



Cancer and the Mouth

A cancer diagnosis of any kind can be a frightening and overwhelming experience. Building a team of medical specialists who can support all the different needs you might experience before, during, and after cancer treatment is incredibly important. One of those specialists should always be a dentist. No matter what type of cancer you may have, oral complications may arise. Having a dentist integrated into your treatment team means that you can get the support you need for your mouth when you need it. This is especially true if you haven't seen a dentist for a while.

In an effort to help you understand what kind of dental support you may need during this difficult time, Dr. Rich has created this resource detailing the oral complications that can arise during any type of cancer treatment, as well as a specific discussion of oral cancer and how you can prevent it.

Oral Complications of Cancer Treatment

The most common therapies used in treating cancer anywhere in the body are surgery, chemotherapy and radiation. All of these treatment modalities can often produce side effects in the mouth that require additional dental care and observation before, during, and after cancer treatment. Those side-effects can include but are not limited to the following:



Potential Oral Side-Effects of Both Chemotherapy and Radiation

- Mouth sores (oral mucositis)
- Viral, bacterial, or fungal infections
- Dry mouth
- Impaired ability to eat, taste, swallow or speak due to mouth sores, dry mouth, or infection
- Change in taste perception
- Poor nutrition related to eating difficulties because of pain, dry mouth, loss of taste, or nausea
- Altered tooth development, craniofacial growth, or skeletal development in children undergoing radiation or high doses of chemotherapy before age 9

Potential Oral Side-Effects of Chemotherapy Only

- Toothache or a burning sensation in the gums without infection
- Bleeding

Potential Oral Side-Effects of Radiation Only

- Lifelong risk of rampant dental decay if changes in the quality or quantity of saliva persist after treatment is complete
- Loss of elasticity in the masticatory muscles that can restrict normal ability to open the mouth
- Osteonecrosis, or bone death, in the jawbone or other craniofacial bones when the head or neck are exposed to high-dose radiation therapy, resulting in a significantly decreased ability to heal these bones when traumatized



How Your Dentist Can Help

Involving your dentist in your cancer diagnosis and treatment as early as possible is key in preventing some of the most damaging oral complications that can arise from cancer treatment. Scheduling a visit with your dentist to assess and address any existing infection, such as periodontal disease or decay, *before* chemotherapy or radiation treatment begins is especially important. Below is checklist of several types of dental visits that may be necessary to ensure that the health and comfort of your mouth is addressed before, during, and after your cancer treatment.

A Dentist's Role Before Cancer Treatment Begins

- Initial dental consultation and cleaning (active periodontal disease may require more extensive treatment)
- Treatment and resolution of any current/ongoing infection or decay in the mouth (when possible)

A Dentist's Role During Cancer Treatment

- Regular oral care including dental cleanings and exams
- In some cases, additional cleanings or exams during cancer treatment in order to manage side-effects of treatment
- Oral pain management through additional dental treatment, medication, or prescribed palliative mouthwashes (as approved for use by your primary oncologist)
- Use of topical fluoride to keep the tooth enamel strong
- Additional instruction on home care alternatives if traditional brushing and flossing techniques become too painful



A Dentist's Role After Cancer Treatment

- Full dental evaluation to diagnose any chronic conditions or side-effects secondary to the cancer itself or its treatment
- Additional dental reconstructive procedures may also be required at any point after cancer treatment as a result of structural damage to the hard or soft tissue due to the cancer itself or its treatment

Oral Cancer

Of all the cancers in the body, oral cancer is still relatively rare. However, for those patients who do develop an oral form of cancer, the effects on the health and structure of the teeth, jaw, mouth, and face can be devastating. The good news is that most forms of oral cancer are largely preventable. Early detection and a conscious effort to reduce or eliminate controllable risk factors are key to preventing or beating an oral cancer diagnosis.

Alcohol and Tobacco Use

Alcohol and tobacco use are the primary high-risk behaviors associated with the development of oral cancer. Regular and excessive use of either one can put you at a much higher risk of developing oral cancer – especially in the forward two-thirds of the mouth – than those individuals who do not use alcohol or tobacco at all. For those individuals who regularly combine the use of both alcohol and tobacco, the risk is significantly greater than using either substance alone.

Certain forms of oral cancer can also develop in patients with no history of alcohol or tobacco use. Many of these cancers are associated with the presence of specific strains of human papillomavirus or HPV. HPV-16 and HPV-18, two high-risk HPV types that are commonly associated with cervical cancer, have been shown to be present in approximately 85 – 90% of these HPV-related cases.



Oral HPV Infection

HPV-associated oral cancer mostly affects the tissues and structures in the back one-third of the mouth, including the base of the tongue, tonsils, soft palate, and the walls of the throat. Although cancer can certainly occur in these areas without the presence of an HPV infection, the incidences of HPV-related oral cancer is on the rise in recent years and should not be ignored.

Some very recent research has indicated that the HPV vaccination originally developed for the prevention of HPV-related cervical cancer may be effective in immunizing young people against the same strains of HPV in the mouth. However, the mechanisms of oral infection with HPV are still not completely understood. Studies of transmission of the virus through oral sex and open-mouthed kissing have shown conflicting results.

More research is still needed to understand how people get and give oral HPV infections, and to understand how and when those infections are related to the development of oral cancer. Until more research is done, the CDC currently acknowledges the potentialities of HPV immunization for younger men and women in preventing some types of oral HPV infections, but concedes that further study is still required before the vaccine can be proven effective in preventing HPV-related oral cancers.



How Your Dentist Can Help

Regular dental visits are key to the early detection of oral cancer, especially those cancers located in the front two-thirds of the mouth. Cancer is not painful until it progresses to a point where its size is affecting other functions in the body. Regular dental care means that a qualified dental professional is examining your mouth two or three times a year. He or she will be more likely to notice any suspicious changes in your mouth long before you might experience any pain or sensation and could help you identify a cancerous lesion much earlier than you otherwise would have.

A dentist cannot treat oral cancer, but he or she may be able to make a preliminary diagnosis and/or make a referral to a qualified specialist to further examine, biopsy and possibly treat a suspicious area in the mouth when noted.

What You Can Do to Prevent Oral Cancer

There are many steps a person can take to significantly reduce his or her risk of developing oral cancer.

- See your dentist regularly for evaluations and cleanings and follow up on any recommendations to consult with a specialist about a suspicious area in the mouth.
- Stop smoking cigarettes, cigars, and pipes (including hookahs and other water pipes).
- Do not use chewing tobacco, snuff, snus, and/or dissolvable tobacco as an aid to stop smoking or as an alternative to smoking.
- Reduce or eliminate your consumption of beer, wine, spirits, liquors, and other forms of alcohol.
- If you use mouthwash, make sure that it is alcohol-free.



A Special Note about E-cigarettes

E-cigarettes have only been available on the U.S. market since 2006 and have not been adequately studied yet to determine what role they might play in oral or lung cancer development. Although e-cigarettes are still not fully regulated by the FDA, an initial study was done by the agency in 2009. Eighteen samples of e-cigarette cartridges from two leading brands were analyzed and cancer-causing substances were found in half those samples. Other impurities were also noted, including the inclusion in one sample of diethylene glycol, a toxic ingredient found in anti-freeze.

Manufacturing inconsistencies were also suggested in the FDA's study, when nicotine levels from each puff varied a great deal even between cartridges labeled as having the same nicotine amounts. Small amounts of nicotine were also found in cartridges that were labeled as nicotine free.

Until further research has been done on e-cigarettes and they are fully regulated by the FDA, it may be best to avoid them. Certainly, children should never be encouraged to use e-cigarettes as a toy or prop, and teens and young adults should not be fooled into thinking that e-cigarettes offer a "safe alternative" to cigarette smoking.



Conclusions

Cancer is a frightening diagnosis for anyone, but early detection and risk-factor management have proven again and again to be the most effective aids in successful cancer treatment and long-term remission. Your dentist is an important part of your cancer management team, and you should not hesitate to include him or her in your cancer diagnosis as early as possible.

Current patients of Dr. Rich are always encouraged to call the office as soon as a cancer diagnosis is made. New patients who are looking for dental care before, during, or after cancer treatment are also welcome and encouraged to call our office to discuss your specific needs and schedule an appointment.

References:

American Dental Association: *Statement on Human Papillomavirus and Squamous Cell Cancers of the Oropharynx*

US National Library of Medicine: *Reduced prevalence of oral human papillomavirus (HPV) 4 years after bivalent HPV vaccination in a randomized clinical trial in Costa Rica*

Centers for Disease Control and Prevention: *Human papillomavirus (HPV) and Oropharyngeal Cancer Fact Sheet*

National Institute of Dental and Craniofacial Research: *Oral Complications of Cancer Treatment*

National Cancer Institute: *Oral Complications of Chemotherapy and Head/Neck Radiation*

American Society of Clinical Oncology: *Health Risks of Waterpipes, Smokeless Tobacco, and E-cigarettes*

American Cancer Society: *Guide to Quitting Smoking*

U.S. Food and Drug Administration: *Public Health Focus: Electronic Cigarettes*