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Memory-Impairing Drugs

by Ann Gerhardt *August 2017*

The cholinergic nervous system is activated by acetylcholine. It facilitates bodily functions that we don't consciously control. These include memory, attention, heart rate, lung air flow, saliva and tears production and movement of food and fluid through the stomach and intestine.

Diseases that damage the cholinergic nervous system, like Parkinson's, Huntington's and schizophrenia have a detrimental impact on memory. Medications and herbs that block the cholinergic system also impair memory.

Substances that inhibit the cholinergic system, called anticholinergics, include many commonly prescribed drugs and herbs. They inhibit cholinergic nerve impulses by blocking acetylcholine's activation of nerve cells.

We use some medications and herbs primarily to work as an anticholinergic. These include motion sickness drugs, anti-spasmodics, anti-diarrheal medication and remedies for excessive tearing, runny nose or salivation, asthma and overactive bladder. Other remedies have multiple mechanisms of action, with only minor anticholinergic activity.

When we use these medications, we may be acutely aware of the common side effects of dry eyes and mouth and constipation. We may not be aware that they also impair memory for facts, concentration and movement speed. The cumulative load of anticholinergic exposure seems to be correlated with worse memory and attention.

Thankfully, most people with anticholinergic memory impairment do not develop full-blown dementia. Anticholinergics don't impair intelligence, working memory, logic, speech, reasoning, understanding concepts and ability to move and feel. For example, scopolamine, the drug in motion sickness patches, makes young people have what we think of as old-age memory problems, but not full-blown dementia.

The elderly risk more trouble with anticholinergic effects, because they may already have some age-related memory loss and often have slower drug clearance and interactions with other medications. They also commonly take medicines for nausea, Parkinson's disease, muscle relaxants, ulcer and acid reflux and psychiatric problems, many of which have anticholinergic effects.

As with any medication, one must weigh the risks and benefits to decide whether or not to take it. Anyone taking an anticholinergic who is not aware of any effect on their memory and appreciates the benefit of the medication (for example, being able to breathe or not have to wear diapers for incontinent urine) might decide to continue it. Anyone taking more than one of the strongly anticholinergic substances could consider alternatives, with the help of their doctor. Remember that herbs that might replace an anticholinergic medication are likely anticholinergic also.

Consider the total anticholinergic load before deciding to make changes, and never stop prescription medication before consulting with your doctor.

Here is a list of medications (the generic names) and herbs with anticholinergic effects.
Marked anticholinergic effect: amitriptyline, amoxapine, atropine, benztropine, brompheniramine, carbinoxamine, chlorpheniramine, chlorpromazine, clemastine, clomipramine, clozapine, darifenacin, desipramine, dicyclomine, dimenhydrinate, diphenhydramine,

doxepin, flavoxate, glycopyrrolate, hydroxyzine, hyoscyamine, imipramine, meclizine, mepenzolate, methscopolamine, nortriptyline, olanzapine, orphenadrine, oxybutynin, perphenazine, promethazine, propantheline, protriptyline, scopolamine, thioridazine, thiothixene, tizanidine, tolterodine, trifluoperazine, trihexyphenidyl, trimipramine, trospium. **Herbs (considered to be poisonous plants):** Atropa belladonna (deadly nightshade), Brugmansia, Datura, henbane (Hyoscyamus niger) and mandrake (Mandragora officinarum.)

Moderate anticholinergic effect: amantadine, baclofen, carbamazepine, carisoprodol, cetirizine, cimetidine, clidinium, cyclizine, cyclobenzaprine, cyproheptadine, disopyramide, fluphenazine, loperamide, loratadine, loxapine, meperidine, methocarbamol, oxcarbazepine, pimozide, prochlorperazine, pseudoephedrine, quetiapine, trimethobenzamide. **Herbs**: There are some Chinese remedies for asthma that contain alkaloids, but I couldn't confirm that they were belladonna (anticholinergic) alkaloids.

Mild anticholinergic effect: alprazolam, aripiprazole, asenapine, captopril, chlordiazepoxide, chlorthalidone, clonazepam, clorazepate, codeine, diazepam, digoxin, dipyridamole, famotidine, fentanyl, fluoxetine, flurazepam, fluvoxamine, furosemide, haloperidol hydralazine, iloperidone, isosorbide, mirtazapine, morphine, nifedipine, nizatidine, oxycodone, paroxetine, prednisone, quinidine, ranitidine, risperidone, temazepam, tramadol, trazodone, triamterene, warfarin, ziprasidone.╣