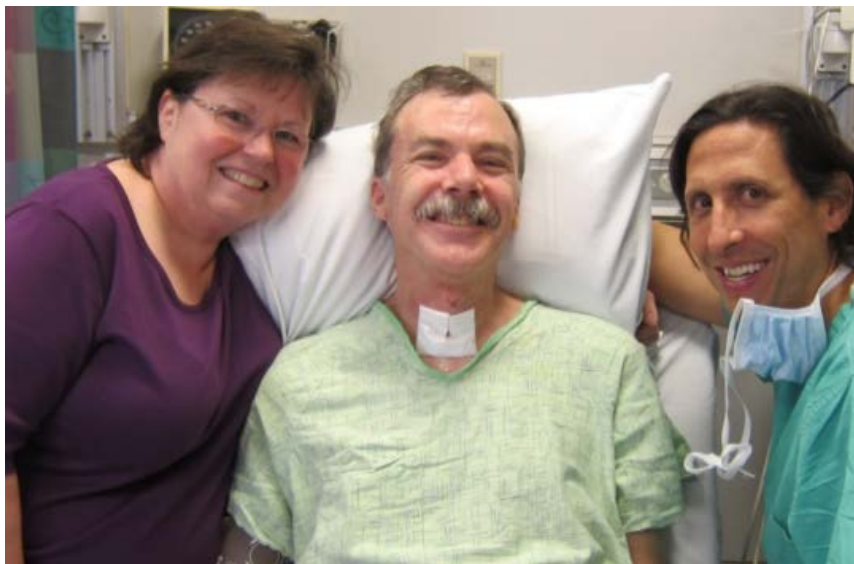


DEPARTMENT OF OTOLARYNGOLOGY

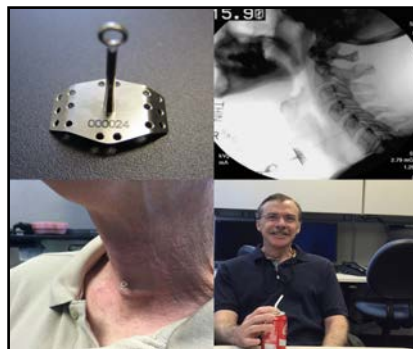
CENTER FOR VOICE AND SWALLOWING NEWSLETTER

JEFF MAURMAN MAKES HISTORY



On January 8th, 2015, head and neck cancer survivor Jeff Mauerman became the 1st patient in the US to be implanted with the swallow expansion device (SED). The SED allows a patient to manually open the upper esophageal sphincter and is indicated for patients with feeding tube-dependent dysphagia. The device is implanted onto the cricoid cartilage under local anesthesia and is allowed to integrate for 8 weeks. On March 6th, after a brief training session, Jeff was cleared to drink liquids

for the first time in years. He is now consuming 100% of his hydration orally and is hopeful that he will be able to eat solids at some point in the near future.



EAT NOW! Campaign Kicks Off Dysphagia Awareness Month

UC Davis CVS is initiating a 6-month campaign to raise \$1 million for swallowing research. To participate, send in a picture of yourself and the word **EAT** proudly displayed in the image. We will post the images on our website at <http://ucdvoice.org>. Join the movement of hope and make a difference. Email your image to eatnow@ucdvoice.org or tag with [#eatnow2015](https://twitter.com/eatnow2015) and contact Sharon Schauer to discuss ways to donate to the cause sschauer@ucdavis.edu.



EAT NOW!

JUNE IS DYSPHAGIA AWARENESS MONTH

On July 27, 2007, the 110th Congress led by U.S Representative from Tennessee Zachary Paul “Zach” Wamp introduced Resolution H.Con.Res. 195 which would establish a **National Dysphagia Awareness Month**. On September 27, 2008, the resolution passed and was agreed to in the Senate without amendment and with a preamble by

unanimous consent. **The resolution is printed in its entirety on Page 3 of this newsletter.** Please help us celebrate this astonishing accomplishment by raising dysphagia awareness and hope in your community. Our team is commemorating this month by hosting a regional dysphagia conference and by kicking off the **Eat Now!** Campaign (above).

CANCER SMELLS: CANINE SCENT DETECTION A REALITY

One in 3 people will be diagnosed with cancer at some point in their lifetime. One in 4 people will die from that cancer. Early detection is one of the best methods to reduce morbidity and prolong survival. Current screening methods for head and neck cancer are inadequate, and patients are often diagnosed at a late stage of disease.

Metabolic changes in cancer cells are reflected in the chemical composition of volatile organic compounds (VOCs) emanating from the body. These VOCs can be detected by highly sensitive gas chromatography and mass spectrometry. Recent evidence suggests that dogs are better equipped to detect

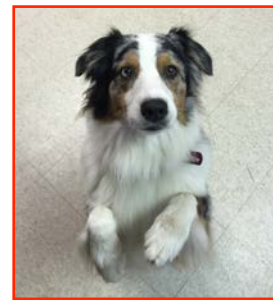
cancer-generated VOCs than the most advanced diagnostic equipment.

A dog's nose dominates their face and brain. The number of scent receptors in the canine brain is 225 million in comparison to only 5 million for humans. Recent evidence suggests that canines can detect lung, breast, thyroid, and prostate cancer with a high degree of sensitivity and specificity.

We have established a highly qualified team of human physicians, veterinarians, and animal behavior specialists. The UC Davis Department of Otolaryngology, led by Drs. Brodie, Farwell and Belafsky, is

partnering with UC Davis graduate and cancer scent detection specialist Dina Zaphiris to train canines in head and neck cancer scent detection.

The 2-year project hopes to save lives and transform the way that people are screened for head and neck cancer. Future patients at UC Davis may soon be greeted by a sniff and a wag as part of their comprehensive workup.



Meet cancer scent detection specialist, Stewie

DR. MAGGIE KUHN WINS THE FIRST EVER FEES PIE EATING CONTEST

Center for Voice and Swallowing Clinic Director, Dr. Maggie Kuhn, displayed her competitive eating prowess by winning the World's 1st endoscopic (FEES) pie eating contest. The event was held at the 10th Annual Advanced Practices in Voice and Dysphagia Conference at Bally's Hotel and Casino on February 22-24, 2015. The purpose of the competition was to raise awareness for the millions of dysphagia sufferers worldwide. Dr. Kuhn beat out a narrow international field that included Floridian Elizabeth Lottman and Englishman Yakubu Karagama. She consumed the majority of a double-crusted blueberry pie in just 5 minutes and was crowned the **FEES Pie-Eating Champion of the World**.



Dr. Kuhn with Contest Promoter Dave Godin, MD, and Competitive Endoscopic Pie Eating Judge Dr. Milan Amin.

Dr. Pedro Cabrera of Madrid, Spain won the Annual Laryngeal Karaoke Contest with his innovative endoscopic interpretation of *Dream On* by Aerosmith.



Dr. Cabrera with karaoke endoscopist Dr. Peter Belafsky and Masters of Ceremonies Dr. Blake Simpson.

H. Con. Res. 195

Agreed to September 27, 2008

One Hundred Tenth Congress of the United States of America

AT THE SECOND SESSION

*Begun and held at the City of Washington on Thursday,
the third day of January, two thousand and eight*

Whereas dysphagia, or difficulty with swallowing, is a medical dysfunction that affects as many as 15,000,000 Americans;

Whereas the Centers for Disease Control and Prevention has estimated that 1,000,000 people in the United States annually are diagnosed with dysphagia;

Whereas the Agency for Healthcare Research and Quality has estimated that 60,000 Americans die annually from complications associated with dysphagia;

Whereas based on Centers for Disease Control and Prevention mortality data, this is more than the total number of Americans dying from all forms of liver disease, kidney disease, and HIV/ AIDS combined—and nearly as many as those dying from diabetes, the number 6 killer of Americans;

Whereas the most common complication arising from dysphagia is aspiration pneumonia—caused by food or saliva entering the windpipe and into the lungs;

Whereas one in 17 people will develop some form of dysphagia in their lifetime, including 50 to 75 percent of stroke patients and 60 to 75 percent of patients who undergo radiation therapy for head and neck cancer;

Whereas as many as half of all Americans over 60 will experience dysphagia at some point;

Whereas complications due to dysphagia increase health care costs by resultant hospital readmissions, emergency room visits, extended hospital stays, the necessity for long-term institutional care, and the need for expensive respiratory and nutritional support;

Whereas the cost of managing a patient with a feeding tube, which for many has been the primary treatment option for this condition, is reported to average over \$31,000 per patient per year;

Whereas the total annual cost to Medicare just for enteral feeding supplies for outpatients was more than \$670,000,000 in 2003, nearly 6 percent of the total Medicare budget for that year;

Whereas including the monies spent in hospitals, the total cost of dysphagia to the health care system is well over \$1,000,000,000 annually;

Whereas the condition of dysphagia is a vastly underreported condition and not widely understood by the general public; and

Whereas observing June 2008 as National Dysphagia Awareness Month would raise public awareness about dysphagia and the need for early detection and treatment: Now, therefore, be it

Resolved by the House of Representatives (the Senate concurring), That it is the sense of the Congress that a National Dysphagia Awareness Month should be established.

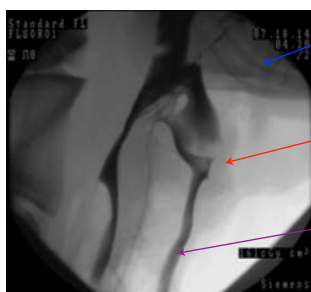
VALIDATION OF A SHEEP MODEL OF PROFOUND OROPHARYNGEAL DYSPHAGIA

Dysphagia is common and costly, with a high degree of morbidity and mortality. Although great advances have been made in the diagnosis of dysphagia over the past decades, little innovation in the treatment of swallowing disorders has occurred. In order for clinicians to develop and test new treatments, a validated surrogate model of profound oropharyngeal dysphagia is required. Our team, in partnership with surgeons Gregory Postma and Chris Johnson from Georgia Regents University, has developed a cadaveric ovine (sheep) model of profound oropharyngeal dysphagia to simulate the worst case human swallowing condition (death). The model was tested for reliability and compared to a

human cadaver model. The results confirmed the validity of the model and pave the way for intensive research on new treatments for dysphagia. The ease of availability, low cost, and reproducible results as confirmed in this study suggest that the ovine model has the potential to be an excellent template upon which surgical innovations may be evaluated.



Human Dysphagia Model



Ovine Dysphagia Model

Sheep mandible

Sheep larynx

Aspiration in trachea

“If we can make a cadaver consume barium without aspirating, we should be able to help people!”

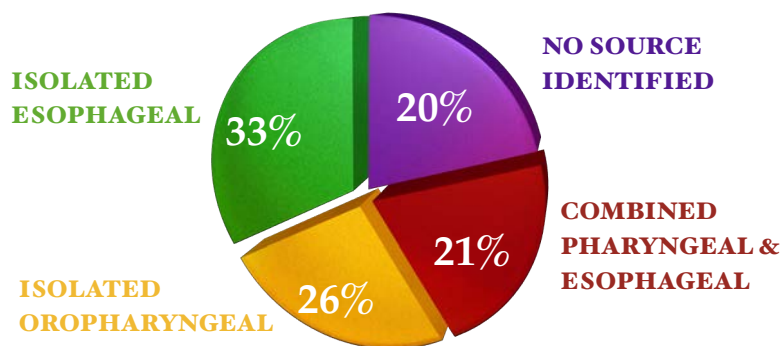
REGARDING DYSPHAGIA SYMPTOMS - PATIENTS CANNOT BE TRUSTED

Center for Voice and Swallowing researchers led by Drs. Brian Cervenka and Maggie Kuhn have evaluated an individual's ability to accurately identify the site of their dysphagia symptom. A comprehensive review of patients undergoing swallowing fluoroscopy revealed that only 26% of persons reporting cervical dysphagia correctly localized the site of their swallowing complaint. One-third of patients who reported that food gets stuck in the neck actually had an esophageal etiology for their swallowing dysfunction.

In comparison to the sensation of cervical dysphagia, persons localizing the site of obstruction to the chest were more accurate in their assessment. Although far from perfect, 66% of persons with a swallowing complaint below the sternal notch had an esophageal etiology to their swallowing dysfunction. This work was presented at the Annual Meeting of the American Bronchoesophagological Association (ABEA) in Boston this past April.

These data confirm that patients may inaccurately identify the site of abnormality, and a comprehensive evaluation of swallowing from lips to stomach is required in most persons with the symptom of dysphagia.

- Maggie Kuhn, MD



SITE OF SWALLOWING DYSFUNCTION IN PERSONS REPORTING CERVICAL DYSPHAGIA

UCD CENTER FOR VOICE AND SWALLOWING UNVEILS *SWALLOW FOR LIFE*TM PROGRAM

We all take eating and drinking for granted. Swallowing an average of two times per minute is effortless for most of us. For those suffering from dysphagia, however, life is dramatically altered, and for many, this is a life-long struggle. Our team has developed a comprehensive program for patients to maximize swallowing health for perpetuity.

*Swallow for Life*TM aims to preserve long-term safe and effective swallowing through dysphagia identification, appropriate intervention, routine follow-up and ongoing assessment. The program is individualized to meet a patient's individual impairments and needs.

For an individual dependent on a feeding tube, the goal may be to improve saliva management or safely increase to limited oral intake for pleasure. For others with mild impairment, the goal may be to ensure that the current level of function is preserved throughout their lifetime. Our team of physicians, speech-language pathologists, nurses and dietitians develops a personalized set of recommendations to address specific patient needs.

Regardless of the cause or severity of an individual's particular swallowing disorder, the core principles of *Swallow for Life*TM are maintained (see box).

CORE
SWALLOW FOR LIFETM
PRINCIPLES

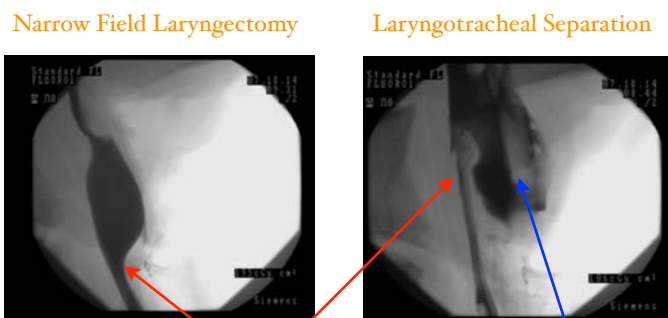
- IMMACULATE ORAL CARE
- COMPREHENSIVE HYDRATION ASSESSMENT AND PLAN
- COMPREHENSIVE NUTRITION ASSESSMENT AND PLAN
- COMPREHENSIVE DIET ASSESSMENT AND ALLOCATION
- PHYSICAL FITNESS & PULMONARY HEALTH ASSESSMENT AND PLAN
- COMPREHENSIVE ASSESSMENT OF PNEUMONIA RISK AND INITIATION OF PREVENTION STRATEGIES
- ONGOING EXERCISE
- SYSTEMATIC MONITORING

TOTAL LARYNGECTOMY IS SUPERIOR TO LARYNGOTRACHEAL SEPARATION

Profound oropharyngeal dysphagia can have devastating consequences. Complications include dehydration, malnutrition, social isolation, pneumonia, pulmonary abscess, and death. For patients who fail conservative treatment, surgical separation of the airway from the digestive tract may be a viable option. Two of the primary procedures to achieve this goal are laryngotracheal separation (LTS) and narrow field laryngectomy (NFL). These surgeries can completely eliminate the risk of aspiration pneumonia, and can restore swallowing ability and improve patient quality of life. Although we hypothesized that removal of the larynx results in improved swallowing outcomes, the benefits of NFL over LTS have not been previously evaluated.

In collaboration with Drs. Gregory Postma and Chris Johnson from Georgia Health Sciences University, UCD CVS researchers have shown that swallowing outcomes are superior after NFL. Our team evaluated swallowing outcomes after NFL and

LTS in an established animal model of profound dysphagia. Residue in the pharynx was 5-times less and opening of the upper esophageal sphincter was significantly greater in the NFL group, suggesting that swallowing is significantly better after NFL than after LTS. This work was presented at the Annual Meeting of the American Bronchoesophagological Association in Boston.



Improved UES opening with NFL

Airway residue in laryngeal vestibule after LTS



All of us have been impacted by dysphagia and its devastating consequences. Swallowing problems account for a large percentage of death in persons with ALS, Parkinson Disease, stroke, muscular dystrophy and head and neck cancer. We have dedicated our professional lives to improve the health and quality of life in persons affected by profound dysphagia. The status quo is not acceptable. We

must work together to do better. Through passion and innovation we will make a difference in the treatment of dysphagia in our lifetime. This is our mission.

Please join us in our **EAT NOW!** campaign. Send a picture of yourself with the letters **EAT** proudly displayed in the image to eatnow@ucdvoice.org or tag with [#eatnow2015](https://twitter.com/eatnow2015). Please send your *philanthropic donation payable to UC Regents to ...*

UC Davis
Center for Voice and Swallowing
Attn: Sharon Schauer
2521 Stockton Blvd #7200
Sacramento, CA 95817

Appointments

To schedule an appointment at the UC Davis Center for Voice and Swallowing please contact our CVS coordinator Traci Piazza at 916-734-8763 or tipiazza@ucdavis.edu.

Make a difference

We need your help. Much of our research is funded by philanthropic gifts from grateful patients. Your support will directly help the millions of individuals suffering from complex disorders of voice and swallowing worldwide. Join the movement of hope and help make a difference now. Please contact the Center for Voice and Swallowing Director of Development Sharon Schauer at 916-734-1053 or sschauer@ucdavis.edu.

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