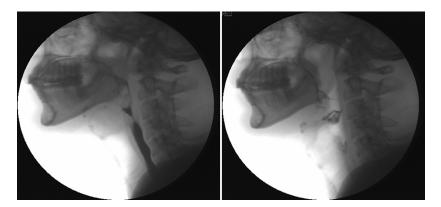
THE UNIVERSITY OF TEXAS MDAnderson

FEBRUARY 2016: SWALLOWING THERAPY FOR HEAD AND NECK CANCER **PATIENTS** 

# Swallowing Therapy for Head and Neck Cancer Patients

Therapy improves function during, after cancer treatment

#### BY BRYAN TUTT



Still images from videofluoroscopy performed during the baseline assessment of a patient with newly diagnosed locally advanced cancer at the base of the tongue show adequate airway protection with complete larvngeal closure at peak swallow (left) but tumorassociated swallow inefficiency with post-swallow pharyngeal residue (right, circle).

In patients with head and neck cancer, loss of swallowing function may result from radiation therapy, surgery, or the cancer itself and lead to poor health and reduced quality of life. At The University of Texas MD Anderson Cancer Center, individualized swallowing therapy programs directed by speech pathologists are helping patients maintain or recover their swallowing function during and after treatment.

Recent studies support the use of thorough evaluation of swallowing function and tailored exercise regimens to maintain or recover swallowing function in patients with dysphagia related to head and neck cancer treatments. Some of these studies assessed the effects of radiation therapy. "A common misconception about radiation-associated dysphagia is that it is primarily an issue of stricture of the esophagus," said Kate Hutcheson, Ph.D., an associate professor in the Department of Head and Neck Surgery

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and the associate director of research for the Section of Speech Pathology and Audiology. "But meta-analyses with thousands of patients have shown that stricture occurs in less than 10% of patients treated with radiation therapy for head and neck cancer. So esophageal dilation is not always the answer, and nine patients out of 10 need a more complete workup to establish the source of their swallowing difficulty."

Another study of swallowing function in head and neck cancer patients raised questions about the widespread application of electrical stimulation therapy. In fact, recently published results from a multisite randomized clinical trial showed no benefit from adding neuromuscular electrical stimulation therapy to swallowing exercises in head and neck cancer patients with posttreatment dysphagia.

At MD Anderson, individualized swallowing therapy programs are rapidly evolving to improve swallowing function and quality of life for patients with head and neck cancer. These programs typically begin soon after treatment for patients whose tumors are treated with surgery or before treatment, as a preventive measure, for patients who undergo radiation therapy.

### Preventive therapy

"A large body of evidence suggests that preventive swallowing therapy is the best practice for patients who are going to receive radiation therapy to the head and neck," Dr. Hutcheson said. "After their multidisciplinary workup here at MD Anderson, patients who are scheduled to receive radiation therapy to the head or neck are enrolled in a proactive, preventive swallowing therapy program even if they have no problem swallowing at the time they are diagnosed."

The preventive swallowing therapy program begins with a pretreatment evaluation that typically includes videofluoroscopy (also called a modified barium swallow study). "Videofluoroscopy gives us the physical and functional parameters of the swallow: how safely and efficiently the patient can move food and liquid through the mouth and throat," Dr. Hutcheson said. "Baseline evaluations uncover subclinical swallowing difficulties fairly often. Knowing this helps us provide patients with specific instructions on how and what they should eat during radiation therapy to avoid swallowing things that will be aspirated—drawn into the lungs—and cause pneumonia."

Patients in the preventive swallowing therapy program also attend an exercise training session before the beginning of radiation therapy. The training sessions are conducted by speech pathologists, many of whom have specialty certifications in swallowing disorders from the American Speech-Language-Hearing Association.

Each patient is given a specific set of exercises for the pharynx and larynx to maintain activity of the muscles that receive a bystander dose of radiation. The daily regimen includes six to eight exercises and takes less than 15 minutes to perform. Dr. Hutcheson said that proactive swallowing therapy is especially important for patients who will undergo radiation therapy to both sides of the neck, as this group has a high risk of radiation-associated dysphagia.

The exercise regimen is one of two tasks given to patients during radiation therapy; the other task is eating regularly. "The vast majority of patients stop eating solid food during the course of head and neck radiation therapy because it tastes bad or hurts to swallow. But we encourage patients to push through and keep eating to maintain as much normal muscle function as possible," Dr. Hutcheson said.

During radiation therapy to the head and neck, 50%–60% of patients require feeding tubes; the resulting disuse of the musculature can contribute to further deterioration of swallowing function. However, feeding tubes can be avoided in many patients through individualized supportive care.

"We know that patients who keep their swallowing system engaged during the course of their radiation therapy have a better chance of recovering meaningful swallowing ability after their therapy," Dr. Hutcheson said. "We have a philosophy of 'use it or lose it."

Patients in the preventive swallowing therapy program return for sessions with their speech pathologist at the midpoint and at the completion of their radiation therapy, with additional therapy sessions if necessary. Patients are advised to continue their home exercise regimen for at least 6 months after the completion of radiation therapy. "We do not have great evidence to show how long or how often the exercises should continue after treatment," Dr. Hutcheson said. "But I tell patients that if it were me, based on what I've seen, I would keep up lifelong maintenance therapy of probably one or two sessions per week."

#### Intensive therapy for persistent dysphagia

After surgery or radiation therapy for head and neck cancer, most patients who practice a home exercise regimen recover a reasonable level of swallowing ability. However, 15%–20% develop

persistent swallowing difficulties. Persistent dysphagia is a challenging clinical problem that is typically not responsive to a home exercise regimen.

For patients with persistent dysphagia—whether their cancer treatment was done at MD Anderson or elsewhere—Dr. Hutcheson and her colleagues developed a program they call boot camp swallowing therapy. This is an intensive program in which the patient works with a speech pathologist daily for about 3 weeks.

During the daily sessions, speech pathologists use progressive resistance training coupled with functional swallowing tasks to help patients increase the intensity of their swallowing training. Patients' progress can be monitored by various methods of biofeedback, including surface electromyography and manometry. Bolus-driven exercises help patients remove "crutches," such as flushing food down with water, from their eating habits while eating increasingly difficult foods.

Dr. Hutcheson said that because many different swallowing therapies are available, it can be challenging for speech pathologists to find the best ones for a particular patient. "We have an algorithm to work through the therapeutic options and then select the therapies we think will target the individual patient's issue," she said.

The boot camp swallowing therapy program has shown impressive results: about 70% of patients see gains in their functional status. "This intensive program is unique to MD Anderson," Dr. Hutcheson said. "And we've had success in treating patients with very severe or long-standing dysphagia."

## Improving quality of life

Not satisfied with the success rate of the current swallowing therapy programs, researchers at MD Anderson continue to address swallowing issues for which treatments are lacking. "We still need therapies that will address chronic aspiration," Dr. Hutcheson said. "There is no proven treatment to reverse chronic aspiration in head and neck cancer survivors." She added that the Section of Speech Pathology and Audiology has a grant-funded program to study expiratory muscle strength training in head and neck cancer patients. Such training has shown promise in reducing aspiration in patients with neurodegenerative dysphagia such as that seen in patients with Parkinson disease, and Dr. Hutcheson is hopeful that it will help her patients as well.

"Swallowing is a huge quality of life issue. The key to improving

swallowing function is early and individualized therapy," Dr. Hutcheson said. "A dysphagia-specialized speech pathologist—whether seen at MD Anderson or elsewhere—can help maximize a patient's outcome."

For more information, contact Dr. Kate Hutcheson at 713-792-6513. To learn more about swallowing therapy, visit <u>MD</u>

<u>Anderson's Head and Neck Survivorship Clinic</u> at or the <u>American Speech-Language-Hearing Association's Board on Swallowing and Swallowing Disorders</u>.

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