



# Cancer Survivorship Patient Education on Post-Treatment Care

## Oral Complications and Dental Decay in Head & Neck Cancer Survivors

### What is the condition?

Patients with head & neck cancer may experience problems with teeth and oral health due to:

- Damage or destruction by tumor
- Loss of structures, such as saliva glands, due to treatment (surgery and/ or radiation)
- Long-term loss of oral health defenses, like saliva and blood flow to tissues in the area

Common problems may include:

- Dry mouth (Xerostomia)
  - Patients with head & neck cancer may experience variable degree of dryness of mouth following treatment (especially radiation treatments).
  - Six major salivary glands (2 parotid, 2 submandibular, and 2 sublingual glands) produce roughly 90% of our saliva. The salivary flow and its composition protects teeth against dental cavities. The majority of head & neck radiation therapy fields include these major salivary glands. Radiation irreversibly harms salivary glands resulting in lifelong dry mouth. Dry mouth increases the risk for dental cavities, poor oral health, and tooth loss.
- Osteoradionecrosis (ORN)
  - Osteoradionecrosis is a condition of delayed bone healing or inability for bone to heal following radiation therapy. Predictable healing requires a healthy blood supply. Radiation can harm the smallest of the blood vessels (called capillaries) in and around the area treated with radiation.
  - Extracting or pulling teeth following radiation therapy can lead to osteoradionecrosis. Extraction sites in areas that received high radiation doses do not always heal.
- Poor dentition
  - Dry mouth and osteoradionecrosis contribute to higher risk for poor dentition, including cavities, tooth loss, and the potential for non-healing wounds, pain and jaw fracture.

### *How common are these problems among patients with head & neck cancer?*

Most patients with head & neck cancer will likely suffer some effects on their oral health.

### *What are the signs/ symptoms?*

- Dryness of mouth
- Foul odor from the mouth
- Mouth pain
- Difficulty with chewing food
- Alteration of taste sensation
- Bleeding from lining of mouth
- Dental cavities, loose teeth or exposed bone
- Inability to open your mouth



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### *How is it diagnosed?*

Dental and oral health problems are often identified through an examination by an oral health care provider. Additional tests may be required such as dental x-rays or panoramic x-ray of the jaw. Your dental care provider may recommend additional testing.

### *How is it treated (and prevented)?*

Management of dental health for patients with head & neck cancer should start early in course of cancer management. Engaging with a qualified dental provider is critical.

Prevention: Dental evaluation prior to, during and after cancer care aims to reduce the risk of developing dental cavities and decrease the risk for developing a non-healing wound of the jaw following radiation therapy (i.e., osteoradionecrosis/ ORN).

- Topical application of fluoride gel may play a role in preventing dental cavities:
  - Applied with customized dental appliances like athletic mouth guards. Must be applied daily and for the rest of the patient's life
  - Decreases the possibility of developing dental cavities
  - Prescribed when one begins radiation therapy
  - Application for 5 to 10-minutes following routine brushing and flossing at bedtime
  - Spit out excess fluoride following use
  - Do not rinse, eat, or drink for 30 minutes following use
  
- Strategies for prevention of ORN should be considered:
  - Diseased teeth should be extracted prior to radiation therapy
  - Maintain optimal oral hygiene during and following radiation therapy
  - Consult your radiation oncologist and dental provider, if dental extractions are required following treatment with radiation
  - When extraction of teeth cannot be avoided in a patient with history of head & neck radiation, use of Hyper-Baric Oxygen (HBO) therapy should be considered.
  - HBO therapy may improve bone's ability to heal following radiation therapy. It is prescribed when teeth must be removed from areas that received high dose of radiation. Ask your health care provider for details on HBO therapy.
  - Some patients with severe ORN may require surgery. As a result, it is important to work with your oral health provider to reduce the risk for ORN in the first place.

Treatment & Restoration: Evaluation by a dental provider may benefit the planning process for the repair or replacement of teeth or other anatomic structures that might be lost or impacted by cancer or its treatment. Strategies to optimize oral health before, during, and after cancer treatment may be offered.

Maintenance & Surveillance: Dental providers may complement monitoring for recurrent or new cancers, and support efforts in reducing further loss of teeth.



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### When should I call my doctor?

Dental health should be a priority during every phase of care for patients with head & neck cancer.

#### Before cancer treatment

- You may be asked to see a dentist before starting cancer treatment. Your dental provider may discuss the impact of cancer and its treatment on your oral/ dental health.
- Your dental provider may perform an examination, obtain dental x-rays (including a panoramic x-ray), and talk to you about the health of your teeth
- You may be asked to think about restoration or removal of diseased teeth to reduce the risk of dental complications.
- Strategies for post-treatment ongoing dental care, rehabilitation and restoration may be discussed

#### Lifelong

Patients without a relationship with a general dentist should establish care with an experienced dentist in order to obtain:

- Periodic examination and x-rays
- Periodic cleanings by a general dentist, an oral hygienist, or a gum specialist (periodontist). Dental cleaning may sometimes be requested more frequently than usual.
- Dental restoration may be needed. Restoration process may include rehabilitation of existing teeth or implantation of artificial teeth in the jaw bone. These procedures usually require involvement of a dental provider experienced in the care of patients with head & neck cancer. Patients may consider discussing the benefits of dental implantation against risk of poor wound healing, especially in those who may have received radiotherapy for their treatments.
- Lifelong and daily fluoride application for those who had radiation therapy

You may need urgent help if you're experiencing:

- Pain
- Swelling
- Bleeding
- Loose teeth
- Open wounds or exposed bone
- Difficulty with speech or ability to chew food

### You may learn more at:

Head and Neck Radiation Treatment and Your Mouth:

<https://www.nidcr.nih.gov/oralhealth/Topics/CancerTreatment/HeadNeckRadiation.htm>

Three Good Reasons to See a Dentist Before Cancer Treatment:

<https://www.nidcr.nih.gov/oralhealth/Topics/CancerTreatment/ThreeGoodReasonsPicto.htm>