

DRUGS AND THE RISK OF FALLING

Which drugs can increase the risk of falls?

In theory ANY drug that causes one of the following effects can increase the risk of falling:

- Drowsiness
- Dizziness
- Hypotension
- Parkinsonian effects
- Ataxia/gait disturbance
- Vision disturbance

As well, theoretically ANY drug that causes the following effects can increase the risk of a serious outcome if the patient falls:

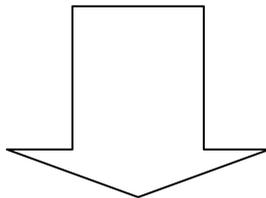
- Osteoporosis or reduced bone mineral density: Increased risk of fracture if a fall occurs
- Bleeding risk: Increased risk of a cerebral hemorrhage if a fall occurs

What can be done if a patient is taking a drug that can increase the falls risk?

Individualize treatment. Drugs are just one of many factors that can increase the risk of falling.

Assessment: Is this patient at high risk?

- Has the patient had a slip, trip, near fall or fall in the last 6 months?
- Is the patient taking a drug that can cause the effects listed above (see attached list of drugs)
- Is the patient taking a high dose of the drug?
- Is the patient displaying any of the adverse effects listed above, such as drowsiness?
- Is the patient elderly? Elderly patients may be more sensitive to adverse drug effects because of alterations in the way that the body absorbs, distributes or eliminates the drug.
- Is the patient taking more than one drug that increases the falls risk?
- Is the patient at high risk of falling for other, non-drug reasons?
- Is it difficult to monitor the patient for an adverse drug effect?



Consider intervention, especially if you have assessed the patient as high risk:

- Consider risk/benefit ratio: Does the benefit of the drug outweigh a possible risk of falling?
- Is there a safer drug or non-drug alternative?
- Is it possible to minimize the dose without losing the benefit of the drug?

Examples of drugs that can increase the risk of falling, or of a serious outcome if a fall occurs (and possible mechanisms)

Falls are often caused by multiple factors. This list should be used in conjunction with other fall prevention strategies. A patient should not be denied beneficial or necessary drug therapy based on this list.

<u>ACE Inhibitors</u> (3)	Methsuximide (1,2,5)	Chlorpheniramine	Methylprednisolone	<u>Opiates/narcotics</u>
Benazepril	Oxcarbazepine	Clemastine	Prednisolone	(1,2,3)
Captopril	(1,2,5,6)	Cyproheptadine	Prednisone	Alfentanil
Cilazapril	Phenobarbital (1,2)	Diphenhydramine	Triamcinolone	Butorphanol
Enalapril/enalaprilat	Phenytoin (1,2,5,7)	Hydroxyzine		Codeine
Fosinopril	Primidone (1,2)	Meclizine	<u>Digoxin</u> (mechanism unknown)	Fentanyl
Lisinopril	Topiramate (1,2)	Promethazine		Hydromorphone
Perindopril	Valproic acid (1,2,5)	Trimeprazine	<u>Eye drops</u> (6)	Meperidine
Quinapril	Vigabatrin (1,2)			Methadone
Ramipril		<u>Antipsychotics</u>		Morphine
Trandolapril		(1,3,4)	<u>Herbal and Natural health products</u>	Oxycodone
	<u>Antidepressants</u>	Chlorpromazine	<u>Natural sleep aids</u>	Oxymorphone
<u>Alcohol</u> (1,5)	(1,2,3,6)	Clozapine	<u>Natural products for sexual enhancement</u>	Nalbuphine
	Amitriptyline	Flupentixol	(possible adulteration with undeclared drugs)	Pentazocine
<u>Alpha Receptor Blockers</u> (2,3, especially initial doses)	Bupropion	Fluphenazine	<u>Metoclopramide</u> (1,2,4)	Propoxyphene
Alfuzosin	Citalopram	Haloperidol		Sufentanil
Doxazosin	Clomipramine	Loxapine	<u>Muscle Relaxants</u>	
Prazosin	Desipramine	Methotrimeprazine	(1,2)	<u>Sedative/hypnotics</u>
Tamsulosin	Doxepin	Olanzapine	Baclofen	<u>Benzodiazepines</u>
Terazosin	Escitalopram	Paliperidone	Carisoprodol	<u>Barbiturates</u> (1,2,5)
	Fluoxetine	Perphenazine	Chlorzoxazone	Alprazolam
<u>Anticoagulants</u> (8)	Fluvoxamine	Pimozide	Cyclobenzaprine	Bromazepam
Dalteparin	Imipramine	Pipotiazine	Dantrolene	Chloral hydrate
Danaparoid	Maprotiline	Prochlorperazine	Methocarbamol	Clorazepate
Enoxaparin	Mirtazapine	Quetiapine	Orphenadrine	Diazepam
Heparin	Moclobemide	Risperidone	Tizanidine	Diphenhydramine
Nadroparin	Nortriptyline	Thiopropazine		Doxylamine
Nicoumalone	Paroxetine	Thiothixene	<u>Nitrates</u> (2,3)	Flurazepam
Tinzaparin	Phenelzine 1,2,3	Trifluoperazine	Isosorbide dinitrate	Lorazepam
Warfarin	Sertraline	Zuclopentixol	Isosorbide mononitrate	Midazolam
	Tranylcypromine 2,3		Nitroglycerin	Nitrazepam
	Trazodone	<u>Corticosteroids, oral</u> (7)		Oxazepam
	Trimipramine	<u>Corticosteroids, inhaled, high-dose</u> (7)	<u>NSAIDs</u>	Pentobarbital
	Venlafaxine	Beclomethasone	ASA/acetilsalicylic acid (8)	Phenobarbital
<u>Anticonvulsants</u> (1,2,5,6,7)	<u>Antihistamines, sedating</u> (1)	Betamethasone		Temazepam
Carbamazepine	<u>Cold Medications that contain sedating antihistamines</u> (1)	Budesonide		Triazolam
(1,2,6)		Cortisone		Zopiclone
Ethosuximide (1,2,5)		Dexamethasone		
Fosphenytoin (1,2,5,7)		Fludrocortisone		<u>Thiazolidinediones</u>
Gabapentin (1,2,5,6)	Azatadine	Fluticasone		(7)
Lamotrigine (1,2,6)	Brompheniramine	Hydrocortisone		Pioglitazone
Levetiracetam (1,2,5)	Cetirizine			Rosiglitazone

Possible mechanisms (often unclear): (1) Drowsiness; (2) Dizziness; (3) Hypotension; (4) Parkinsonian effects; (5) Ataxia/gait disturbance; (6) Vision disturbance; (7) Osteoporosis or reduced bone mineral density increases the fracture risk if a fall occurs; (8) Risk of serious bleeding if a fall occurs.

Drugs are listed by generic (chemical) name under each drug group. For Brand (manufacturer's) names, check in the CPS to find the generic name.

This list includes only those drugs for which there is evidence of increased risk of falls or their consequences. There may be other drugs that increase this risk in certain patients.