OH I CAN
GUIDELINES
FOR
ORAL HEALTH PROTOCOLS

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OH I CAN Guidelines Based on Oral Health Signs and Symptoms

Symptoms		Likely Cause	Initial Management	Ongoing Care
Brief Sensitivity of tooth to Hot/Cold/Sweet Stimuli	Disappears on Removal of Stimulus	Reversible Pulpitis	• Avoids foods which provoke pain • Analgesics • Antibiotics not indicated	• ROUTINE Dental Referral • Simple restoration (filling) may suffice
Longer more intense Sensitivity of tooth to Hot/Cold/Sweet Stimuli	Persists on Removal of Stimulus	Irreversible Pulpitis	• Avoids foods which provoke pain • Analgesics • Antibiotics not indicated unless there is obvious swelling • Cover any obvious cavity (temporary filling material, dental wax)	• ROUTINE or URGENT Dental Referral depending on severity of symptoms and clinical exam • Root Canal or Extraction most likely indicated
Tooth not Sensitive to Hot/Cold/Sweet Stimuli		Suggestive of non-vital tooth	• Analgesics • Antibiotics ONLY if swelling is present	• Routine or URGENT Dental Referral based on symptoms and oral examination
Tender to Pressure		Possible early abscess formation	• Antibiotic may be indicated if swelling present. • Oral examination indicated to determine if the cause is dental decay or periodontal disease	• Routine or URGENT Dental Referral based on severity of symptoms • Root Canal therapy or extraction If the cause is related to a tooth or teeth. Periodontal debridement if the cause is of periodontal origin.
Tender/Painful Swelling in Region of Recent Toothache		Dental or periodontal abscess	• Analgesics • Antibiotics indicated • if swelling is causing	• URGENT Dental Referral. If airway is involved **EMERGENT** referral to ED or hospital for IV

			dysphagia/dyspnea, admit to hospital or refer to ED for IV antibiotics	antibiotics • Root Canal therapy or extraction • Monitor closely (watch for cellulitis)
Pain Worsens When Head Proclined		Likely Maxillary Sinusitis	• Antibiotic and nasal sprays generally effective if indicated for bacterial infection	
Pain Persists 2-4 Days After Dental Extraction		Alveolar Osteitis ("dry socket")	• Antibiotics not indicated • Flush socket with sterile saline • Insert sedative dressing if available	• URGENT Dental Referral back to the dentist who performed the extraction • Socket irrigation and sedative dressing
Vertical/Horizontal Superficial Cracks in Enamel	No Pain	Craze Lines	• Stress Reduction • Avoid Chewing Ice/hard candies, etc.	• Continue Regular Dental Care • Possible candidate for a night guard.
Small Chip on Edge of Tooth		Enamel Fractures		• ROUTINE Dental Referral
Broken/Fractured/Chipped Tooth and Yellow/Brown Components	Sensitivity to Air, Cold, Sweets	Enamel and Dentin Fractures	• Rinse with Warm Water • Avoid Extremes of Temperatures • NSAIDS/Tylenol • Temporary dental filling or dental wax to help alleviate symptoms	• ROUTINE Dental Referral
Broken/Fractured/Chipped Tooth and Dark/Red Components	Moderate to Severe Pain	Enamel, Dentin, and Pulp Fractures	• Soft/Liquid Diet if chewing not possible • Avoid Extremes of Temperatures • NSAIDS/Tylenol	URGENT Dental Referral
Persistent, Increasing Pain, usually to Thermal Stimuli and Pressure		Root Fractures	• Soft/Liquid Diet if chewing not possible • Avoid Extremes of Temperatures • NSAIDS/Tylenol	• URGENT Dental Referral • Removing Root Segments

Normal Tooth, Bleeding from Gum Line	Tender to Touch, Loose but Not Displaced	Tooth Concussion or periodontal disease	• Avoid Extremes of Temperatures • Avoid Chewing in the Area • NSAIDS/Tylenol • 0.12% chlorhexidine mouth rinses (e.g. PerioGard)	• EMERGENT Dental Referral if tooth displaced from trauma. • URGENT Dental Referral for periodontal disease
Tooth Knocked Completely Out of Mouth		Tooth Avulsion	• Apply a Cold Compress to Face • Do Not Touch Root of Tooth • Rinse Tooth with Storage Media, Milk, Saline and then place tooth in storage media.	• EMERGENT Dental Referral
Oral Ulcers (Resolving/Recurrent)		Unknown, or herpes	• Topical therapy	• Repeat topical therapy • URGENT Dental Referral depending on severity of symptoms and clinical exam • Biopsy may be indicated
Oral Ulcers (non-healing)	+/- pain	Tobacco use, exacerbated by alcohol; HPV	• Biopsy	• URGENT referral to ENT for definitive care

Adapted from: Kingon A. Solving dental problems in general practice. Aust Fam Physician. 2009; 38(4): 211-216

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GUIDELINES FOR ORAL HEALTH PROTOCOLS

A. Angular cheilitis

1. Overview:
   Angular chelitis may have a number of etiologies (nutritional deficiency, decreased vertical dimension of occlusion, or local habits coupled with an inflammatory response). It is important to assume that these lesions have fungal infiltrates. Angular cheilitis develops at the commissures of lips (corners of the mouth), and the area can crack easily.

2. Symptoms:
   Cracking or fissuring at the corners of the mouth, which may bleed on occasion.

3. Diagnosis:
   Diagnosis is determined by the clinical presentation. Special tests or staining is not required.

4. Treatment:
   Avoid treatment combinations that include steroidal components, which may further suppress the immune system. For instance, Mycolog®II cream and Lotriderm® contain corticosteroids. Ketoconazole (2%) cream, clotrimazole (1%) cream, and nystatin (100,000 units/gram) cream are effective in controlling angular cheilitis. All of these agents should be applied directly to the affected areas 4 times per day for 14 days.

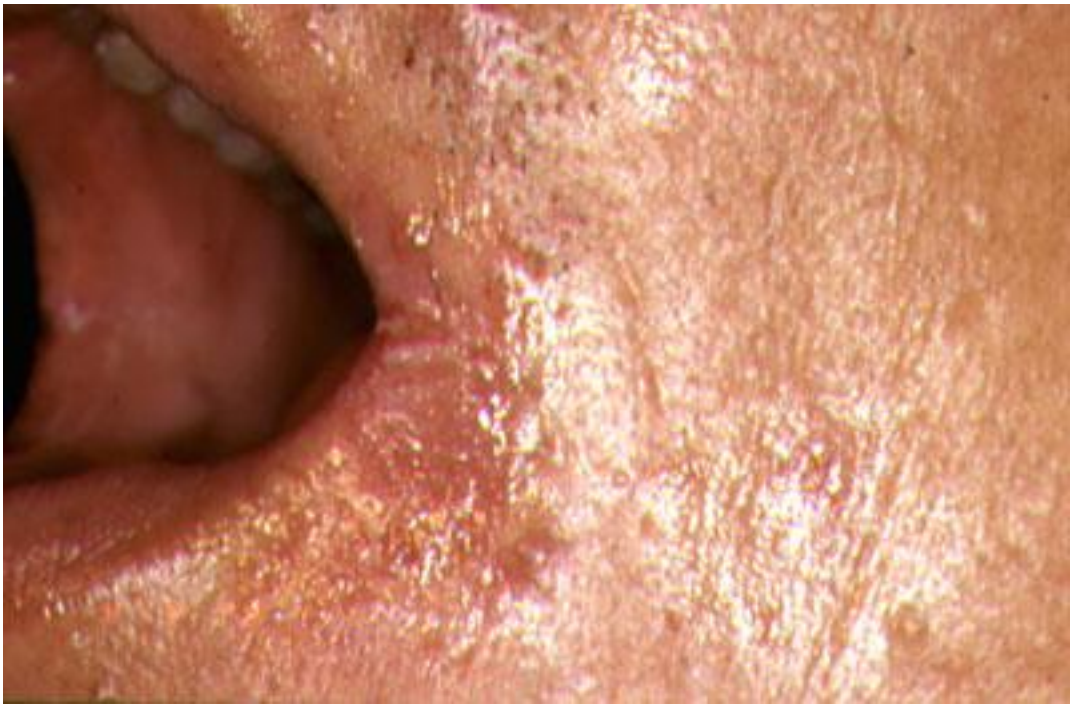

Photo A.1. Angular cheilitis

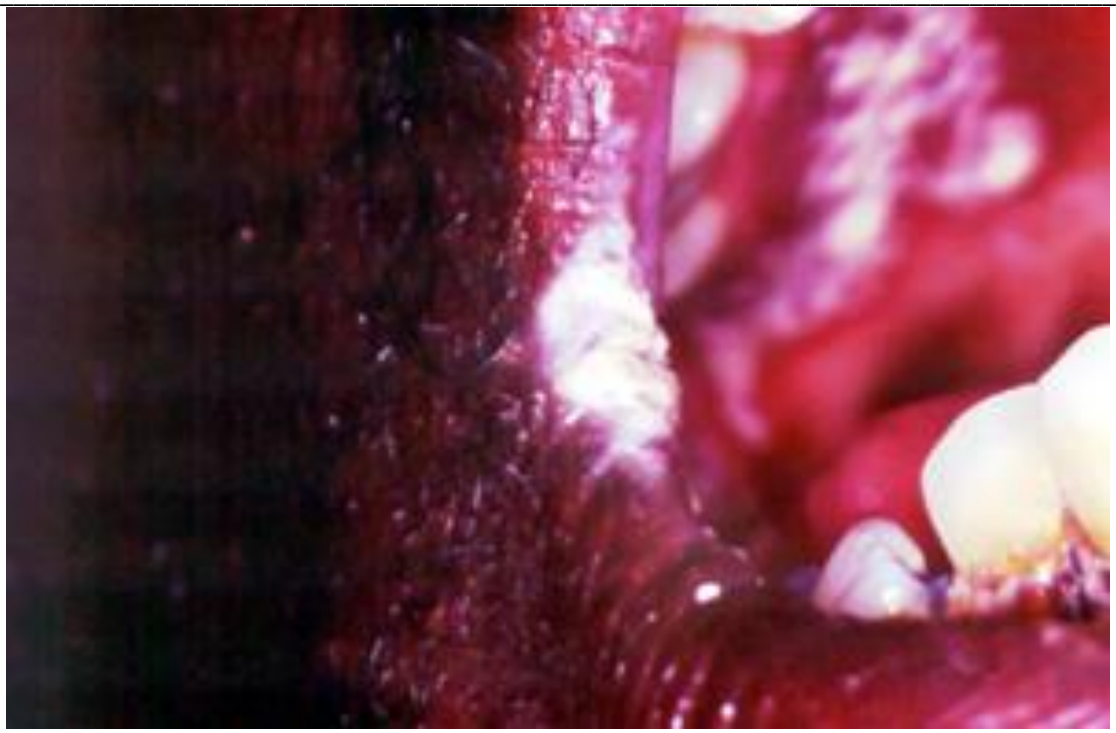

Photo A.2. Severe angular cheilitis

Photo A.3. Angular cheilitis

B. Erythematous candidiasis

1. Overview:
Erythematous candidiasis is one of the three common presentations of oral fungal infections, the others being angular cheilitis and pseudomembranous candidiasis. Erythematous candidiasis presents as a red, flat subtle lesion that can appear anywhere inside the oral cavity. The most common presentations involve the dorsal surface of the tongue and/or the hard and soft palates.

2. Symptoms:
Patients often complain of a burning sensation, notably when eating salty or spicy foods and acidic beverages.

3. Diagnosis:
Diagnosis of erythematous candidiasis is most frequently based on the clinical appearance.

A KOH (potassium hydroxide) preparation can be used to find out whether a fungal infection is present. A sample is taken by lightly scraping the affected area. The sample is placed on a slide with KOH solution. This solution slowly dissolves the oral mucosal cells but not the fungus cells. The fungus cells can then be seen with a microscope. Color stains may be used so that the fungus is easier to see.

4. Treatment:
As erythematous candidiasis is usually limited to the anterior portion of the oral cavity (dorsal surface of the tongue and/or the hard and soft palates), topical antifungal medications are the treatment of choice.

Option #1

Oral troches (lozenges)	Rx: **Clotrimazole 10 mg** Disp. 70 troches Sig. Dissolve 1 troche in mouth 5x/day X 14 days

Option #2

Antifungal rinses	Rx: **Nystatin Oral Suspension 5000,000 U** Disp. 280 ml Sig. Swish 5 ml (1 teaspoon) in mouth 2 minutes, QID X 14 days

Of note, Nystatin Oral Suspension should not be swallowed. Also, this suspension has a very high sugar content that could exacerbate untreated dental decay. For patients who have **acrylic partial or complete dentures**, it is very important to treat the appliance as well. This can be done by either soaking the appliance in a one to one mixture of water and 0.12% chlorhexidine gluconate (e.g. PerioGard) solution overnight. Other options

include placing any of the topical creams to the inside of the appliance or soaking the removable prosthesis in a weak solution of bleach and water for a few minutes daily.

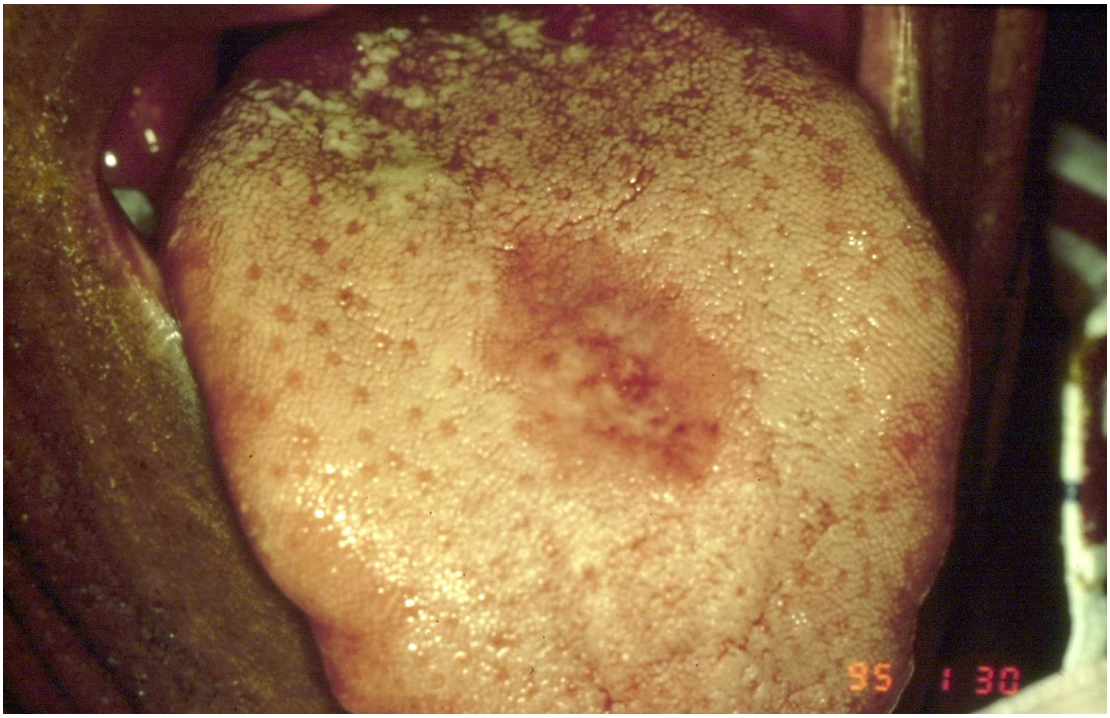

Photo B.1. Erythematous candidiasis

Photo B.2. Erythematous candidiasis

C. Oral Aphthous Ulcers

1. Overview:
   Aphthous ulcers usually appear on non-keratinized tissues such as the buccal mucosa and the oropharynx. They appear as a white or gray pseudomembrane surrounded by an erythematous halo and can be severe in people with advanced HIV disease. Aphthous ulcers tend to be recurrent. There is no known etiology, but aphthous outbreaks have often been associated with stress, trauma, and spicy food. Lesions may be minor or major, single or multiple. Major lesions can persist for several weeks but minor lesions usually heal within 7-10 days. Lesions can be very painful.

2. Symptoms:
   Painful oral ulcers that tend to be recurrent. Minor lesions tend to heal within 7 to 10 days.

3. Diagnosis:
   Diagnosis is based on clinical appearance.

4. Treatment:
   For immunocompetent patients, these lesions tend to heal without an intervention. For persistent minor aphthous ulcers use the following: Rx. Dexamethasone elixir 0.5 mg/ 5 mL dispense 100 mL. Rinse with 5 mL for one minute then spit out the excess. Do not eat or drink for at least 30 minutes after rinsing. Repeat 2 – 3 times per day until symptoms are gone.

   For major aphthous ulcers, systemic prednisone may be required.

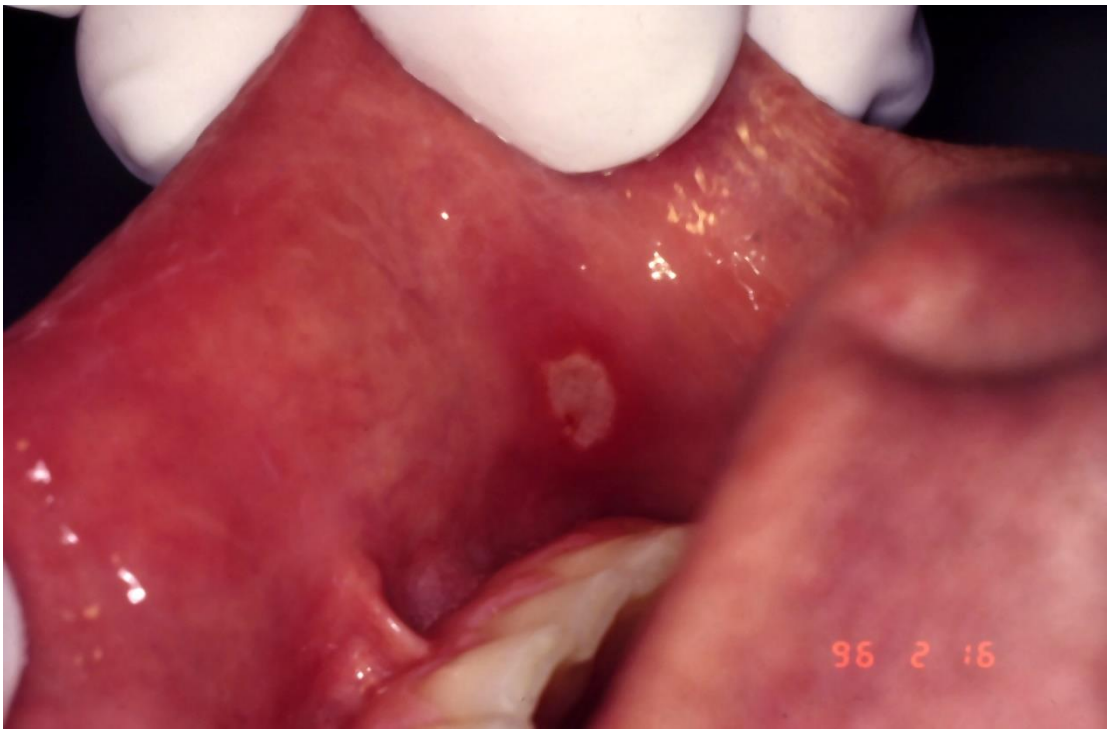

Photo C.1: Aphthous ulcer

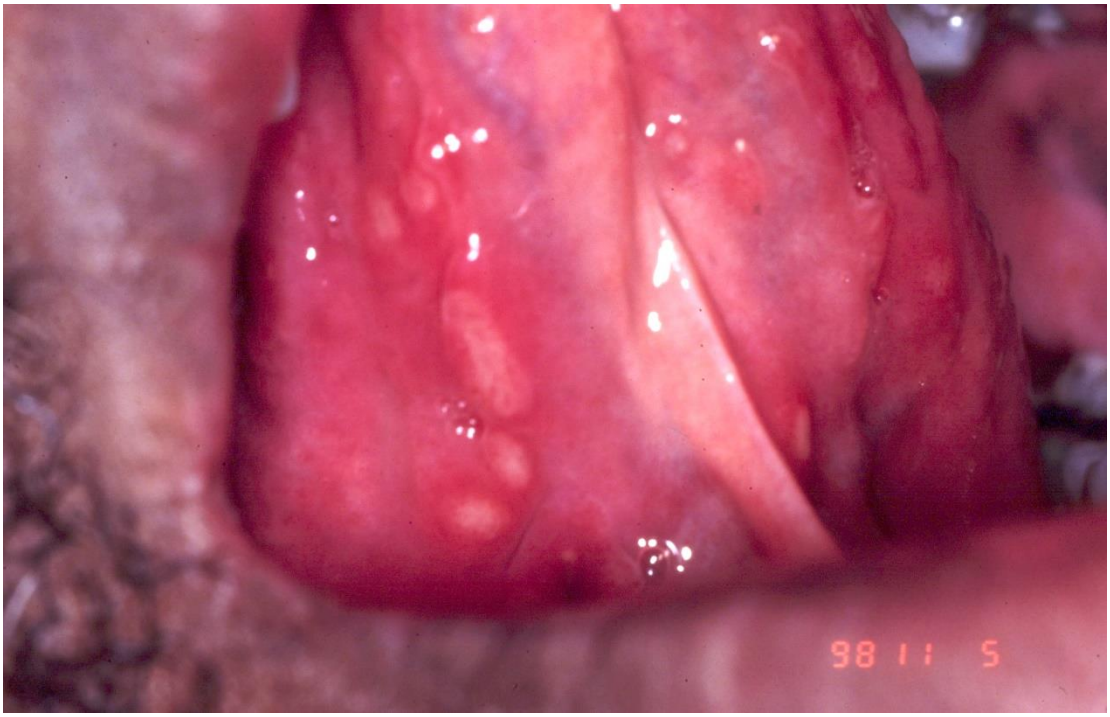

Photo C.2: Minor aphthous ulcer

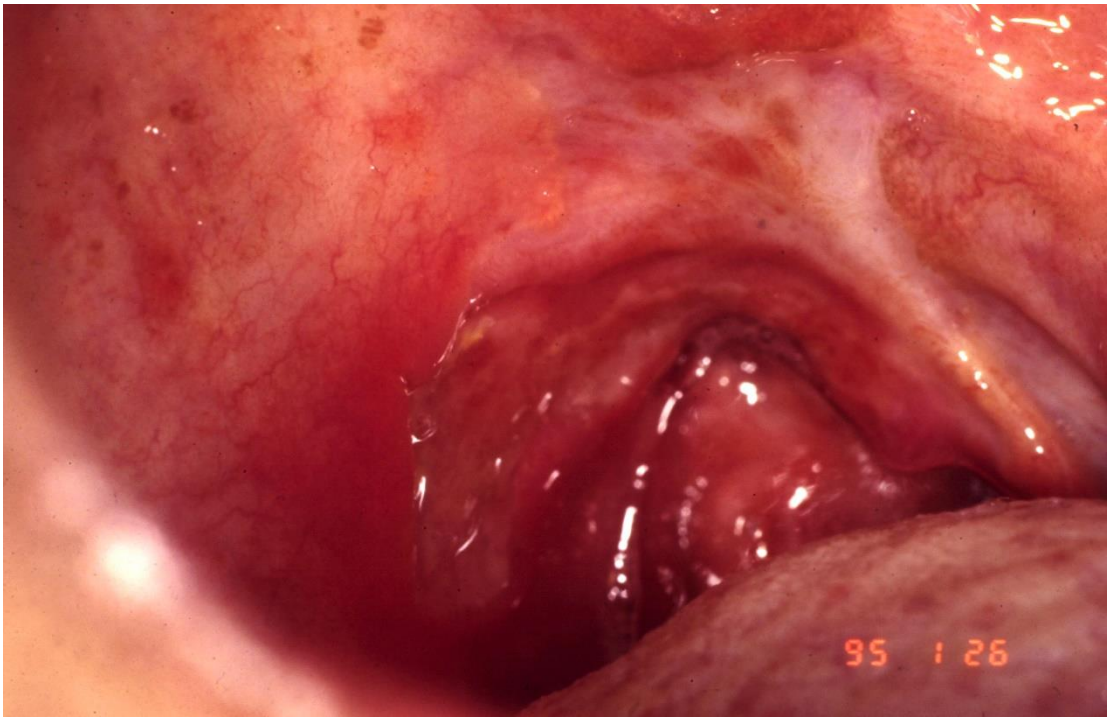

Photo C.3. Major aphthous ulcer

D. Oral Herpetic Ulcers

1. Overview:
   Classically, herpetic lesions are shallow ulcers found on keratinized tissue (e.g. hard palate) or on the vermillion border of the lip. These lesions tend to be recurrent and are caused by HSV-1. The lip lesions are commonly called cold sores.

2. Symptoms:
   - Tingling
   - Itching
   - Burning

3. Diagnosis:
   Diagnosis is based on clinical appearance. A lesion can be swabbed and sent to a lab to detect HSV. However, this common lesion is usually diagnosed on appearance.
   Therapy should be initiated at the earliest symptom of a cold sore.

4. Treatment:
   Topical therapy is for lip lesions only.

Topical therapy	Rx: **Acyclovir 5%** Apply to affected area every 3-4 hours for 4 days

Topical therapy	Rx: **Penciclovir 1%** Apply to affected area every 2-3 hours for 4 days

For recurrent HSV-1 the following systemic therapy is recommended.

Systemic therapy	Rx: **Acyclovir 400 mg** Disp. 30 tabs Sig. Take 1 tab TID X 10 days

Systemic therapy	Rx: **Valacyclovir 500 mg** Disp. 4 tabs Sig. Take two tabs PO 12 hours apart

Systemic therapy	Rx: **Famciclovir 500 mg** Disp. 14 tabs Sig. Take one-tab PO twice a day for seven days

Photo D.1. Herpes Labialis

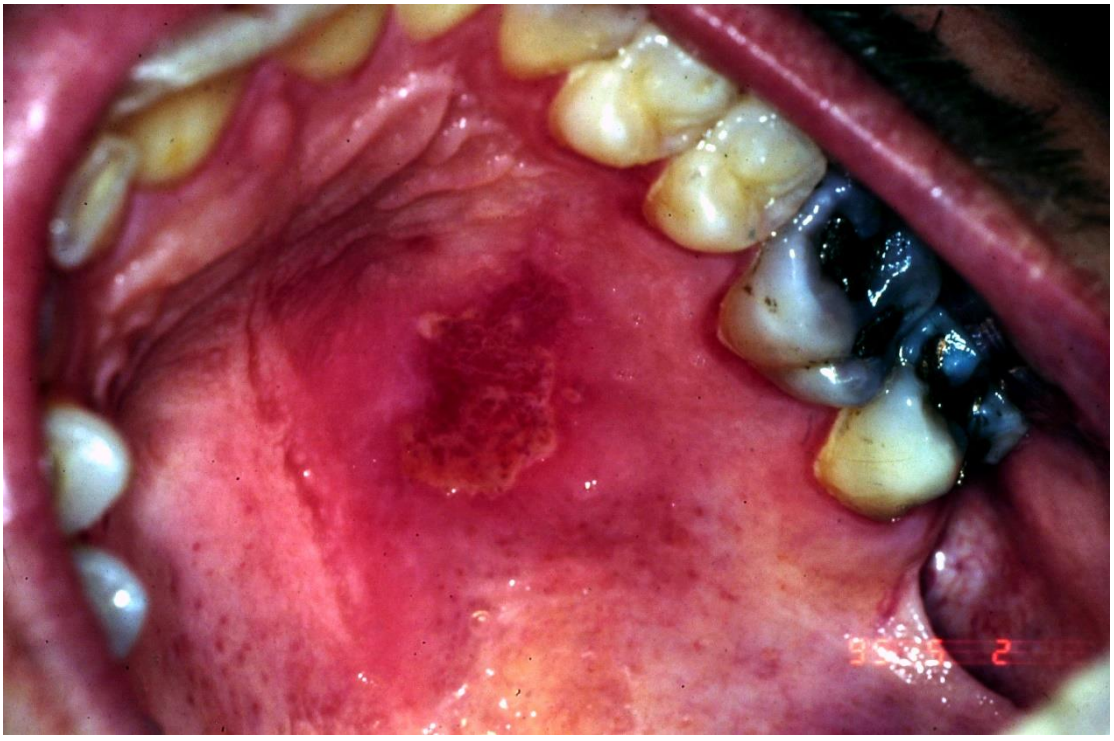

Photo D.2. Oral Herpetic Ulcer

Photo D.3. Oral Herpetic Ulcer

E. Pseudomembranous candidiasis (thrush)

1. Overview:
   Pseudomembranous candidiasis is a very common intraoral disease. Pseudomembranous candidiasis typically presents as a white, cottage cheese-like, patchy lesion. It can be wiped off, leaving erythematous (red) and potentially bleeding tissue underneath. It can appear anywhere within the oropharynx. Thrush, or pseudomembranous candidiasis, is usually caused by *Candida albicans,* but there has been an increased incidence of candidiasis due to non-ablicans species, which can be more difficult to treat.

2. Symptoms:
   Patients may complain of pain, altered taste sensations, or halitosis. For very mild cases patients may not be aware of this infection.

3. Diagnosis:
   Diagnosis of pseudomembranous candidiasis is most frequently based on the clinical appearance. In many instances it is very easy to diagnose by seeing if a portion of the lesion will wipe away. Simply take the wooden tip of a cotton tip applicator and gently try to brush away a portion of the affected area.

   A KOH (potassium hydroxide) preparation can be used to find out whether a fungal infection is present. A sample is taken by lightly scraping the affected area. The sample is placed on a slide with KOH solution. This solution slowly dissolves the oral mucosal cells but not the fungus cells. The fungus cells can then be seen with a microscope. Color stains may be used so that the fungus is easier to see.

4. Treatment:

Treatment of pseudomembranous candidiasis is based on the extent of the infection. For mild to moderate cases (Photo E.1) topical antifungal medications are the treatment of choice.

Topical option #1

Oral troches (lozenges)	Rx: **Clotrimazole 10 mg** Disp. 70 troches Sig. Dissolve 1 troche in mouth 5x/day X 14 days

Topical option #2

Antifungal rinses	Rx: **Nystatin Oral Suspension 5000,000 U** Disp. 280 ml Sig. Swish 5 ml (1 teaspoon) in mouth 2 minutes, QID X 14 days

Of note, nystatin oral suspension should not be swallowed. Also, this suspension has a very high sugar content that could exacerbate untreated dental decay.

For moderate to severe presentations (Photos E.2 and E.3) a systemic agent is needed.

Systemic therapy	Rx: **Fluconazole 100 mg** Disp. 15 Sig. Take 2 tabs for the initial dose, then 1 tab/day X 14 days

For esophageal candidiasis (slide #8) a higher dose of fluconazole is indicated.

Systemic therapy	Rx: **Fluconazole 200 mg** Disp. 22 Sig. Take 2 tabs for the initial dose, then 1 tab/day X 21 days

For patients who have **acrylic partial or complete dentures**, it is very important to treat the appliance as well. This can be done by either soaking the appliance in a one to one mixture of water and 0.12% chlorhexidine gluconate (e.g. PerioGard) solution overnight. Other options include placing any of the topical creams to the inside of the appliance or soaking the removable prosthesis in a weak solution of bleach and water for a few minutes daily.

Photo E.1. Mild pseudomembranous candidiasis

Photo E.2. Moderate to severe pseudomembranous candidiasis

Photo E.3. Moderate to severe pseudomembranous candidiasis

F. Squamous Cell Carcinoma

1. Overview:
   The most common type of oral cancer in the general population is squamous cell carcinoma (SCC), which accounts for 90% of all oral cancers. Squamous cell carcinoma typically presents in the posterior oropharynx and base/lateral border of the tongue.

   The landscape of oral malignancy is changing in the general population. Risk factors for squamous cell carcinoma have traditionally been identified as age, gender, and tobacco and alcohol use. The demographics of oral cancer and especially squamous cell carcinoma increasingly include younger people who do not have the traditional risk factors of tobacco and alcohol use. The risk factor most commonly associated with this group is infection with HPV, which is also associated with cervical cancers.

2. Symptoms:
   Non-healing ulcers that may or may not be painful.

3. Diagnosis:
   A biopsy is required to diagnose squamous cell carcinoma.

4. Treatment:
   Treatment is dependent on the location and size of the lesion. Treatment can include surgical excision plus radiation or chemotherapy if indicated .

Photo F.1. Squamous Cell Carcinoma

Photo F.2. Squamous Cell Carcinoma

G. Xerostomia (dry mouth)

1. Overview:

   Xerostomia or “dry mouth” is one of the most significant oral complications associated with HIV infection. There is evidence to suggest that xerostomia seen in PLWH is a result not only of HIV but is also a side effect of numerous medications including

antiretrovirals, antidepressants, and narcotics. The toll on oral health can be devastating, leading to root caries, oral infection, periodontal disease, and loss of teeth.

- Saliva is a critical component of a healthy oral environment.
- It protects against periodontal disease with natural antibacterial activity and protects teeth against dental caries by helping to maintain a normal pH.
- Adequate saliva flow allows for proper food processing prior to swallowing and digestion.
- Lubrication from saliva supports comfortable and proper speech.
- Salivary flow is essential for the proper retention of oral appliances such as dentures and removable partial dentures.

Xerostomia results when salivary glands do not function at optimal levels to produce the required amount of saliva for proper oral health. Lack of saliva is consistent with a lower pH in the oral cavity and an increased likelihood of fungal infections (oral candidiasis). Many medications are commonly linked to dry mouth. Most notable are antihypertensive and antidepressant medications. Antihistamines, decongestants, and some pain medications can also trigger xerostomia. Illicit drug use, most notably methamphetamine and cocaine, can also cause xerostomia.

2. Symptoms:
    - Dryness in your mouth or throat
    - Saliva that seems thick and stringy
    - Bad breath
    - Difficulty chewing, speaking and swallowing
    - A changed sense of taste
    - Problems wearing dentures
    - More frequent tooth decay
    - Gum irritation and gum disease

3. Diagnosis:
    In most cases, patients will inform dental care providers that they have a dry mouth. A thorough medical history and intraoral exam should follow to diagnose xerostomia and to determine the cause. Palpation and milking of the major glands to assess salivary flow should be a regular part of comprehensive and recall exams. The color, texture, and moisture level of the soft tissue should be noted. Particular attention should be paid to assess for the presence of oral candidiasis. An examination of dentition may indicate an increase in the caries rate, especially along the gingival margin and root surfaces. Many patients demonstrate a somewhat chalky appearance and texture along the gingival margin, which may indicate early enamel/cementum breakdown. The hygienist can provide crucial diagnostic information, as this softer texture is very evident when scaling. The tongue and mucous membranes may appear dry, sticky, non-glistening, and pebbled.

4. Treatment:
    The most effective methods to mitigate the dental effects of xerostomia are topical or local treatments. Instructing a patient to suck on sugar-free hard candies, dissolve ice

chips, or chew sugar-free gum may help stimulate salivary flow. Artificial saliva products tend to be water-based and include cellulose derivatives, which increase contact time with the oral mucosa. Other over-the-counter products contain an antimicrobial enzyme that helps increase intraoral moisture or contain citric acid and act as stimulants to saliva flow). Chair-side instruction, coupled with written information, will help the patient use these products successfully.

Oral pilocarpine can be prescribed to help increase salivary gland saliva production. This should be done with caution, however, as the side effects can be significant. Pilocarpine stimulates the parasympathetic system and activates the muscarinic cholinergic receptors, which activate exocrine glands. Patients may experience sweating, diarrhea, chills, rhinitis, headaches, visual disturbances, respiratory distress, vomiting, and various cardiovascular complications such as pulmonary edema, bradycardia or tachycardia, and hypertension or hypotension. Efforts are currently underway to develop safer, more effective anti-xerostomia medications, as this problem is common and can severely compromise an individual's quality of life.

Because PLWH with xerostomia have high rates of dental caries, an aggressive fluoride treatment program should be implemented. Fluoride varnish can be applied after every prophy appointment as well as at the completion of the restorative phase of treatment. The use of prescription fluoride dentifrices, such as the Prevident 5000 product line are an important tool that can prevent recurrent or new decay.