Pentazocine is a narcotic pain reliever that can cause confusion and hallucinations, more commonly than other narcotic medications.	High
Muscle relaxants and antispasmodics: Carisoprodol (Soma®) Chlorzoxazone (Paraflex®) Cyclobenzaprine (Flexeril®) Metaxalone (Skelaxin®) Methocarbamol (Robaxin®) Orphenadrine (Norflex®) Oxybutynin (Ditropan® - NOT Ditropan XL®)	Used to ease muscle spasms. Most drugs used to relax muscles and reduce muscle spasms are poorly tolerated by elderly patients because of side effects such as sleepiness and weakness.	High
Meperidine (Demerol®)	Used to treat pain. Meperidine is not an effective oral pain reliever and has many disadvantages compared to other narcotics. Avoid using in older persons. May cause confusion.	High
Ketorolac (Toradol®)	Used to control pain and swelling. Avoid using in older adults due to potential stomach upset and ulcers.	High
Naproxen (Naprosyn®, Avaprox®, and Aleve®) Oxaprozin (Daypro®) Piroxicam (Feldene®)	Used to control pain and swelling. These drugs, particularly when used frequently or at high doses, have the potential to produce stomach bleeding, kidney failure, high blood pressure, and heart failure.	High

Medications	Concern	Severity Rating
Antidepressants		
Amitriptyline (Elavil®) Chlordiazepoxide/amitriptyline (Limbitrol®) Perphenazine/amitriptyline (Triavil®) Doxepin (Sinequan®)	Used to treat depression. These medications can cause sedation, weakness, blood pressure changes, dry mouth, problems with urination, and can lead to falls and fractures. These are rarely the antidepressant of choice for older persons.	High
Fluoxetine (Prozac) taken daily	Used to treat depression. When taken daily, Fluoxetine may cause sleep disturbances and agitation. Safer alternatives for older persons are available.	High
Sleeping Pills and Anti-Anxiety Medications		
Flurazepam (Dalmane®)	Used to treat insomnia. This medication produces prolonged sleepiness and can increase the risk of falls and fractures.	High
Meprobamate (Miltown®, Equanil®)	Used to treat anxiety. Meprobamate is a highly addictive and sedating. Those who have been using it for long periods may be addicted and may need to be withdrawn slowly.	High
Alprazolam (Xanax®) – Doses 2 mg or greater Lorazepam (Ativan®) – Doses 3 mg or greater Oxazepam (Serax®) – Doses 60 mg or greater Temazepam (Restoril®) – Doses 15 mg or greater Triazolam (Halcion®) – Doses 0.25mg or greater	Used to treat insomnia and anxiety. Older people should be prescribed small doses of these medications. Total daily doses should rarely exceed the suggested maximum doses noted to the left.	High
Chlordiazepoxide (Librium®) Chlordiazepoxide/amitriptyline (Limbitrol®) Clidinium/chlordiazepoxide (Librax®) Diazepam (Valium®) Quazepam (Doral®) Halazepam (Paxipam®) Clorazepate (Tranxene®)	Used to treat insomnia and anxiety. These medications can produce prolonged sleepiness and can increase the risk of falls and fractures.	High
All barbiturates except phenobarbital: Butalbital (Fiorinal®, Fioricet®) Mephobarbital (Mebaral®) Pentobarbital (Nembutal®) Primidone (Mysoline®)	Used to treat insomnia and anxiety. Barbiturates cause more side effects than most other drugs used to induce sleep in the elderly and are highly addictive. They should not be started as new therapy in the elderly except when used to control seizures. Patients who have used barbiturates for a long period may be addicted.	High

Medications	Concern	Severity Rating
Secobarbital (Seconal®)		
Diphenhydramine (Benadryl®, also found in Tylenol PM® and many other non-prescription sleep medications)	Used to treat insomnia and allergies. Diphenhydramine can cause sedation, weakness, blood pressure changes, dry mouth, problems with urination, and can lead to falls and fractures. It should not generally be used by older persons as a sleep medication.	High
Heart Medications		
Disopyramide (Norpace®, Norpace CR®)	Used to treat abnormal heart rhythms (arrhythmias). Disopyramide can decrease the pumping action of the heart, which can lead to heart failure in older persons. It can also cause glaucoma, dry mouth, urinary retention and sleepiness. When appropriate, other antiarrhythmics should be used.	High
Digoxin (Lanoxin®) - 0.125mg per day or greater	Used to treat abnormal heart rhythms and heart failure. Because of decreased processing of digoxin by the kidneys, doses in older persons should rarely exceed 0.125 mg daily, except when treating certain types of abnormal heart rhythms. Poorly functioning kidneys may increase the risk of toxic effects associated with this drug.	Low
Dipyridamole (Persantine®) - Do not consider the extended-release dipyridamole (which has aspirin included and goes by name of Aggrenox®) except with patients with artificial heart valves.	Used to help stop blood from clotting in people who have experienced strokes, heart attacks, and other conditions. Dipyridamole frequently causes light-headedness upon standing in older persons.	Low
Methyldopa (Aldomet®) Methyldopa/HCTZ (Aldoril®)	Used to treat high blood pressure. Methyldopa may cause a slowed heartbeat and worsen depression. Alternate treatments for hypertension are generally preferred.	High
Reserpine (Serpasil®) Reserpine/HCTZ (Hydropres®) - Doses 0.25mg or greater	Used to treat high blood pressure. Reserpine imposes unnecessary risk in older persons, inducing depression, impotence, sedation, and light-headedness upon standing. Safer alternatives exist.	Low
Ticlopidine (Ticlid®)	Used to help prevent blood from clotting in people who have had strokes, heart attacks, and other conditions. Ticlopidine has been shown to be no better than aspirin in preventing clotting (except in a few specific conditions) and is considerably more toxic. Safer alternatives exist.	High
Amiodarone (Cordarone®)	Used to treat abnormal heart rhythms (arrhythmias). This drug can cause fainting or additional abnormal heart arrhythmias. It also may not work well in older adults.	High

Medications	Concern	Severity Rating
Guanethidine (Ismelin®)	Used to treat high blood pressure. Guanethidine may cause light-headedness upon standing in older persons. Avoid in older persons.	High
Guanadrel (Hylorel®)	Used to treat high blood pressure. Guanadrel may cause light-headedness upon standing in older persons.	High
Isoxsuprine (Vasodilan®)	Used to relax veins and arteries, which makes them wider and allows blood to pass through more easily. Other drugs may be more effective in older persons.	Low
Doxazosin (Cardura®)	Used to treat high blood pressure and enlarged prostate. Doxazosin can cause decreased blood pressure, light-headedness, dry mouth, and urinary problems.	Low
Nifedipine (Procardia®)	Used to treat high blood pressure and angina (chest pain). Short-acting nifedipine can cause decreased blood pressure, light-headedness, and constipation. This warning doesn't necessarily apply to long-acting or extended-release versions of Nifedipine, which is indicated by an ER, XL, or CC after the brand name.	High
Clonidine (Catapres®)	Used to treat high blood pressure, and sometimes neuropathic pain. Clonidine can cause light-headedness upon standing in older persons along with confusion, agitation, or dizziness.	Low
Ethacrynic acid (Edecrin®)	Used to treat high blood pressure and swelling. Ethacrynic acid can cause high blood pressure and can cause dehydration. Avoid in older persons.	Low
Diabetes Medications		
Chlorpropamide (Diabinese®)	Used to control blood sugar in people with diabetes. Chlorpropamide can cause prolonged and serious low blood sugar and other complications.	High
Stomach and Intestinal Medications		
Dicyclomine (Bentyl®) Hyoscyamine (Levsin®, Levsinex®) Propantheline (Pro-Banthine®) Belladonna alkaloids (Donnatal® and others) Clidinium/chlordiazepoxide (Librax®)	Used to treat stomach and intestinal cramps. These medications can cause sleepiness, weakness, blood pressure changes, dry mouth, problems with urination, and can lead to falls and fractures. All of these drugs are best avoided in older persons, especially for long term use. They have not been shown to be effective in older persons.	High
Promethazine (Phenergan®)	Used to treat nausea and vomiting. Promethazine can cause sedation, weakness, blood pressure changes, dry mouth, problems with urination, and can lead to falls and fractures.	High

Medications	Concern	Severity Rating
Stimulant laxatives – many of which are available in non-prescription laxatives, such as: Bisacodyl (Dulcolax®) Cascara Sagrada Sennosides (Senokot®, Senna-Lax®)	Used for constipation. Do not use for long periods of time because it may worsen bowel problems. This warning does not necessarily apply to the use of stimulant laxatives in patients taking opioid (narcotic) pain medications.	High
Trimethobenzamide (Tigan®)	Used to control nausea. Trimethobenzamide is one of the least effective medications used to control nausea and vomiting; yet it can cause severe side effects, such as stiffness, involuntary movements, difficulty swallowing, tremor, and confusion.	High
Mineral oil	Used for constipation. Among other side effects, mineral oil can cause pneumonia due to aspiration or inhalation of the liquid medication into the lungs upon lying down. Safer alternatives exist.	High
Cimetidine (Tagamet®)	Used to treat heartburn and block acid production in the stomach. Cimetidine can cause confusion and agitation.	Low
Antihistamines		
<p>Chlorpheniramine (Chlor-Trimeton®) Diphenhydramine (Benadryl®) Hydroxyzine (Vistaril®, Atarax®) Cyproheptadine (Periactin®) Promethazine (Phenergan®) Tripeleminamine (PBZ®) Dexchlorpheniramine (Polaramine®)</p> <p>Examples of other medications containing antihistamines: Actifed C® Poly-Histine CS® Bromfed DM® Ambenyl® Novahistine DH® Polyhistine DM® Tussionex®</p>	Used to treat runny nose of the common cold and allergy symptoms. Most non-prescription and many prescription antihistamines can cause sedation, weakness, blood pressure changes, dry mouth, problems with urination, and can lead to falls and fractures. Some antihistamines, which do not cause these side effects, are available and are safer substitutes in older persons.	High
Miscellaneous		

Medications	Concern	Severity Rating
Amphetamines and anorexic agents, such as: Benzphetamine (Didrel®) Dextroamphetamine (Dexedrine®) Diethylpropion (Tenuate®) Mixed amphetamines (Adderall®) Methamphetamine (Desoxyn®) Phendimetrazine Phentermine (Fastin®, Ionamin®)	Used to control behavior, treat depression, and induce weight loss in obese patients. These drugs have potential for causing agitation, confusion, dependence, hypertension, angina (chest pain), and heart attack.	High
Desiccated thyroid	Used to treat thyroid disorders. This particular type of thyroid medication can cause heart problems. Safer alternatives exist.	High
Ergot mesyloids (Hydergine®) Cycloandelate (Cyclospasmol®)	Used in various blood vessel diseases, mental/memory disorders, to prevent migraines, to treat certain types of dizziness and diabetic nerve pain/tingling. Have not been shown to be effective in the doses studied.	Low
Estrogens (tablets or capsules taken orally, by mouth)	Used for hormone replacement. Oral estrogen drugs have the potential to cause breast and endometrial cancer and these agents do not protect against heart disease in older women as once thought.	Low
Ferrous sulfate, also referred to as “iron” (Feosol®, Fer-In-Sol®, Slow FE®) – Doses greater than 325mg	Used to treat anemia associated with low iron levels. Ferrous sulfate (iron) is frequently given to older people with other types of anemia, for which it does not help. Iron supplements in doses greater than 325 mg of ferrous sulfate daily can cause or worsen constipation.	Low
Methyltestosterone (Android®, Virilon®, and Testrad®)	Used as a hormone replacement. Methyltestosterone has a potential to cause enlarged prostate and heart problems.	High
Nitrofurantoin (Macrochantin®)	Used to treat urinary tract infections. Nitrofurantoin has the potential to damage the kidneys. Safer antibiotics exist for use in older persons.	High
Thioridazine (Mellaril®), Mesoridazine (Serentil®)	Used to treat schizophrenia, psychosis, and may be used to treat distressed behaviors associated with dementia. Among similar medications, these medications have more potential to cause confusion. May also cause	High

Medications	Concern	Severity Rating
	agitation, stiffness, involuntary movements, difficulty swallowing, and tremor.	

Adapted from Fick DM, Cooper JW, Wade WE, Waller JL, Maclean JR, Beers MH. Updating the Beers Criteria for Potentially Inappropriate Medication Use in Older Adults. Results of a US Consensus Panel of Experts. Arch Intern Med 2003; 161: 2721.

AMERICAN SOCIETY OF CONSULTANT PHARMACISTS

1321 Duke Street, Alexandria, VA 22314 T. 800.355.2727 F. 800.220.1321 www.ascp.com