



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 and 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 and this will contribute to a dry mouth.
- Try drinking milk with meals – milk has moisturizing properties and helps some people to swallow their food
- Restrict caffeine intake – caffeine is a MAJOR cause of dry mouth. Use caffeine-free tea, coffee and 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 and change water daily – start the humidifier an hour or two before bedtime and let it run through the night
- Use sugar-free candy, gum and beverages, look for products that contain Xylitol (a sweetener that does not cause cavities) – overuse of acidic candies and foods can cause a sore mouth - chewing gum will stimulate saliva flow
- Use hydrous lanolin on lips frequently during the day and 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 and gum disease

Commercial Saliva Substitutes, Stimulants & Moisturizing Gels:

The products listed below are available without a prescription and 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 and 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 and 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 and under dentures as needed for long-lasting effects.

Liquid: Oral Balance (Laclede) -4.5 oz bottle of dry mouth moisturizing liquid – long-lasting and helps with swallowing – contains xylitol, 5 moisturizers, 18 amino acids and 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 Synthetic 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-Kingswood Lab 800-968-7772
 Cevimeline (Evoxac)-snow Brand Pharmaceuticals 800-475-6473
 Pilocarpine (Salagen)- MGI Pharmaceuticals 800-562-5580

Web site resources:

www.cdha.org/articles/drymouth.htm
www.northwetedentists.com/xerostomia.htm
www.nohic.nider.nig.gov/pubs/drymouth/dmouth.htm
www.orwww.sjogrens.org/pdfs/sjo_oralaspects.pdf
alcancer.org/public.dir/xerostom.html
www.nider.nih.gov/spectrum/nider2/2textsec5.htm
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 and digestion by lubrication and through special enzymes, and acting as solvent for the taste stimuli. When salivary secretion is impaired, a number of oral signs and symptoms can develop. Xerostomia, more commonly called “dry mouth,” is a common subjective complaint of medical and 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 and increases the risk of developing dental caries and fungal and periodontal diseases. Associated oral discomfort also may lead to dehydration and nutritional deficiency in elderly patients. A history of frequent carious lesions, recurrent yeast infections, bleeding gums and sore mouth in the absence of oral local factors, lack of a saliva pool and saliva upon palpation of major salivary glands, and 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 and care, hydration, lubrication, stimulation of the salivary glands, nutritional counseling and avoidance of such irritants as alcohol and tobacco. Medications available by prescription—namely, pilocarpine hydrochloride and cevimeline hydrochloride—also may be included as treatment.

Drugs that cause relatively high incidence of dry mouth: Cardiovascular medications (Alpha and 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 (Bronkometer; 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 and acetaminophen (Percocet; Tylox)
- Oxycodone and 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 and opium
- Benztropine mesylate (Cogentin)
- Diphenoxylate and 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 (Trofranil)
- 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 and pseudoephedrine (Semprex-D)
- Carbinoxamine and pseudoephedrine (Rondec)

Anti-Parkinson's Agents

- Amantadine (Symmetrel)
- Levodopa (Larodopa)
- Levodopa and 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 and 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 and 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 and Pharmacy

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