Symptom Management Guidelines: ORAL MUCOSITIS

NCI CTCAE GRADE AND MANAGEMENT | RESOURCES | CONTRIBUTING FACTORS | APPENDIX

Definition

Oral Mucositis (Stomatitis): An acute inflammation and/or ulceration of the oral or oropharyngeal mucosal membranes. It can cause pain/discomfort, interfere with eating, swallowing and speech and may lead to infection.

Focused Health Assessment

PHYSICAL ASSESSMENT

Oral Assessment

- Equipment required to facilitate assessment:
  - Adequate light source
  - Tongue depressor, non-sterile gloves, clean gauze
- Assess lips, tongue, oral mucosa for:
  - Bleeding
  - Color – note degree of pallor or erythema, presence of white patches, or discolored lesions / ulcers
  - Moisture
  - Accumulation of debris or coating, discoloration of teeth, bad odor
  - Integrity – note any presence of cracks, fissures, ulcers, blisters
  - Perception - swallowing, changes in voice tone, taste changes

Hydration Status

- Assess mucous membranes, skin turgor, capillary refill, amount and character of urine

Weight

- Take current weight and compare to pre-treatment or last recorded weight

Vital Signs

- Include as clinically indicated

Functional Status

- Activity level/ECOG or PPS

SYMPTOM ASSESSMENT

***Consider contributing factors**

Normal

- Refer to pretreatment nursing assessment or dental evaluation

Onset

- When did symptoms begin?

Provoking / Palliating

- What makes it worse? Better?

Quality (in last 24 hours)

- Do you have a dry mouth (xerostomia)? (e.g. decrease in amount or consistency of saliva)
- Do you have any redness, blisters, ulcers, cracks, white patchy areas? If so, are they isolated, generalized, clustered, patchy?

Region / Radiation

- Where are your symptoms? (e.g. on lips, tongue, mouth)

Severity / Other Symptoms

- How bothersome is this symptom to you? (0-10 scale, with 0 not at all – 10 being worst imaginable)
- Have you been experiencing any other symptoms:
  - Fever – possible infection
  - Difficulty breathing – possible respiratory distress, airway obstruction
  - Prolonged or spontaneous bleeding from oral mucosa? Location? – possible thrombocytopenia
  - Dehydration - dry mouth, excessive thirst, weakness, dizziness, dark urine
  - Oropharyngeal pain

Treatment

- Have you tried any oral rinses? If so, what type? Effective?
- Using any pain medications? If so, what type (e.g. topical, systemic)? Effective?
- Any other medications or treatments?

Understanding / Impact on You

- Functional Alterations
  - Ability to eat or drink - Weight loss?
  - Taste changes (dysgeusia)
  - Difficulty with speech
  - Ability to wear dentures
  - Interfering with other normal daily activity (ADLs)

Value

- What is your comfort goal or acceptable level for this symptom (0 – 10 scale)?

ORAL MUCOSITIS GRADING SCALE **NCI** Common Terminology Criteria for Adverse Events (CTCAE) **(Version 5.0)**				
GRADE 1 (Mild)	**GRADE 2 (Moderate)**	**GRADE 3 (Severe)**	**GRADE 4 (Life - threatening)**	**GRADE 5**
Asymptomatic or mild symptoms; intervention not indicated	Moderate pain or ulcer that does not interfere with oral intake; modified diet indicated	Severe pain; interfering with oral intake	Life-threatening consequences; urgent intervention indicated	Death

***Step-Up Approach to Symptom Management:**
Interventions Should Be Based On Current Grade Level and Include Lower Level Grade Interventions As Appropriate

Grade 1

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GENERAL RECOMMENDATIONS FOR prevention, support, teaching & follow-up care as required	
Patient Care and Assessment- Including Dental Care	• New patient baseline assessment • Nurses to screen for oral complications. Once detected, assess at each patient visit • Provide verbal and written information on maintaining oral hygiene at onset of treatment • Maintaining oral health throughout the treatment phase is necessary to: - help ensure adequate hydration and nutrition - reduce the incidence, severity and duration of oral mucositis - prevent or minimize the effects of oral complications • A dental exam and any interventions should be performed by a dentist (or oral oncology specialist) as early as possible before starting radiation or chemotherapy • Smoking cessation resources
Oral Hygiene	**Flossing:** • Floss at least once daily • Do not floss if: – Causes pain or bleeding gums which does not stop after 2 minutes – Platelet count below 50, 000 mm^3 or unless otherwise advised by physician – Not a routine practice prior to treatment, do not initiate flossing unless recommended by a dentist **NOTE:** Patients with certain head and neck cancers may not be able to floss **Brushing:** • Use small, extra soft nylon bristled manual tooth brush – To soften bristles, rinse toothbrush under warm water for 30 seconds • Use non-abrasive, fluoride toothpaste with a neutral taste- flavoring agents may irritate gums • Brush two to four times daily – Brush all tooth surfaces using a short circular motion or horizontal strokes – Brush tongue back to front • Brushing should be done within 30 minutes of eating and for at least 2 minutes • Rinse toothbrush well with hot water after each use; allow to air dry • Replace toothbrush when bristles are no longer standing up straight **Oral Rinses:** • Oral rinses help keep mouth moist and clean by removing debris • Frequency and Use: – After brushing, rinse mouth a minimum of four times daily – Use 1 tablespoon (15 ml) of oral rinse, swish in oral cavity for 30 seconds, then spit out

	– Prepare mouth rinse solution daily to avoid risk of contamination • Recommended Bland Oral Rinses**:** – **Recipe #1**: Normal saline (NS) - ½ teaspoon (2.5 ml) of salt in 8 oz (240 ml) of water – **Recipe #2**: NS/sodium bicarbonate mixture – ¼ teaspoon (1.25 ml) of salt and ¼ teaspoon (1.25 ml) baking soda in 8 oz (240 ml) of water – **Recipe #3**: Sodium bicarbonate – ¼ to ½ teaspoon (1.25-2.5 ml) baking soda in 8 oz (240 ml) of water – Multi-agent rinses – " Magic Mouthwash" (may include a topical analgesic, a steroid, an antifungal agent, an antibacterial agent and/ or a mucosal coating agent) may be prescribed to help palliate pain; however, limited evidence to suggest superior over bland rinses • Not Recommended: – commercial mouthwashes which contain alcohol – chlorhexidine – povidone iodine – hydrogen peroxide – sucralfate – club soda – lemon glycerin swabs **Lip Care:** • Use water-soluble, lanolin or oil-based lubricants to protect the lips and keep moist • Apply after oral care, at bedtime or as often as required • Water based lubricants may be used during oxygen therapy and can be applied inside the mouth **NOTE**: Oil based lubricants (e.g. petroleum jelly) generally not recommended due to increased risk of aspiration and occlusive nature may increase growth of pathogens. **Do not** use inside mouth or if patient on oxygen therapy. **Dentures:** • Remove dentures, plates, and/or prostheses before oral hygiene performed • Brush and rinse dentures after every meal and at bedtime • Soak dentures in oral rinse solution, rinse before placing in mouth • Do not wear tight or loose fitting dentures • Allow long periods without wearing dentures, at least 8 hours daily (e.g. overnight) • If mouth sensitive, wear only during mealtime
Radiation Therapy	**Benzydamine Hydrochloride** 0.15% (Tantum®) is an anti- inflammatory mouth rinse that is recommended for use to prevent and/or relieve the pain and inflammation associated with oral mucositis in patients who are receiving moderate doses of radiation therapy for head and neck cancer. **Amifostine** is a cytoprotectant agent that may help to reduce the incidence and severity of chronic or acute xerostomia in patients who are receiving radiation therapy for head and neck cancer. **Not Recommended:** • Chlorhexidine • Sucralfate • antimicrobial lozenges
Head & Neck Cancers	• Brushing may not be appropriate in the area of tumor involvement • Patients should be assessed for the use of daily Fluoride tray • Consult with a dentist
Cryotherapy	• May decrease the incidence and severity of oral mucositis • Patients should be instructed to hold ice chips in mouth five minutes prior, during, and for 30 minutes after the bolus infusion of fluorouracil (5FU) **NOT** used for: • Infusional fluorouracil • Regimens which include **Oxaliplatin** due to potential exacerbation of cold-induced pharyngolaryngeal dysthesias
Hematopoietic Stem Cell Transplantation (HSCT)	**Recommended for prevention/reduced severity of Oral Mucositis:** • Palifermin (keratinocyte growth factor-1) for patients with hematological malignancies receiving high dose chemotherapy with or without radiation therapy followed by HSCT • Oral cryotherapy to prevent oral mucositis in patients receiving high dose melphalan **Not Recommended:**

	• Pentoxifylline/Granulocyte-Macrophage Colony Stimulating Factor (GM- CSF) mouthwashes
Dietary Management	**Promote:** • Daily fluid intake of 8-12 cups (2-3 litres), unless contraindicated, to help keep oral mucosa moist (e.g. water, sugar-free popsicles, non-acidic juices, ice cubes, sports drinks, broth) • Well-balanced diet that is high in protein, vitamins B and C • The use of soft, moist, bland foods as symptoms develop – Add sauces, gravy, salad dressings, butter/margarine, broth or another liquid to help moisten and thin foods **Avoid:** • Dry or coarse foods (e.g. toast, crackers, chips) • Spicy or hot temperature foods • Highly acidic fluids and foods (e.g. lemon glycerin swabs, vitamin C lozenges) • Fluid or foods high in sugar (e.g. pop, some fruit juices) • Caffeine, alcohol, tobacco
Patient Education and Follow-Up	• Prior to the commencement of cancer therapy, review oral care and hygiene recommendations with patient/ family • Demonstrate/assess understanding of how to perform daily oral assessment at home • Provide verbal and written information on maintaining oral hygiene at onset of treatment • Provide contact information and reinforce with patient/ family when to seek immediate medical attention if the following emergent conditions develop; - Temperature greater than or equal to 38° C, presence of white patches, redness, foul odour – possible infection - Difficulty breathing– respiratory distress - Bleeding lasting longer than 2 minutes– possible thrombocytopenia - Unable to eat or drink fluids for more than 24 hours– risk for dehydration - Difficulty swallowing– reflective of severity of symptoms - Uncontrolled pain- reflective of deteriorating patient status and severity of symptoms • Instruct patient/family to call back if mucositis worsening, not improving or other complications develop

GRADE 2 – GRADE 3
OR
Not able to tolerate adequate daily fluid intake and/or presence of white patches in oral mucosa

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URGENT:
Requires medical attention within 24 hours

Patient Care and Assessment	Collaborate with physician if patient: • On active chemotherapy treatment and concern re: treatment delay or reduction required. ***See Chemotherapy Protocols for specific instructions*** • Requires new or change in prescription • Requires further evaluation and assessment in an ambulatory setting • Lab and diagnostic testing that may be needed: - Culture of oral mucosa - Complete blood count, electrolyte profile, blood cultures
Oral Hygiene	**Flossing:** • Discontinue flossing if: - Causes pain - Bleeding gums which do not stop after 2 minutes - Low platelet count (below 50, 000 mm^3) **Brushing:** • Brushing more gently with toothbrush if: - brushing causes discomfort - some bleeding occurs but stops within 2 minutes • **Do not** use a toothbrush if:

	- Brushing is too painful even with pain medication - Bleeding in oral mucosa does not stop after 2 minutes • If **unable to brush**, clean teeth with clean, moist gauze or foam swab accompanied with vigorous rinsing using recommended oral rinse solution • If there has been an oral infection, use a new toothbrush after infection has resolved **Oral rinses:** • **Increase use** of mouth rinses to: – Every 1-2 hours while awake – Every 4 hours overnight (if awake) – Increase frequency as needed for symptom severity increases **Lip care:** • Continue to apply water based lubricant to protect and moisten lips **Dentures:** • Keep dentures out of mouth as much as possible until symptoms resolve
Dietary Management	• Change food texture, consistency, and temperature according to individual tolerance (e.g. puree diet) • If only liquids are tolerated, choose high calorie, high protein supplement fluids • May require oral supplementation or IV hydration if unable to maintain adequate fluid intake
Management of Oral Complications – *See Appendix A*	**Oral pain:** • For pain from moderate to severe oral mucositis, systemic analgesics are indicated • A topical anesthetic or analgesic may be prescribed in addition to systemic analgesia **Local infection:** • Review recent lab reports, culture any suspect areas, check temperature • Review prescribed medications with patient **Minor bleeding with trauma (stops after 2 minutes):** • Assess complete blood count, particularly platelet function, and hemoglobin • Rinse mouth with ice water and apply pressure to control bleeding- suggest using frozen tea bag/wet gauze **Dry mouth (xerostomia):** • Use sugarless gum or candy to help stimulate saliva • Keep bottle of water present at all times, encourage frequent sips

GRADE 4

OR

Presence of the following: Temperature greater than or equal to 38ºC, uncontrolled pain, blisters or cracks in oral mucosa

EMERGENT:

Requires IMMEDIATE medical attention

Patient Assessment and Care	• Admission to hospital, notify physician of assessment, facilitate arrangements as necessary • If on active treatment, patient may require chemotherapy treatment dosage reduction, delay or discontinuation. ***See Chemotherapy Protocols for specific instructions*** • Prophylactic intubation may be required if patient at risk for aspiration or is in severe respiratory distress • Nursing Support: – Frequent oral assessments by nurse – three times daily and as clinically indicated – Monitor vital signs as clinically indicated – Accurate monitoring of intake and output, include daily weight – Pain and symptom assessment and management as appropriate
Oral Hygiene	• Frequent mouth care using oral rinse and foam swab every 1-2 hours (or as tolerated) • Apply water based lubricant to lips every 1-2 hours • No brushing, flossing or dentures until symptoms resolve

Dietary Management	• NPO as needed • IV hydration, enteral or parenteral nutrition (TPN) as prescribed until patient stable and symptoms begin to resolve
Management of Oral Complications – *See Appendix A*	**Oral pain:** • Systemic analgesics at regular intervals around the clock • For severe pain, patient controlled analgesia (PCA) with morphine or other strong opioid may be indicated **Infection:** • Culture any suspect areas • Review lab values including complete blood count, electrolyte profile, blood cultures • Administer topical and/or IV anti-infective medications as prescribed (e.g. antibiotics, antifungals, antiviral agents) • Assess temperature every 4 hours and as clinically indicated **Persistent or spontaneous bleeding:** • Assess complete blood count, particularly platelets and hemoglobin • Rinse mouth with ice water and apply pressure (e.g. with frozen tea bag or wet gauze) to control bleeding. Do not remove any clots • If persistent bleeding, topical thrombin, aminocaproic acid, and/or platelet transfusion may be ordered

RESOURCES & REFERRALS

Possible Referrals	• Oncology Nutrition Services • Home Health Nursing • Physician, Dentist, Oral Oncology Specialist • Pain and Symptom Management/Palliative Care (PSMPC) • Patient Support Centre • Telephone Care for follow–up
Healthcare Professional Guidelines	• BC Cancer Oral/Dental Care cancer management guidelines: • http://www.bccancer.bc.ca/health-professionals/clinical-resources/cancer-management-manual/head-neck/oral-dental-care • Cancer Care Ontario Oral Care Guidelines https://www.cancercareontario.ca/en/symptom-management/3156 • Multinational Association of Supportive Care in Cancer Mucositis Guidelines https://www.mascc.org/mucositis-guidelines • National Cancer Institute Oral Complications of Chemotherapy and Head/Neck Radiation https://www.cancer.gov/about-cancer/treatment/side-effects/mouth-throat/oral-complications-hp-pdq
Patient Education	Nutrition Handouts: http://www.bccancer.bc.ca/health-professionals/clinical-resources/nutrition • Chewing and Swallowing: - Easy to Chew Recipes - Blenderized Foods - Food Ideas to Try With a Sore Mouth - Coping with Dry Mouth • Decreased Appetite: - Food Ideas to Help With Poor Appetite - Alternatives to Nutritional Supplements - Flavoring Suggestions for Supplements - High Energy High Protein Menu and Recipes - High Calorie High Protein Smoothie - Healthy Eating Using High Energy High Protein Foods • Taste Changes: - Coping with Taste Changes - Food Ideas to Cope with Taste and Smell Changes • Nutrition Guide to Tube Feeding at Home http://www.bccancer.bc.ca/nutrition-site/Documents/Patient%20Education/Tube-feeding-at-home.pdf • Resources about managing anxiety, progressive muscle relaxation, positive thinking, etc. In Patient Handouts section: http://www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support/managing-stress
Bibliography List	• http://www.bccancer.bc.ca/health-professionals/clinical-resources/nursing/symptom-management

Contributing Factors	
Cancer Related	Cancers of the head and neck
Cancer Treatment Related	**Radiation Therapy:** • Radiation to head and neck, or salivary glands • Total body irradiation • Severity of mucositis related to type of radiation, dose per day, cumulative dose and extent of tissue irradiated **Chemotherapy:** • Most chemotherapeutic agents have the potential to cause or contribute to oral mucositis For individual drug risk factor, see ***BC Cancer Drug Manual*** • Continuous or high dose chemotherapy infusions increase risk of severe oral mucositis **Chemoradiotherapy:** • Combined chemotherapy and radiation therapy increases risk of developing severe oral mucositis **Hematopoietic Stem Cell Transplantation (HSCT)**
Other	• Medications causing xerostomia may predispose to oral mucositis:

	• Anticholinergics (e.g. atropine, transdermal scopolamine) • Antipsychotics (e.g. chlorpromazine, pro chlorpromazine, risperidone) • Antihistamines (e.g. diphenhydramine, chlorpheniramine) • Anticonvulsants (e.g. phenytoin) • Gabapentin, pregabalin • Opioids • Smooth muscle relaxants (e.g. baclofen) • Steroids (e.g. prednisone, dexamethasone) – may predispose to oropharyngeal candidiasis • Tricyclic antidepressants (e.g. amitriptyline, imipramine) • Periodontal disease: • pre-existing dental infections • gum disease • tooth decay • salivary abnormalities • Indwelling central venous catheter - may become colonized with bacteria that enter the blood during dental procedures • Immunosuppression • Age: - young children or older adults more susceptible • Females • Poor oral hygiene • Poor fitting dentures • Poor baseline nutritional status • Dehydration • Alcohol or tobacco use • Oxygen therapy
Consequences	
Increased Risk for: • Oral complications : pain, infection (local and/or systemic), bleeding, xerostomia • Risk for severe dehydration, cardiovascular compromise, malnutrition • Airway obstruction/ respiratory distress • Treatment risks: chemotherapy/radiation therapy dose delays, reductions or discontinuation • Decreased quality of life (e.g. psychological distress, problems eating, drinking, swallowing)	

Appendix A: COMMON COMPLICATIONS ASSOCIATED WITH ORAL MUCOSITIS

Type of Oral Complication	Key Assessment Questions	Key Interventions
Pain • Oral pain can be a barrier to oral hygiene	**Onset** • When did it begin? How long does it last? How often does it occur?	• See **Pain SMG** (WHO stepladder approach) http://www.bccancer.bc.ca/health-professionals/clinical-resources/nursing/symptom-management

recommendations • Oral pain management is essential for palliation, to prevent further complications such as dehydration, malnutrition.	**Provoking/Palliating** • What makes it better? Worse? **Quality** • Describe pain (burning, stabbing) **Region** • Location of pain? **Severity** • How severe is your pain? (0 – 10 scale, 0 no pain and 10 being worst imaginable) **Treatments** • What medications or treatments have you tried for your pain? Effective? **Understanding/Impact on You** • Is your pain interfering with your ability to eat or drink fluids? • Is your pain making it more difficult to breathe?	• Ice chips, popsicles, or cold compresses may be helpful with mild oral pain • Medications that may be prescribed for pain from oral mucositis: **Topical Agents:** May provide temporary relief in mild (Grade 1) mucositis – Analgesics (e.g. morphine, benzydamine), – Anesthetics (e.g., 2% viscous lidocaine, diphenhydramine solution) – Coating agents (e.g. magnesium or aluminum hydroxide/milk of magnesia) or a mixture of agents NOTE for local anesthetics: 1. Instruct patient to coat painful mucosal surfaces and then spit solution out- unless otherwise advised. Risk of impairing gag reflex if local anesthetic is swallowed, increasing risk of aspiration pneumonia or systemic uptake. 2. Use care with eating or oral hygiene measures when mouth is numb, to avoid trauma or accidental aspiration. **Systemic Agents:** – Opioid analgesics (e.g. morphine) for moderate to severe mucositis(Grade 2 – 4) – Encourage patients to use prescribed analgesics prior to meals & around the clock intervals if pain is constant – Sustained release oral doses or continuous intravenous infusions may be prescribed for severe oral mucositis – Patient Controlled Analgesia (PCA) with morphine (or other strong opioid) is recommended for patients with severe pain • Relaxation techniques may be helpful
Infection **Bacterial** • May have inflamed oral mucous membranes, oral pain, or ulcerations **Viral** (e.g. Herpes Simplex Virus) • May have small, raised vesicles filled with clear fluid on the lips or in mouth **Fungal** – (e.g. Candida) • May have inflamed mucous membranes, white “cottage cheese like” patches on tongue, oral mucosa	**Onset** • When did symptoms begin? **Provoking/Palliating** • What makes it better? Worse? **Quality** • Describe oral cavity **Region** • Isolated areas? Patchy? Generalized? **Severity** • Do you have a temperature greater than or equal to 38° C? • Do you have any pain? **Treatments** • What medications/treatments are you taking? Effective? **Understanding/Impact on You** Is your pain interfering with your ability to chew / swallow / speak / breathe?	• Alterations in oral mucosa or local infection increase risk for systemic infection (sepsis) especially for patients with neutropenia – A culture (C&S) is indicated if there is a break in the oral mucosa (e.g. cracked tongue); or if there are any suspect areas (e.g. new ulcerations, lesions, blisters) • Assessment of temperature every four hours – Reinforce importance of contacting health care professional if temperature greater than or equal to 38° C • Medications prescribed based on causative agent and in consideration of patient status – Antibiotics, antivirals, antifungals can be administered topically, orally, or intravenously • Prophylactic Treatment: topical or systemic antibiotics may be considered for patients with myelosuppression or who have poor oral hygiene. Dental treatments should be performed after the neutrophil count has reached a level of 1,000/mm3 or above. If a dental procedure is necessary and the neutrophil count is less than 1,000/mm3, the oncologist must be consulted concerning antibiotic coverage. Extensive invasive oral procedures should not be performed if the absolute neutrophil count will be <1,000/mm3 within 10-14 days of the oral procedure. Acyclovir can be used prophylactically to prevent recurrence and is recommended for myelosuppressed patients with HSV

Bleeding	**Onset** • When did it begin? Does the bleeding stop within 2 minutes? How often do you have bleeding? **Provoking/Palliating** • What makes it better? Worse? **Quality** • How much bleeding? (Small, moderate, large volume?) **Region** • Location of bleeding? **Severity** • Do you have a fever? Pain? **Treatments** • What medications or treatments have you tried? Effective?	• Review most recent lab reports – collaborate with physician to repeat as necessary – Assess platelet function & complete blood count • Monitor vital signs as clinically indicated **Occasional Bleeding** – Rinse mouth with ice water (cryotherapy) – Apply pressure to site with clean gauze dipped in ice water or a partially frozen tea bag **Persistent or Severe Bleeding** - may indicate thrombocytopenia • As above • Do NOT remove any clots that form • Collaborate with physician for topical thrombin or aminocaproic acid syrup (promotes clotting) • Platelet transfusion may be considered If patient is at home and experiences bleeding in the gums or oral mucosa lasting longer than 2 minutes (with or without fever, pain), instruct them to seek IMMEDIATE medical attention
Xerostomia • Abnormal dryness in the mouth characterized by a marked decrease and/or thickening of saliva. Xerostomia from cancer therapy may be acute or chronic in nature.	**Onset** • When did it begin? How long does it last? How often does it occur? **Provoking/Palliating** • What makes your dry mouth better? Worse? **Quality** • Saliva thicker &/or decreased in amount? **Severity** • How severe is your dry mouth? (0 – 10 scale, 0 (not dry/ normal) to 10 being driest imaginable) **Treatments** • What medications/treatments have you tried for your dry mouth? Effective? **Understanding/Impact on You** • Is your dry mouth interfering with your ability to eat or drink fluids? Speak? Breathe?	• See **Xerostomia SMG** • Follow basic oral assessment & hygiene recommendations for oral mucositis • Follow dietary recommendations for oral mucositis • **Recommendations for Moisture & Lubrication:** ***Humidity*** – Cool humidifier or bedside vaporizer may help to reduce oral dryness ***Water*** – Adequate fluid intake (8 -12 cups/2-3 litres daily) – Water can be used as a saliva substitute. Keep water bottle nearby at all times ***Saliva Substitutes*** – Artificial saliva products provide temporary relief to facilitate speech, chewing, and swallowing – Products available over the counter in spray, lozenge, gels, swab sticks – Milk, butter, or vegetable oil may be helpful ***Saliva Stimulants*** – Chewing may help stimulate residual salivary flow – Eat foods that require vigorous chewing (e.g. apples, carrots, celery) – Chew sugar free gum or suck on hard candy – Pilocarpine recommended for use in patients receiving radiation therapy to the head and neck • Fluoride treatments may be prescribed for patients with xerostomia to prevent or minimize dental caries or secondary tooth demineralization

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