

## MEDICATIONS & DYSPHAGIA

It is important that once dysphagia is diagnosed, recommendations are made regarding the safe administration of medications (e.g. crush pills and administer with pudding/yogurt). This is usually addressed by the speech language pathologist who performs the swallowing evaluation or the individual's physician. It is important that those recommendations and the individual's current medication list are then reviewed with the pharmacist so further instruction can be provided. For example, some medications are not recommended to be crushed or some may be switched to a liquid form if it is safer for the individual.

Certain medications may affect the way people chew or swallow. For example, some medications may irritate the esophagus and/or weaken muscle tone which may in turn cause a swallowing problem. It is important that when dysphagia is diagnosed, the physician reviews the individual's medications to determine if there may be side effects causing the swallowing issue.

When new medications are ordered it is important to monitor the individual for any changes, including changes in chewing or swallowing. If changes are observed, the physician should be notified promptly. Below are some examples of medications that may cause problems with swallowing. It is important to remember that individuals react differently to medications. Even if a medication is ordered that is not included in the information below, observation for dysphagia should still occur.

### Medications Which May Cause Problems with Swallowing

#### **Concern: Dry mouth (xerostomia)**

Xerostomia (dry mouth) is a side effect of many medications. Dryness in the mouth can cause difficulties in swallowing as it will impair the individual's ability to safely move the bolus (food). It may also decrease salivary gland performance which aids in neutralization of esophageal acid. See below for some examples (not all-inclusive) of medications that can cause xerostomia.

Medication Types	Examples
<b>Antidepressants</b>	Citalopram (Celexa) Fluoxetine (Prozac) Fluvoxamine (Luvox) Paroxetine (Paxil) Sertraline (Zoloft)
<b>Antiemetics (nausea medications)</b>	Meclizine (Antivert) Metoclopramide (Reglan) Prochlorperazine (Compazine)
<b>Antihistamines and decongestants (treats allergy and cold symptoms)</b>	Chlorpheniramine (Chlor-Trimeton) Diphenhydramine (Benadryl) Pseudoephedrine (Sudafed)
<b>Blood pressure and cardiac medications</b>	Amlodipine (Norvasc) Captopril (Capoten) Lisinopril (Prinivil, Zestril)
<b>Diuretics (removes excess fluid; "water pill")</b>	Bumetanide (Bumex) Ethacrynic acid (Edecrin) Furosemide (Lasix)

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### Concern: Dry mouth; abnormal involuntary movements

Medications that treat psychiatric disorders can affect swallowing as many of them result in a dry mouth and may also cause abnormal involuntary movements. These abnormal involuntary movements impact the muscles of the face and tongue, which are used for chewing and swallowing. See below for some examples (not all-inclusive) of these medications.

Chlorpromazine (Thorazine)	Olanzapine (Zyprexa)
Clozapine (Clozaril)	Quetiapine (Seroquel)
Haloperidol (Haldol)	Risperidone (Risperdal)
Lithium (Eskalith, Lithobid)	Thioridazine (Mellaril)
Loxapine (Adasuve, Loxitane)	Trifluoperazine (Stelazine)

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### Concern: Weakening of sphincter muscle

Some medications weaken the lower esophageal sphincter (LES). The LES is a ring of muscle at the bottom of the esophagus, just before it meets the stomach. Usually the LES relaxes when we swallow and closes tightly after we eat or drink. A weakened LES may increase gastric reflux which can lead to esophageal strictures (narrowing of the esophagus). This damage to the esophagus leads to problems with the esophageal phase of swallowing. See below for examples (not all-inclusive) of medications that can weaken/relax the LES.

Medication Types	Examples
<b>Anticholinergics</b>	Benzotropine (Cogentin) Dicyclomine (Bentyl)
<b>Antidepressants</b>	Amitriptyline Imipramine (Tofranil) Nortriptyline (Pamelor)
<b>Antihistamines</b> (treats allergy symptoms)	Diphenhydramine (Benadryl)
<b>Asthma medications</b>	Albuterol (ProAir HFA, Proventil HFA, Ventolin HFA) Theophylline (Elixophyllin, Theochron, Uniphyll)
<b>Bisphosphonates</b> (treats osteoporosis)	Alendronate (Fosamax) Risedronate (Actonel)
<b>Blood pressure and cardiac medications</b>	Amlodipine (Norvasc) Metoprolol (Lopressor) Propranolol (Inderal)
<b>Non-steroidal anti-inflammatories (NSAIDs): treat pain, arthritis, fever</b>	Aspirin Ibuprofen (Motrin, Advil) Naproxen (Aleve)
<b>Sedatives</b>	Clonazepam (Klonopin) Lorazepam (Ativan) Propofol (Diprivan)

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### Concern: Loss of sensation

Some local anesthetics used for dental work cause a temporary loss of sensation. This can affect an individual's ability to swallow until the effects of the medication wear off. See below for some examples (not all-inclusive) of these medications.

Novocain	Procaine
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### Concern: Irritation and damage to esophagus

Some medications can cause irritation and result in damage to the esophagus. This can happen due to not taking enough water/fluid with the medication or from going into a reclining position shortly after taking the medication. These cause the medication to remain in the esophagus for too long. This can cause damage to the esophagus and lead to esophagitis, which can cause painful or difficult swallowing. See below for some examples (not all-inclusive) of drugs that can cause damage to the esophagus.

Medication Types	Examples
<b>Acid-containing antibiotics</b>	Clindamycin (Cleocin) Doxycycline (Vibramycin) Erythromycin (Ery, E-mycin) Tetracycline (Sumycin)
<b>Bisphosphonates</b> (treat osteoporosis)	Alendronate (Fosamax) Risedronate (Actonel)
<b>Bronchodilators</b> (treat asthma)	Theophylline (Elixophylline, Theochron, Uniphyll)
<b>Iron-containing medications</b>	Feosol, Feratab, Slow-FE, ferrous sulfate, iron supplements
<b>Non-steroidal anti-inflammatories (NSAIDs):</b> treat pain, arthritis, fever	Aspirin Ibuprofen (Motrin, Advil) Naproxen (Aleve)
<b>Potassium chloride supplements</b>	K-Dur, K-tabs, Klar-Con, Slow K
<b>Vitamin C (ascorbic acid) supplements</b>	Acerola, Ascocid, Ascor, Halls Defense Vitamin C

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### Concern: Damage to esophagus; weakened immune system

Some chemotherapeutic (anti-cancer) drugs and high-dose steroids can cause damage to the esophagus. They may also weaken the immune system which makes the individual susceptible to infections (e.g. herpes virus infection, thrush) which can affect chewing and swallowing.

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### Concern: Drug toxicity

Some medications have what is called a narrow therapeutic index. This means that small differences in the dose or blood concentration of these medications can lead to toxicity. Symptoms of drug toxicity include a decrease in mental awareness, muscle weakness, lack of coordination, and confusion, which can affect an individual's ability to swallow. Some anticonvulsants (seizure medications) and psychotropic medications have a narrow therapeutic index. These require routine blood work to monitor the blood concentration of the drug. See below for some examples (not all-inclusive).

Carbamazepine (Tegretol)	Phenobarbital (Luminal, Solfoton)
<b>Divalproex (Depakote)</b>	Phenytoin (Dilantin)
Lithium (Carbolith, Eskalith, Lithobid)	Valproic Acid (Depakote)

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### Concern: Decreased awareness and control

Medications that depress the central nervous system (CNS) can decrease an individual's awareness and muscle control. This can affect one's swallowing function. See below for some examples (not all-inclusive) of medications that have these effects.

Medication Types	Examples
<b>Antiepileptics</b> (treat epilepsy/seizures)	Carbamazepine (Tegretol) Gabapentin (Neurontin) Phenobarbital Phenytoin (Dilantin) Valproic acid (Depakote)
<b>Benzodiazepines</b> (anti-anxiety drugs)	Alprazolam (Xanax) Clonazepam (Klonopin) Diazepam (Valium) Lorazepam (Ativan)
<b>Narcotics</b> (treat pain)	Codeine & acetaminophen (Tylenol #3) Fentanyl (Actiq, Duragesic, Lazanda) Hydrocodone + acetaminophen (Norco, Vicodin) Oxycodone + acetaminophen (Endocet, Percocet) Propoxyphene + acetaminophen (Darvocet)
<b>Muscle relaxants</b> (relieve muscle spasms, relax muscles)	Baclofen (Lioresal) Cyclobenzaprine (Flexeril) Tizanidine (Zanaflex)

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### Concern: Contraindicated with dysphagia

Some medications are contraindicated (should not be used) for individuals with dysphagia or a swallowing problem. See below for some examples (not all-inclusive).

Medication	Reason
Psyllium husk (Metamucil, Citrucel)	May swell and block throat/esophagus and cause choking, should not be taken with swallowing problems / dysphagia
Mineral oil	Increased risk of aspiration of this medication, should not be taken with swallowing problems / dysphagia

### Remember:

Anytime a medication is prescribed, it is important to observe the individual for changes, especially for difficulties in eating and drinking. If changes are observed, they must be reported to the appropriate person (e.g. agency nurse, health care coordinator) so the physician can be notified promptly. It is also important to complete the *Eating, Drinking and Swallowing Checklist* when there are medications additions, changes in dosages, changes in mental condition, and changes in medical conditions.