RADIATION/ CHEMOTHERAPY TREATMENT AND YOUR MOUTH

See your family Dentist BEFORE your radiation treatment!

If you are being treated with radiation or chemotherapy for cancer of your head or neck there are some side effects that could cause you to delay or stop treatment.

Oral complications include salivary gland dysfunction, which leads to dry mouth; rampant dental decay and mouth sores which are painful, diminish the quality of life and can lead to significant compliance problems. According to figures from the National Institutes of Health (NIH), oral complications occur in almost all patients receiving radiation for head and neck malignancies, in more than 75 percent of bone marrow transplant recipients and in nearly 40 percent of patients receiving chemotherapy.

Radiation is used to kill cancer cells but it can harm normal cells also, leading to problems with your teeth and gums; the soft, moist lining of your mouth; glands that make saliva and jaw bones. These side effects can:

- Hurt or make it hard to eat, talk and swallow.
- You have a higher incidence of getting an infection which can be dangerous when you are receiving cancer treatment.
- You may have to cut back on treatment or even stop it due to these side effects.

Mouth problems from radiation include:

1. Dry mouth
2. Loss of taste
3. Candidiasis
4. A lot of cavities
5. Sore mouth and gums
6. Infections
7. Jawbone changes
8. Jaw stiffness
9. Poor wound healing
10. Nutritional deficiencies leading to malnutrition

So check your mouth EVERY DAY.

To help prevent these problems:

- See a dentist at least 2 weeks before starting radiation. This visit can help prevent serious mouth problems. Side effects often happen because a person's mouth is not healthy BEFORE radiation starts.
- Be sure to give your dentist your doctor's phone number so they can talk to each other.
- If you have not gone to see your dentist and have started radiation treatment, make an appointment as soon as possible.
- The dental staff will check your teeth, take x-rays, take care of your mouth problems, show you how to care for your mouth to PREVENT side effects.
- Ethylol (amifostine) is an agent that reduces damage to the salivary glands and resultant dry mouth during radiation therapy. (Dentistry Today pg 38 June 04)
- ER laser after EMLA and "erase" the mucositis. Wait 30 sec. ... relief. IDF Dr.Ash 10/05
How can you keep your mouth healthy:

Cancer patients have different needs and require different types of treatments depending on where there cancer is, their stage of the disease, and what type of treatments they will be receiving. ie: chemo, radiation, etc. When you have lack of saliva you also have lack of important enzymes and mineral ions that aren't present to help in the defense of both oral infections and caries.

1. See your dentist BEFORE you start cancer treatment...because Prophys can not be resumed until 6-8 weeks after the 21-28 day cycle of chemo.
2. Look in your mouth everyday for changes like sores.
3. Keep you mouth moist by drinking allot of water; suck on ice chips; use sugarless gum; use a saliva substitute to help moisten your mouth.
4. Clean you mouth, tongue and gums:
   - Use an extra soft toothbrush and soften the bristle in warm water.
   - Use a fluoride toothpaste and brush after every meal and before going to bed.
   - Use fluoride gel in a mouthpiece at night, try Omni-Gel, Gel-Kam, and/or Prevident 5000 Plus toothpaste or Germiphene 1.1% neutral Sodium Fluoride gel to be placed in the trays worn & for 10 minutes each day.
   - Don't use mouthwashes with alcohol, use BreathRX or use Chlorhexidine to help control oral bacteria, however do not use Peridex because it contains 11.6% alcohol and alcohol can cause mucositis problems with radiation patients. You can than use a fluoride rinse to rinse with on an alternating basis with the Chlorhexidine when ever you can.
   - Use Xylitol gum to help prevent cervical decay.
   - Practice meticulous home care.
   - Floss every day, if they bleed and hurt contact your dentist.
   - Rinse your mouth several times a day with a solution of 1/4 teaspoon baking soda and 1/8 teaspoon of salt in one cup of warm water. Follow with a plain water rinse. Ask your dentist for alcohol-free chlorhexidine.
   - Have dentures that don't fit adjusted, relined or replaced.
   - Use of ice chips for oral sores.
   - Consider acupuncture. Acupuncture may aid cancer patients' dry mouth: acupuncture to the ear and index finger improved dry mouth in a majority of patients, although the length of their responses varied. During the acupuncture treatments, which involve three needles placed on the ear and one on the index finger, patients also get sugar-free candy to help stimulate salivation, “frothy salivation” usually gets started within 15 to 20 minutes.

Here are tips to help with caries prevention and dry mouth:

1. Have Fluoride Varnish (reapply in 3-4 months) Come in 3 times in one week before the radiation is commenced for application of fl varnish. The uptake of fl into the tooth surface is far greater than any foam, gel, or rinse. Then fix the Calcium and Phosphate with the Fl.
2. Use Biotene Dry Mouth Toothpaste to help replace those enzymes and add Calcium and Fluoride to help prevent demineralization due to lack of saliva. (www.biotene.net/products/toothpaste.asp)
3. Brush-on 1.1% Sodium Neutral Fluoride - brushing on and do not rinse after its and than use Biotene Toothpaste with Ca.
4. Drink LOT of water and fluids to keep from getting dehydrated. Bee very gentle when brushing as not to cause any trauma to the tissues. Very careful when flossing as well.
5. Mucocitis Mouthwash that can be made by a pharmacy:
- Mucocitis Mouthwash
- 1 gr Amoxicillin
- 30cc Nystatin
- 60 gm Hydrocolosone
- 30 cc Zylocaine 2%
- fill to 120 cc Benadryl

Swish as 2 - 3 times a day and expectorate. Or try:

--Nystatin Suspension, 100,000 u/ml, 30 mL. or Nysatin Powder 3 Million Units Hydrocortisone 60 mg. Diphenhydramine HCL Syrup q.s. ad. 240 ml. (Obtain a FREE Biotene sample packet that you can get at the following web site. [https://secure.biotene.com/login.asp](https://secure.biotene.com/login.asp))

--Researchers at the University of Alabama found that patients who “pushed themselves to swallow through treatment” had an easier time swallowing after treatment was completed. Using a speech pathologist to help patients exercise can stretch the tissue to avoid scarring and assist with swallowing. 2/06.

I am not aware of any scientific evidence that would justify removal of a well-done endodontic- treated tooth because of cancer or cancer treatment. If the tooth is chronically infected, cancer chemotherapy may decrease the immune system to such an extent that would allow the chronic low-grade infection to become acutely infected. If the patient has chronic periodontitis and receives chemotherapy, again the infection may become acute. That is why cancer patients must have optimal oral health prior to chemotherapy. Additionally those receiving oral radiation therapy for oral cancer must also try to maintain perfect oral health.

Omni Plaque Fighter Spray ® contains 1.2% poloxamer 407/dimeticone, an agent that coats and protects the mucosa for several hours, especially when used at bedtime. You may find that using these agents before bedtime negates the need for pilocarpine, thus avoiding side effects such as sweating during the night. These products may also be beneficial if you wear dentures. Lightly coat the internal surface of the denture to assist in moisturizing the mucosa and reduce denture irritation.

Finally if the cancer patient is being administered any drug in the intravenous bisphosphonate class as part of chemotherapy (to decrease serum calcium levels), extraction of a tooth is the very worst option imaginable, as necrosis of the mandible is a terrible complication. Joel M. Weaver DDS, PhD Dentist Anesthesiologist, Ohio State University.

If your mouth is sore, watch what you eat:

1. Choose foods that are good for you and easy to eat and swallow.
2. Take small bits of food.
3. Chew food slowly.
4. Sip liquids with our meals.
5. Eat moist, soft foods like cooked cereals, mashed potatoes and scrambled eggs.
6. Soften your food with gravy, sauces, broth, yogurt or other liquids to help in swallowing.
7. When your mouth hurts call your doctor to help find medicines to help control the pain.
8. Choose lukewarm foods and drinks instead of hot or icy-cold.

Avoid:

- Sharp, crunchy foods, like chips that can scrape or cut our mouth.
• Foods that are hot, spicy or high in acid, like citrus fruits and juices that can irritate your mouth.
• Sugary foods that can lead to decay.
• Toothpicks that can cut your mouth.
• ALL tobacco products. People who quit smoking or chewing tobacco have fewer mouth problems.
• Alcoholic drinks.

Topical agents for discomfort:

• Benzydamine 15 ml 0.15% oral rinse, rinse for 2 minutes 4-8 times a day before, during and for 2 weeks after radiation therapy
• Sucralfate Aluminum salt rinse; 10ml qid or every two hours if not swallowed.
• Viscous lidocaine 2.0% 450 ml bottle. Swish with 15-20ml every 3 hours.
• Triple mix: 1.5 ml (50 mg/ml disphenhydramine; 45 ml 2.0% lidocaine; 45 ml Maalox. Swish 5.0 ml hold for 30 seconds once day.
• Lortab “R” elixir: 12.5 mg hydrocodone, 120 mg acetaminophen; 7.0% alcohol, One teaspoons 30 minutes before meals.
• Prostaglandins PGE2 0.5 mg/day lozenge qid during chemo/radiation therapy.

Children can get the same side effects as adults, depending on their age.

• Permanent teeth may be slow to come in and may look different.
• Teeth may fall out.

They must go to the dentist BEFORE treatment starts to check their mouth, pull loose teeth and help with oral health education.

This information is courtesy of National Oral Health Information Clearinghouse)+SOURCE: Cancer 2002;94:1151-1156

Management Following Cancer Therapy

Oral Complications of Chemotherapy and Head/Neck Radiation

Updates

Comprehensive Approaches to Cancer Control Tool Kit

Actiq

If you have been given Actiq (oral transmucosal fentanyl citrate) to help with pain ...this is a sucker for slow-releases pain med throughout the day. It contains inactive ingredients: Hydrated dextrates, citric acid, dibasic sodium phosphate, artificial berry flavor, magnesium stearate, modified food starch, and confectioner's sugar.

This can cause rapid decay at the gum line throughout your mouth which can lead to very expensive dental repair through the mouth. Please see your dentist as soon as possible to prevent this condition from occurring. www.actiq.com

Periodontal Changes in Patients Undergoing Radiotherapy
The purpose of this study was to evaluate changes in the periodontium in patients who received head and neck radiation therapy.

Periodontal clinical parameters (probing depth, clinical attachment level, gingival recession, plaque index, and bleeding on probing) were assessed on 27 patients before and 6 to 8 months following radiation therapy in the head and neck area.

The greatest changes occurred in clinical attachment level: overall, 70.3% of the patients showed a loss, with 92% evincing loss in the mandible. Attachment loss was directly related to the field of radiation and was greater when the jaws were actually included in the irradiated area.

Periodontal status should be evaluated prior to and following radiation therapy in the oral-maxillary-facial region to help ensure that periodontal health is maintained in oncology patients.


**Visit Dentist Before Radiation Therapy to Prevent Oral Problems**

More than one million Americans will be diagnosed with cancer each year, and about 40 percent will develop serious mouth problems as the result of head and neck radiation therapy and chemotherapy. Severe oral complications, such as the patient's inability to eat and drink, often force doctors to delay or stop the radiation treatment.

To give you the best chance to fight cancer, your dentist must be added to the cancer treatment team and you must visit your dentist before beginning radiation therapy, according to a new report in the November/December 2003 issue of General Dentistry.

The goal of head and neck radiation is to kill cancer cells while limiting damage to adjacent healthy tissue and structures like salivary glands, jawbones and tissues lining the mouth. However, damage to healthy tissue is unavoidable.

During treatment, your dentist can work with the patient to monitor any changes in their mouth that may occur, such as dry mouth, increased cavities and painful mouth sores.

The less oral problems a patient experiences, the more likely the patient will stay on the treatment program. So schedule a visit with your dentist one month before starting radiation, doing so may help prevent serious complications.

**Oral complications from neck and head radiation:**

- Dry mouth
- Cavities
- Oral yeast infections
- Taste loss
- Inflammation and ulceration of mouth lining
- Non-healing wounds
- Limited mouth opening
- Nutritional deficiencies

**Pretreatment strategies for cancer patients**
- Contact a general dentist for examination before therapy begins.
- Schedule oral examination before initiation of cancer therapy.
- Have all pre-existing oral disease treated.
- Extraction of hopeless and questionable teeth should be accomplished three weeks prior to treatment.

**Oral Complications of Chemotherapy and Head/Neck Radiation**

EMLA is 2.5% prilocaine and 2.5% lidocaine in a eutectic mixture. It may be ordered in 30 gram tubes from Southern Anesthesia.

1.800.624.5926 [www.southernanesthesia.com/](http://www.southernanesthesia.com/). The item number is 11W151601 for a 30 gram tube and price is $49.50.

Oral Complications in Radiation Therapy; Dr. Harrison, Dr. Dale, Dr. Haveman, Dr. Redding; General Dentistry pg 552-561, Nov Dec 2003

***AGD Cancer Therapy Caused Devastating Oral Complications AGD 2000.***

Reed's Topical will be sold in one ounce containers (pretty close to 30 grams) for $25.00 each, making it roughly half the price of EMLA. We have the following flavors available: Raspberry, Mint, Bubble Gum & Piña Colada. Tom Reed at: Reed's Compounding Pharmacy 2729 E. Speedway Tucson, AZ. 85716 520.318.4421 1.877.REEDSRX 520.318.1054 FAX

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