



## XEROSTOMIA (DRY MOUTH) Patient Information Handout

### **Definition:**

Xerostomia (pronounced “zero-sto’me-ah”) is the medical word for dry mouth due to decreased or absent saliva. This problem is quite common & is caused by a variety of medical conditions and medications.

### **Helpful Hints:**

- Sip cool water throughout the day, let ice chips melt in mouth (don’t chew ice!) – most people do not drink enough fluids & this will contribute to a dry mouth.
- Try drinking milk with meals – milk has moisturizing properties & helps some people to swallow their food.
- Restrict caffeine intake – caffeine is a MAJOR cause of dry mouth. Use caffeine-free tea, coffee & sodas – eliminating caffeine from your diet will have a significant effect on the symptoms of dry mouth.
- Use a cool air humidifier in the bedroom – clean & change water daily – start the humidifier an hour or two before bedtime & let it run through the night.
- Use sugar-free candy, gum & beverages, look for products that contain Xylitol (a sweetener that does not cause cavities) – overuse of acidic candies & foods can cause a sore mouth – chewing gum will stimulate saliva flow.
- Use hydrous lanolin on lips frequently during the day & especially at bedtime.
- If possible, sleep on your side in order to reduce mouth breathing.
- See your dentist frequently – people with dry mouth are more prone to oral yeast infections as well as dental cavities – report any unusual oral soreness or burning sensations to your dentist – excellent oral hygiene is necessary to prevent cavities & gum disease.

### **Commercial Saliva Substitutes, Stimulants & Moisturizing Gels:**

The products listed below are available without a prescription & can be found or ordered from many pharmacies. These products are very helpful in alleviating the symptoms of dry mouth. They can be used as often as needed, do not interfere or react with other prescription drugs & do not have side-effects.

**Tablets:** SalivaSure Tablets (Scandinavian Formulas, Inc)- 90 ct. bottle \$7.95 – to stimulate natural saliva flow, dissolve one tablet slowly under tongue up to every hour as needed; highly recommended, will not cause cavities or sore mouth; easy to carry, mild mint flavor, no drug interactions; May be difficult to obtain, call the Dental Pharmacy (319)335-7435 & have a supply mailed to you. Can order from CVS without prescription.

**Gel:** Oral Balance (Laclede) – 1.5 oz tube of gel – moisturizing water based gel, especially useful at nighttime – spread on tissues & under dentures as needed for long-lasting effects.

**Liquid:** Oral Balance (Laclede) -4.5 oz bottle of dry mouth moisturizing liquid – long-lasting & helps with swallowing – contains xylitol, 5 moisturizers, 18 amino acids & milk proteins, salivary enzymes.

**Toothpaste:** Biotene Toothpaste (Laclede) – 4.5 oz tube – mild tasting, gently cleaning toothpaste, contains fluoride- also available in a del formulation.

**Saliva Substitute Liquid:** Saliva Substitute (Roxane) – 120 ml squeeze bottle – all are poorly accepted by patients, effect is not long-lasting.

## **Other Contact Information:**

Mol-Stir Moistening Solution – Kingswood Lab 800-968-7772

MouthKote Oral Moisturizer – Parnell Pharmaceuticals 800-457-4276

BreathTech Plaque Fighter Mouth Spray – Omnii Oral Pharmaceuticals 800-225-3756

Biotene OralBalance Mouth Moisturizing Gel – Laclede Professional Products 800-922-5856

Salivart Ssynthetic Saliva, Aqueous Solution – Gebauer Co. 800-321-9348

Biotene Dry Mouth Gum – Laclede Professional Products 800-922-9348

Biotene Dry Mouth Toothpaste – Laclede Professional Products

Moi-stir Oral Swabsticks – Kingsood Lab 800-968-7772

Cevimeline (Evovac) – snowBrand Pharmaceuticals 800-475-6473

Pilocarpine (Salagen) – MGI Pharmaceuticals 800-562-5580

## **Website Resources:**

[www.cdha.org/articles/drymouth.htm](http://www.cdha.org/articles/drymouth.htm)

[www.northwetdentists.com/xerostomia.htm](http://www.northwetdentists.com/xerostomia.htm)

[www.nohic.nider.nig.gov/pubs/drymouth/dmouth.htm](http://www.nohic.nider.nig.gov/pubs/drymouth/dmouth.htm)

[www.orwww.sjogrens.org/pdfs/sjo\\_oralpects.pdf](http://www.orwww.sjogrens.org/pdfs/sjo_oralpects.pdf)

[www.alcancer.org/public.dir/xerostom.html](http://www.alcancer.org/public.dir/xerostom.html)

[www.nider.nih.gov/spectrum/nider2/2textsec5.htm](http://www.nider.nih.gov/spectrum/nider2/2textsec5.htm)

[www.umanitoba.ca/outreach/wisdomtooth/drymouth.htm](http://www.umanitoba.ca/outreach/wisdomtooth/drymouth.htm)

Saliva plays a significant role in oral health by maintaining a neutral oral pH, protecting oral tissue against invasion by microorganisms, remineralizing the dentition, facilitating swallowing & digestion by lubrication & through special enzymes & acting as solvent for the taste stimuli. When salivary secretion is impaired, a number of oral signs & symptoms can develop. Xerostomia, more commonly called “dry mouth,” is a common subjective complaint of medical & dental patients that usually, but not always, is associated with salivary gland hypofunction (objective evidence of reduced saliva output).

The absence of saliva alters the oral environment & increases the risk of developing dental caries & fungal & periodontal diseases. Associated oral discomfort also may lead to dehydration & nutritional deficiency in elderly patients. A history of frequent carious lesions, recurrent yeast infections, bleeding gums & sore mouth in the absence of oral local factors, lack of a saliva pool & saliva upon palpation of major salivary glands & an unusual pattern of carious lesions commonly indicate the need for further diagnostic evaluation.

Significant emphasis should be placed on preventive oral care in the management of patients with these conditions. Management of these conditions may include daily oral hygiene, frequent professional oral evaluation & care, hydration, lubrication, stimulation of the salivary glands, nutritional counseling & avoidance of such irritants as alcohol & tobacco. Medications available by prescription—namely, pilocarpine hydrochloride & cevimeline hydrochloride—also may be included as treatment.

Drugs that cause relatively high incidence of dry mouth: Cardiovascular medications (Alpha & Beta blockers, diuretics, angiotensin-converting enzyme inhibitors, calcium channel blockers, antidepressants, sedatives, central analgesics, anti-parkinson's medications, antiallergy medications, antacids).

### **Adrenergic Agonist Agent:**

- Ephedrine
- Phenylpropanolamine
- Pseudoephedrine

### **Adrenergic Agonist; Bronchodilator**

- Albuterol (Proventil; Ventolin)
- Bitolterol (Tornalate)
- Isoetharine (Bronkameter; Bronkosol)
- Isoproterenol (Isuprel)
- Terbutaline (Brethaire; Brethine)
- Alpha-Adrenergic Receptor Agonist
- Clonidine (Catapres)
- Alpha-Adrenergic Receptor Blocker
- Doxazosin (Cardura)
- Guanabenz (Wytensin)
- Guanadrel Sulfate (Hylorel)
- Guanethidine (Ismelin)
- Guafacine (Tenex)
- Methyldopa (Aldomet)
- Prazosin (Minipress)
- Reserpine (Serpalan)
- Terazosin (Hytrin)

### **Analgesic, Narcotic**

- Levorphanol (Levo-Dromoran)
- Meperidine (Demerol)
- Methadone Hydrochloride (Dolophine)
- Morphine Sulfate
- Oxycodone & Acetaminophen (Percocet; Tylox)
- Oxycodone & Aspirin (Percodan)
- Pentazocine (Talwin)
- Propoxyphene (Darvon)

### **Antiallergic; Inhalation**

- Cromolyn Sodium (Intal)

### **Antianxiety Agent; Benzodiazepine**

- Alprazolam (Xanax)
- Chlordiazepoxide (Librium)
- Clorazepate Depotassium (Tranxene)
- Diazepam (Valium)
- Lorazepam (Ativan)
- Oxazepam (Serax)

## **Antiarrhythmic Agent, Class 1-C**

- Propafenone (Rythmol)

## **Antiarrhythmic Agent, Class 1-A**

- Disopyramide (Norpace)

## **Anticholinergic Agents**

- Atropine Sulfate
- Belladonna & Opium
- Benztropine Mesylate (Cogentin)
- Diphenoxylate & Atropine
- Glycopyrrolate (Robinul)
- Hyoscyamine Sulfate
- Hyoscyamine, Atropine, Scopolamine, Phenobarbital (Donnatal)
- Ipratropium Bromide (Atrovent)
- Methscopolamine Bromide (Pamine)

## **Anticonvulsant**

- Clonazepam (Klonopin)
- Gabapentin (Neurontin)

## **Antidepressant; Tricyclic**

- Amitriptyline Hydrochloride (Elavil)
- Amoxapine (Asendin)
- Clomipramine Hydrochloride (Anafranil)
- Desipramine Hydrochloride (Norpramin, Pertofrane)
- Doxepin Hydrochloride (Sinequan)
- Imipramine (Tofranil)
- Loxapine (Loxitane)
- Maprotiline Hydrochloride (Ludiomil)
- Nortriptyline (Aventyl; Pamelor)
- Protriptyline Hydrochloride (Vivactil)
- Trimipramine (Surmontil)

## **Antidepressant; Selective Serotonin Reuptake Inhibitor (SSRI)**

- Fluvoxamine (Luvox)
- Paroxetine (Paxil)
- Setraline (Zoloft)

## **Antidepressant; Miscellaneous**

- Venlafaxine (Effexor)
- Bupropion (Wellbutrin)
- Nefazodone (Serzone)

## **Antidepressant; Monamine Oxidase Inhibitor**

- Phenelzine (Nardil)

## **Antidote; Benzodiazepine**

- Flumazenil (Romazicon)

## **Antiemetic**

- Dronabinol (Marinol)
- Meclizine (Bonamine)
- Metoclopramide (Reglan)
- Nabilone (Cesamet)
- Ondansetron (Zofran)
- Prochlorperazine (Compazine)
- Promethazine (Phenergan)
- Thiethylperazine (Norzine)

## **Antihistamine**

- Azatadine (Optimine)
- Brompheniramine (Dimetane)
- Chlorpheniramine Maleate
- Clemastine Fumarate (Tavist)
- Cyproheptadine
- Dexchlorpheniramine (Poladex)
- Dimenhydrinate (Dramamine)
- Dighenhydramine (Benadryl)
- Hydroxyzine (Atarax; Vistaril)
- Loratadine (Claritin)

## **Antihistamine/Decongestant Combination**

- Acrivastatin & Pseudoephedrine (Semprex-D)
- Carbinoxamine & Pseudoephedrine (Rondec)

## **Anti-Parkinson's Agents**

- Amantadine (Symmetrel)
- Levodopa (Larodopa)
- Levodopa & Carbidopa (Sinemet)
- Selegiline (Eldepryl)
- Trihexyphenidyl (Artane)

## **Antipsychotic**

- Cozapine (Clozaril)
- Molindone (Moban)
- Risperidone (Risperdal)

## **Antispasmodic**

- Dicyclomine (Bentyl)

## **Antispasmodic Agent, Urinary**

- Flavoxate (Urispas)
- Oxybutynin (Ditropan)

## **Antitussive**

- Guaifenesin & Codeine

## **Biological Response Modulator**

- Interferon Alpha-2a (Roferon-A)
- Interferon Alpha-2b (Intron-A)
- Interferon Alpha-N3 (Alferon N)

## **Central Nervous System Stimulant**

- Amphetamine
- Dextroamphetamine sulfate (Dextrostat)
- Methamphetamine (Desoxyn)

## **Corticosteroid, Inhalant**

- Beclomethasone Dipropionate (Beconase; Vancenase)

## **Ergot Alkaloid**

- Ergotamine (Cafergot)

## **Hypnotic Agent, Benzodiazepine**

- Estazolam (ProSom)
- Flurazepam Hydrochloride (Dalmane)
- Quazepam (Doral)
- Temazepam (Restoril)

## **Retinoic Acid Derivative**

- Isotretinoin (Accutane)

## **Skeletal Muscle Relaxant**

- Cyclobenzaprine (Flexeril)

Other medications are being marketed every day & the list is only a reference to help with categories of drugs that have xerostomia as an adverse reaction. Please refer to your prescribing health care professional to see if a newly prescribed medication possibly causes this problem.

Some of the information in this handout is from Karen A. Baker, R.Ph, M.S., Associate Professor at the University of Iowa Colleges of Dentistry & Pharmacy.