## ANTICHOLINERGICS: Reference List of Drugs with Potential Anticholinergic Effects

When possible, **AVOID** drugs with moderate to high anticholinergic activity in older adults (>65 years of age).

<table>
<thead>
<tr>
<th>Low Anticholinergic Activity</th>
<th>Moderate/High Anticholinergic Activity</th>
</tr>
</thead>
</table>

### Antibiotics
- ampicillin
- cefoxitin
- clindamycin
- gentamicin
- piperacillin
- vancomycin
- solifenacin
- oxybutynin
- flavoxate
- nortriptyline
- vancomycin
- piperacillin
- gentamicin
- clindamycin
- vancomycin
- piperacillin
- gentamicin

### Antidepressants
- amitriptyline
- clomipramine
- desipramine
- doxepin
- imipramine
- nortriptyline
- trazodone
- sertraline
- doxepin
- imipramine
- nortriptyline
- trimipramine

### Antipsychotics
- ARIpaprazole
- asenapine
- chlorpromazine
- clozapine
- fluphenazine
- haloperidol
- loxapine
- risperidone
- trifluoperazine
- zuclopenthixol

### Antihistamines/Antipruritics
- triazolam
- midazolam
- clorazepate
- chlordiazepoxide
- clonazepam
- diazepam
- lorazepam
- oxazepam
- temazepam

### Antihistamines/Antipruritics
- cetirizine
- loratadine
- fexofenadine

### Antihistamines/Antipruritics
- brompheniramine
- chlorpheniramine
- cyproheptadine
- diphenhydramine
- doxylamine
- hydroxyzine
- pyrilamine
- promethazine
- triprolidine

### Antiparkinsonian
- amantadine
- benztropine
- bromocriptine
- carbidopa/levodopa
- entacapone
- ethopropazine
- procyclidine
- selegiline
- trihexyphenidyl

### Cardiovascular Agents
- atenolol
- captopril
- chlorothalidone
- digoxin
- diltiazem
- dipyramide
- disopyramide
- furosemide
- hydroxyzine
- isosorbide
- metoprolol
- nifedipine
- pimozide
- propranolol
- warfarin

### Gastrointestinal Agents
- atropine
- belladonna
- bisacodyl
- chlordiazepoxide/clozapine
diclofenac

### Antiseizure Drugs
- carbamazepine
- valproic acid

### Antipsomotics
- dicyclomine
- glycopyrrolate
- hydroxyzine butyrobromide

### Benzodiazepines
- ALPRAZolam
- clonazepam
- diazepam
- flurazepam
- levetiracetam
- oxazepam
- temazepam
- triazolam

### Immunosuppressants
- azathioprine
- cyclosporine
- hydrocortisone
- methylprednisolone

### Muscle Relaxants
- baclofen
- cyclobenzaprine
- methocarbamol
- orphenadrine
- tiAZidine

### Preferred Alternatives:
- acetaminophen
- NSAIDs (e.g., ibuprofen, naproxen)

### Opioids
- meperidine
- fentanyl
- morphine
- oxycodone
- tramadol

### Miscellaneous
- buspirone
- celecoxib
- ketotifen
- lithium
- metformin
- methotrexate
- pancuronium
- D5V

### Respiratory Meds
- aclidinium/formoterol
- fluticasone/salmeterol
- ipratropium/metaraminol
- glycopyrrolate/indacaterol
- pseudoephedrine
- theophylline
- tiotropium
- tiotropium/olodaterol
- umclidinium
- umclidinium/vilanterol
- umclidinium/vilanterol/fluticasone

### Antimuscarninics
- darifenacin
- flutamide
- mirabegron
- oxybutynin
- propantheline
- solifenacin
- tolterodine t-tartrate
- trospium

### Relaxants
- suxamethonium

### Antispasmodics
- dicyclomine
- glycopyrrolate
- hydroxyzine butyrobromide

### Other
- TCA
- SRT
- Ind.

### Notes:
- * = Possible preferred alternatives
- # = Denotes agents with anticholinergic activity that may be better tolerated than others. Whenever possible, anticholinergic drugs should be avoided, & the preferred agents used.
- ** = Unable to confirm anticholinergic activity (black font)
- AChEI = Acetylcholinesterase Inhibitor (e.g., donepezil, rivastigmine, galantamine)
- CR = Controlled Release Formulation
- DPI = Dry Powder Inhaler
- OTC = Over-the-counter
- * = Saskatchewan Health finds co-administration of this agent with an AChEI acceptable
- ** = If patient is currently on this medication, Saskatchewan Health will NOT cover AChEI
**Spectrum of Anticholinergic Side-Effects**

<table>
<thead>
<tr>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
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<tbody>
<tr>
<td>Dryness of mouth (modest)</td>
<td>Moderately disturbing dry mouth/thirst</td>
<td>Difficulty chewing, swallowing, speaking</td>
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<tr>
<td>Speech problems</td>
<td>Impaired perception of taste &amp; texture of food</td>
<td>Mucosal damage</td>
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<tr>
<td>Reduced appetite</td>
<td>Dental decay, periodontal disease, denture misfit</td>
<td>Malnutrition</td>
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<tr>
<td></td>
<td></td>
<td>Respiratory infection</td>
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<tr>
<td>Mild dilatation of pupils</td>
<td>Inability to accommodate</td>
<td>Increased risk of accidents &amp; falls leading to decreased function</td>
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<tr>
<td></td>
<td>Vision disturbances</td>
<td>Exacerbation/precipitation of acute angle closure</td>
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<tr>
<td></td>
<td>Dizziness</td>
<td>glaucoma</td>
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<tr>
<td>Esophagitis</td>
<td></td>
<td>Fecal impaction (in patients with constipation)</td>
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<tr>
<td>Reduced gastric secretions, gastric</td>
<td></td>
<td>Altered absorption of concomitant medications</td>
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<tr>
<td>emptying (atony)</td>
<td></td>
<td>Paralytic ileus, pseudo-obstruction</td>
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<tr>
<td>Reduced peristalsis, constipation</td>
<td></td>
<td></td>
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<tr>
<td>Urinary hesitancy</td>
<td>Urinary retention, urinary tract infection (in patients with urinary hesitancy)</td>
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<tr>
<td>Increased heart rate</td>
<td>Conduction disturbances supraventricular tachyarrhythmias</td>
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<tr>
<td></td>
<td>Exacerbation of angina</td>
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<tr>
<td></td>
<td>Congestive heart failure</td>
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<tr>
<td>Decreased sweating</td>
<td>Thermoregulatory impairment leading to hyperthermia (heart stroke).</td>
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<tr>
<td></td>
<td>(Additional risk if also on diuretic.)</td>
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<tr>
<td>Drowsiness</td>
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<tr>
<td>Fatigue</td>
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<tr>
<td>Mild amnesia</td>
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<tr>
<td>Inability to concentrate</td>
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**Total Anticholinergic Load:** both highly anticholinergic drugs plus others (e.g. digoxin, paroxetine, ranitidine) contribute to the anticholinergic load & cognitive impairment. Review each medication the patient is taking.

**Tips to Deal with Anticholinergic Side-Effects**

**General approach:**
- Identify the cause
- Discontinue unnecessary offending medications
- Reduce the dose
- Look for effective alternatives that are less likely to cause the side effect

**Dry Mouth:**
- 80% of the most commonly prescribed medications can cause dry mouth (e.g. incontinence meds, Parkinson’s meds, antidepressants, NSAIDs, opioids, muscle relaxants, antihistamines, benzodiazepines, antihypertensives [clonidine, alpha-blockers, beta-blockers, calcium channel blockers, diuretics, ACE inhibitors]).
- When appropriate, instruct patients to take meds associated with dry mouth early in the day since salivary production is lowest at night.
- Divided doses may also be less likely to cause dry mouth than a single large dose.
- Consider therapeutic alternatives that are less likely to cause dry mouth.
- **Avoid:** alcohol-containing mouthwashes, alcoholic beverages, caffeine, tobacco.
- Swish mouth with water every 2 hours.
- Drink plenty of fluids while eating to make swallowing easier; avoid foods that are hard to chew.
- Chewing sugar-free gum or sucking on sugar-free candy mechanically stimulates salivation and can be recommended to promote salivation in patients with functioning salivary glands.
- **Nondrug options:** bedroom humidifier; artificial saliva or oral lubricants (MOUTH KOTE, BIOTENE GEL, ORAL BALANCE GEL, MOI-STIR SPRAY for Palliative care).
- Pharmacologic options: pilocarpine (muscarnic agonist) 5 to 10mg of pilocarpine 3 or 4 times daily to a max of 30mg daily – will cause salivation in patients with functioning salivary glands. Duration of action is 3 to 5 hours. Common side effects (dose-dependent): sweating, nausea, rhinitis, flushing, urinary frequency. CI: uncontrolled asthma, narrow-angle glaucoma, acute iritis. Pilocarpine eye drops cost significantly less than pilocarpine tablets and can be used orally for treatment of dry mouth. 4 drops of the 2% solution, directly on tongue or add to small amount of water & swish and swallow, 3 times daily (can swish and spit to reduce systemic side effects).