

## Late Effects of Head & Neck Radiation

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Dear OncoLink "Ask The Experts," I had radiation for 8 weeks for nasopharyngeal cancer that had also gone to a lymph node in my neck. Now over 4 years later, I have some problems with my voice and breathing. My tongue has recently started cramping up on me for 5 or so minutes at a time, and I can't talk or swallow during this time. My right shoulder is weak, and I can't lift my arm as I used to and the muscle is gone on top of the shoulder. Is this normal, and is there any treatment that can be done or any medication to stop the tongue from responding this way?

**Christine Hill-Kayser, MD, Assistant Chief Resident in the Department of Radiation Oncology at the Hospital of the University of Pennsylvania, responds:**

Late effects from radiation to the head and neck may be complicated, and may involve several different structures in the regions that were irradiated. The most common late effect of radiotherapy for head and neck cancer is dry mouth. This can occur from damage to the glands that produce saliva. Dry mouth can cause difficulty with swallowing or eating certain types of food. Additionally, chronic dry mouth can cause dental decay that may occur faster than usual. Survivors of head and neck cancer should be followed closely by a dentist, and the dentist may recommend use of fluoride trays to promote dental health. Artificial saliva products may be helpful in relieving dry mouth, as may taking small, frequent sips of water. Radiation to the head and neck may alter the taste sensation, as well. In many cases, taste returns to normal with time, but this is not always the case. Difficulties such as dry mouth and taste alteration may affect a survivor's ability to take in adequate food. Use of nutritional supplements, such as Ensure or Boost, may be helpful, and nutritional counseling is important for all survivors who may have difficulty eating.

Radiation to the neck may also cause damage to the vessels, nerves, and muscles. Damage to the vessels in the neck may cause increased risk of stroke from atherosclerosis (plaqueing) inside the vessels. Because of this risk, survivors of head and neck cancer should be particularly careful to avoid other risk factors for stroke – this includes eating a low-fat, healthy diet and avoiding smoking. Damage to the lymph vessels, which drain fluid from the head and neck, may cause lymphedema. Lymphedema may cause swelling in the neck or face, which may be worse after lying down. Patients with lymphedema may be referred to a Lymphedema Therapist for therapy to address the problems associated with lymphedema.

Damage to the nerves within the head and/ or neck is rare after radiation, but does occur in some cases. Damage to the nerves that control the throat may make swallowing difficult. If this occurs, a swallowing study may be performed (video swallow, barium swallow, or both). If a speech and swallow specialist observes swallowing abnormality on a swallow study, s/he may recommend dietary changes to assist with swallowing and prevent choking. Damage to the nerves that control the voice may cause hoarse voice, which may or may not be permanent. Damage to the nerves that control the arms can also occur from radiation to the head and neck. This may occur from damage to a nerve structure called the brachial plexus, and

may result in weakness of one arm or shoulder. Patients who develop arm weakness should be referred to a Physical Therapist; they may also be referred to a Neurologist for testing of nerve and muscle function. Very rarely, the nerves that control the tongue may be damaged by radiation. This may cause uncomfortable “spasms” of the tongue. Patients who develop painful motions or spasms of the tongue should be evaluated by a speech and swallow specialist, and may also be referred to a neurologist for testing of nerve and muscle function.

Damage to the muscles in the neck may also occur after radiation. Usually, damage to the muscles results in atrophy, or decrease in size of the muscles on one or both sides of the neck. The muscles and soft tissue may also develop a hard or “woody” texture. Some survivors will develop longer, thinner-appearing necks that are not as strong as they were before treatment due to muscle atrophy, resulting in difficulty holding their head up for long periods. Some practitioners will prescribe a brace or physical therapy to help with this condition.

Some practitioners may recommend a combination of medicines to address hardening, or fibrosis, of tissues of the head and neck, including pentoxifylline (Trental) and vitamin E. Survivors interested in medical treatment for changes in the tissues of the neck may discuss these medicines with an oncology specialist with expertise in treating head and neck cancers.

You can learn more about late effects due to cancer treatment by creating your own [OncoLife Care Plan](#).

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