



Cancer Survivorship Patient Education on Post-Treatment Care

Neurosensory Disorders

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What is it?

A neurosensory disorder results from activation of nerves that commonly signal touch, pain, pressure or temperature sensation. In the mouth and nose, neurosensory function includes taste and smell. These signals are transmitted from the tip of the nerve back towards the brain where we are able to register the sensation. Signals can also arise from nerves that are damaged by tumor, surgery, radiation or scar tissue.

Neurosensory disorders are common following head and neck cancer therapy. This includes **taste change**, a wide array of **pain syndromes** including nerve pain (numbness, tingling, pain), mucosal sensitivity, altered hearing and altered sight. (Issues with hearing and sight will be discussed separately.) Neurosensory disorders may reflect local conditions such as infection that require diagnosis and management.

How common is it among patients with head and neck cancer?

Neurosensory disorders are common, occurring in virtually all head and neck cancer survivors. Some disorders are more frequent than others. For example, taste changes and mucosal sensitivity are very common long-term symptoms related to radiation therapy, while post-operative pain is less frequent. For most patients who have long term neurosensory disorders, symptoms are often mild to moderate and may be well controlled with the management strategies noted. A small percentage of patients will have severe long-term neurosensory problems and may require referral to specialists in order to manage symptoms.

What are the signs/symptoms?

Taste: While taste change or loss may be present at diagnosis, taste alterations develop in most patient as a result of therapy. Taste changes associated with either surgery or chemotherapy are less severe and usually short-lived whereas taste changes due to radiation may be more severe and continue for prolonged periods of time. Indeed, radiation therapy may result in persistent taste alterations in a substantial percentage of long-term survivors. Taste alterations may lead to change in diet which may result in weight loss and dietary deficiency. In severe cases, taste alterations may lead to nausea and vomiting. Loss of interest in and pleasure from food can result in decreased quality of life and reduced oral intake and dietary changes.

Pain: People with head and neck cancer may develop a number of pain syndromes including: post-operative pain and/or numbness, pain due to tumor infiltration of nerves and tissues; muscle pain due to scar tissue from tumor or treatment; discomfort in the soft tissues of the neck and face due to lymphedema, mucosal pain due to ulcers from radiation, sensitivity or pain involving the mucous membranes of the mouth and throat, due to tissue thinning, dry mouth and nerve sensitivity; and dental pain or sensitivity.



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How is it diagnosed?

Neurosensory disorders are generally identified by patients and communicated to the treating physician. It is very important to let your physician know about any symptoms of pain or discomfort so that they can identify the cause and potential treatments. In some cases, diagnostic studies may be needed to pinpoint the cause of symptoms. In other cases the cause of symptoms may be evident. Diagnosis is based on report of taste change, and oral sensitivity. Taste testing can be conducted. In addition, review of medications, health history, saliva function and ruling out local oral/dental conditions are indicated.

How is it treated?

Taste: If you have taste changes, it is important to identify foods that are still pleasurable and to avoid foods that have a “bad taste”. Good mouth care to keep oral bacteria under control may help. Avoid medications that worsen taste alterations. Dry mouth may worsen taste changes. If you have dry mouth, avoid medications that make the dry mouth worse and consider trying one of the medications that stimulate saliva. Patients with continuing taste change may be managed by specialists with interest in taste function.

Pain: Post-operative pain varies from patient to patient. A variety of medications may be used to control symptoms including aspirin-like medications, acetaminophen (Tylenol), opioids, and other medications that decrease nerve pain (such as anti-depressants and anti-seizure medications).

Patients with severe pain due nerve damage from tumor or treatment may need to see a pain specialist for treatment recommendations. Interventions such as nerve blocks may be able to alleviate symptoms. Muscle pain may respond to heat or cold compresses, topical medications (such as topical aspirin like medications), muscle relaxant medicines, physiotherapy including gentle stretching, low level laser therapy, or muscle trigger point injections.

After treatment is completed, many patients note swelling in the soft tissues of the face and neck. Often this is due to damage to the lymph nodes and lymphatic channels. This is called lymphedema. Patient will often describe an annoying discomfort, pressure or choking sensation. This may be treated with lymphedema therapy.

Mucosal pain due to ulcers (mucositis) and mucosal pain following radiation therapy may benefit from topical rinses that can be either applied directly to the ulcer or gargled. Patients with dental pain or sensitivity should be evaluated by a dentist to ensure that there are no major dental issues that need to be addressed.

When should I call my doctor?

Inform your doctor of ongoing or new symptoms when present. If you do not report these symptoms they will not be identified.



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Where can I learn more?

Web resources:

Multinational Association of Supportive Care in Cancer - MASCC.org

Oral Cancer Foundation (OCF) – <https://oralcancerfoundation.org/>

Support of People with Oral Head & Neck Cancer (SPOHNC) - <https://www.spohnc.org/>

References:

1. Ganzer H, Touger-Decker R, Parrott JS, Murphy BA, Epstein JB, Huhmann ME. Symptom burden in head and neck cancer: impact upon oral energy and protein intake. *Support Care Cancer* 2013; 21:495-503. DOI 10.1007/s00520-012-1542-4.
2. Epstein JB, Thariat J, Bensadoun RJ, Barasch A, Murphy BA, Kolnick L, Popplewell L, Maghami E. Oral complications of cancer and cancer therapy: From cancer treatment to survivorship. *CA Cancer J Clin* 2012;62(6):400-22.
3. Klasser GD, Epstein JB. Oral burning and burning mouth syndrome. *J Am Dent Assoc* 2012; 143 (12): 1317-9.
4. Kolnick L, Deng J, Epstein JB, Migliorati CA, Rezk J, Dietrich MS, Murphy BA. Associations of oral health items of the Vanderbilt Head and Neck Symptom Survey with a dental health assessment. *Oral Oncol* 2014;50(2):135-40, doi 10.019
5. Coa KI, Epstein JB, Ettinger D, Jatoi A, McManus K, Platek ME, Price W, Stewart M, Teknos TN, Moskowitz B. The impact of cancer therapy on the diets and food preferences of patients receiving outpatient therapy. *Nutrition and Cancer* 2015; 67(2):339-53. doi: 10.1080/01635581.2015.990577.
6. Ganzer H, Touger-Decker R, Byham-Gray L, Murphy BA, Epstein JB. The eating experience after treatment for head and neck cancer: A review of the literature. *Oral Oncol* 2015; 51:634-42. doi: 10.1016/j.oraloncology.2015.04.014
7. Epstein JB, Smutzer G, Doty RL. Understanding the impact of taste changes in oncology care. *Support Care Cancer* 2016;24(4):1917-31. Doi 10.1007/s00520-016-3083-8.
8. Ezenwa MO, Fischer DJ, Epstein J, Johnson J, Yao Y, Wilkie DJ. Caregivers' perspectives on oral health problems of end-of-life cancer patients. *Support Care Cancer* 2016; 24(11): 4769–77. doi: 10.1007/s00520-016-3328-6
9. Barasch A, Epstein J. Assessment of taste disorders. *BMJ Best Practice* Sept 2016. <http://bestpractice.BMJ.com/best-practice/monograph/971.html>