Mouth Care after Head and Neck Radiotherapy

- Get your teeth cleaned every 3-6 months.
- Get dental x-rays every 6 months to 1 year to help detect dental problems early.
- Use your fluoride EVERY DAY!

Why Use Fluoride Trays?

Daily fluoride (0.4% stannous or prescription 1.1% sodium fluoride) will help teeth resist the tooth decay caused by xerostomia (dry mouth). Radiation therapy to the head and neck area can lead to destruction of all teeth in a short time. This is due to permanent changes in the quality and quantity of saliva. Compliance with the following fluoride regimen will greatly reduce the risk of tooth problems after cancer therapy.

Custom Fluoride Trays



Radiation Caries (Tooth Decay)



This patient did not use fluoride as directed.

Directions for Fluoride Trays

- At bedtime, remove dentures from mouth. Brush and floss teeth thoroughly. Note: It is very important to remove all food and plaque from teeth before using fluoride. Food and plaque can prevent the fluoride from reaching the surface of the tooth.
- Place a thin ribbon of the prescribed fluoride gel into each tooth space of the upper and lower trays. Spread fluoride into a thin film coating the inside of the trays by using a cotton-tipped applicator, finger or toothbrush.
- Place the trays on your upper and lower teeth and let them remain in place for 5-10 minutes.
 Only a small amount of fluoride should come out of the base of the trays, otherwise there may be too much fluoride in the trays.
- After 5-10 minutes, remove the trays and thoroughly spit out the residual fluoride.
- Very important do not rinse mouth, drink or eat for at least 30 minutes after fluoride use.
- Begin using fluoride in the custom trays no longer than one week after radiotherapy is completed.
- Repeat daily for the rest of your life! Remember that tooth decay can occur in a matter of weeks if fluoride is not used properly.

Care for Fluoride Trays

- Rinse and dry trays thoroughly after each use. To clean, brush with a toothbrush and toothpaste or use a denture cleaner.
- Occasionally, the trays can be disinfected in a solution of bleach and water: 1 tbs. of bleach in 1/2 cup of water. Soak them for about 15 minutes. Rinse thoroughly.
- If the trays become covered with hard water deposits, soak them in white vinegar overnight and brush them the next morning.
- Do not use hot water or heat on the trays!

Mouth Care for Head and Neck Surgery Patients

Patient information from the UF Health Oral Medicine Clinic P.O. Box 100414 Gainesville, Fl. 32610 (352) 273-6741



Dental Examination **Before** Head and Neck Cancer Surgery

A dental examination including photographs, x-rays, diagnostic scans, dental impressions and other diagnostic tests is recommended before head and neck surgery so your surgeon, dentist and maxillofacial prosthodontist (specialized dentist) can better coordinate oral and dental rehabilitation after surgery. Dental exams should be performed as soon as possible after diagnosis of head and neck cancer. Severe gum disease, tooth decay, or teeth with abscesses (infection) will affect the outcome of dental rehabilitation and need to be addressed. If time permits, a professional dental cleaning is advised before surgery to remove excess bacteria that can affect post-surgical healing.

Surgical Procedure Terms

Tumor resection: removal of a tumor, which includes a margin of normal tissue, to eliminate all remaining cancer cells from the area.

Wide local excision: removal of a smaller area of diseased tissue with a margin of normal tissue.

Mandibulectomy: removal of part or all of the lower jawbone (mandible), which is necessary to remove tumor that has grown into the bone.

Maxillectomy: removal of part or all of the upper jawbone (maxilla), hard palate or roof of mouth which is necessary to remove tumor that has grown into the bone in this area. Glossectomy: removal of all or part of the tongue. Hemi-glossectomy: removal of one side of the tongue. Laryngectomy: removal of the voice box. The entire voice box is removed with a total laryngectomy; only part of it is removed with a partial laryngectomy.

Neck dissection: removal of lymph nodes in the neck (one or both sides) to eliminate cancer cells that are suspected or known to have moved to this area.

Fibula free flap reconstruction: utilization of the smaller of two bones in the lower leg, blood supply and soft tissue, to reconstruct the shape and integrity of the lower jaw after mandibulectomy.

Tracheostomy: an incision in the front of the neck that opens into the windpipe and allows for easier breathing until swelling from the surgical procedure resolves.

Gastrostomy tube (G-tube): a feeding tube that is inserted directly into the stomach area. Special liquid nutrients are put into this tube when a patient cannot attain adequate nutrition by swallowing food through the mouth due to pain, swelling or tumor location.

Radiation Therapy

Depending on the stage of the cancer, radiation therapy may be recommended as part of the treatment plan to reduce the risk of cancer recurrence. Usually, radiation therapy starts about 4-6 weeks after surgery to allow time for healing. Radiation therapy can compromise the ability of the jaw bone to heal once treatment is completed. Poor healing is a result of the permanent reduction of blood supply to irradiated bone. The lifelong risk of this complication depends on the dose and location of the radiation. After radiation therapy, you should always check with your radiation oncologist before getting any teeth removed or before having surgery that affects the gums and jawbone, such as dental implants.

Dental Implants

Dental implants are artificial roots made of metal which are surgically placed into the jaw. After healing, the implant is secure and can support the addition of artificial teeth and the forces of chewing. Implants can be an integral part of mouth rehabilitation, however there are many considerations that need evaluation by the treatment team (surgeons, dentists and radiation oncologists) to ensure the best possible results:

- Pre-surgical planning was there an opportunity to prepare and plan for dental implants prior to surgery?
- Radiation therapy does the jaw have enough blood supply to allow the bone and soft tissue to heal? Did the tissue receive greater than 50Gy dose of radiation? Hyperbaric oxygen therapy may be necessary to promote healing.

Oral soft tissues – do soft tissues have the proper shape and structure for successful implants? Is there enough thickness of jawbone to retain the implant? Do tissues need to be surgically reduced or augmented (increased) to support the implant?

► Tobacco use – tobacco use which can impair proper healing of bone and soft tissues.

► Timing of implants - some oncologists want patients to wait at least 1-2 years prior to the placement of dental implants to monitor for cancer recurrence and allow for tissues to heal.

Finances – most medical insurance will not cover dental procedures, including dental implants, crowns, bridges, full and partial dentures. Costs can approach \$15,000. Post-Maxillectomy

After a maxillectomy, there can be an opening from the

mouth into the sinus. This defect may or may not be closed by the surgeon with tissue from other areas of the body. When tissue is placed to cover the defect, the reconstructed tissue cannot usually support a full upper denture. Dental implant placement can increase the retention of an upper denture, however additional surgeries may be necessary. If the surgical defect is not covered after the maxillectomy, it is possible to have a removable maxillary obturator created and placed during surgery. The obturator is similar to a full denture but is larger to "obturate" or cover the sinus opening. Both surgical closure and the maxillary obturator help patients eat properly without leakage of fluid and food into the sinus cavity. It is important to retain healthy teeth whenever possible to help support dentures after surgery.

Post-Mandibulectomy

After a mandibulectomy, the remaining tissues may not be substantial enough to support full or partial dentures. Dental implants and/or additional surgery may be necessary to restore mouth and jaw structures to increase the chance that dentures can be worn successfully. It is always important to retain healthy teeth to help support dentures after surgery.

Denture Care During and After Cancer Therapy

If your mouth becomes sore during therapy, remove dentures and leave them out until the mouth heals. All full and partial dentures should be disinfected before each use with an antimicrobial denture cleaner. Dentures without metal may be soaked daily in a fresh solution of bleach and water (1tbs. bleach in $\frac{1}{2}$ cup of water). Rinse the dentures well before placing them back into your mouth.

Oral Care After Cancer Therapy

It is critical that remaining teeth are retained as long as possible after cancer therapy to support partial dentures, help chewing and nutrition, and improve quality of life. Dental visits every 3-6 months are recommended which should include a professional cleaning, x-rays and dental and soft tissue examinations by the dentist. If radiation therapy was part of the treatment, there are additional concerns for keeping teeth healthy. (See section on mouth care after head and neck radiotherapy.) Severe tooth decay (radiation caries) can be a very common, lifelong problem after radiation therapy. It is extremely important to keep your mouth clean and healthy after cancer therapy and to use daily fluoride, if recommended.