Convenience & Expertise

Yes - location, location, location...
Yes - our fellowship trained ENT physicians are close to you...
Yes - we also have general ENT physicians at all these sites!

MUSC Health North Charleston
8992 University Blvd.
(adjacent to Charleston Southern University)

MUSC Health East Cooper
1600 Midtown Ave, Mt. Pleasant
(off Hungry Neck Blvd)

Hollings Cancer Center
Our NCI (National Cancer Institute) designated Cancer Center
86 Jonathan Lucas Street, downtown peninsula

Rutledge Tower
135 Rutledge Avenue
downtown peninsula

Continued on back page.
This report will focus on osseointegrated hearing devices. I will preface my comments with a general discussion on hearing loss, surgical procedures, and conventional hearing aids.

Hearing Loss

Hearing loss is broadly characterized as either Sensorineural Hearing Loss (SNHL) or Conductive Hearing Loss. Sensorineural hearing loss implies damage to the inner ear – the cochlea or the hearing nerve. This type of loss can have a variety of causes, including excessive noise, aging, certain diseases (i.e., Meniere’s disease), genetic disorders, infections (i.e., meningitis or a viral process), exposure to toxins, and tumors. SNHL is very common and, in fact, is the #2 most common disability in the United States.

Conductive hearing losses are those dealing with disorders or diseases of the ear canal or middle ear (eardrum or ear bones). Common examples of conductive hearing losses include a tympanic membrane perforation, damage to one or more of the ear bones from infection or cholesteatoma, and otosclerosis (fixation of the third ear bone – the stirrup).

Surgery for Hearing Loss

Conductive hearing losses are generally amenable to surgical correction. For example, a high degree of success is expected for repair of a hole in the eardrum. Likewise, the use of artificial ear bones made of titanium can produce excellent hearing outcomes. For severe to profound sensorineural hearing loss, cochlear implants are the treatment of choice. These devices are becoming more and more sophisticated and can be used in deaf children as early as 8 to 10 months of age. In such cases, the development of speech and language by age 4 or 5 years is almost indistinguishable from that of a normal hearing child.

Hearing Aids

When the sensorineural hearing loss is not severe to profound, hearing aids are an excellent choice. Many conductive hearing losses are amenable to the hearing aids as well.

One special circumstance of sensorineural hearing loss is a profound deficit just in one ear with normal or near normal hearing on the opposite side. In such individuals a CROS hearing aid may be of benefit. This device picks up the sound on the deaf side and transmits it to a hearing aid receiver in the good ear.

Osseointegrated Hearing Devices

An osseointegrated hearing device is an ideal choice for patients who 1) have a severe SNHL on just one side or 2) individuals with a conductive hearing loss who have difficulty wearing a conventional hearing aid on that side secondary to frequent drainage. Osseointegrated hearing devices use the body’s ability to conduct sound into the inner ear by way of bone conduction. If one were to tap on the side of the head or place a tuning fork on the skull, that sound is readily heard through the pathway of bone conduction. Osseointegrated hearing devices require a minor surgery to place a prosthesis beneath the skin and anchor it to the bone. There is a magnet in the prosthesis. The outer portion of the

(continued on next page)
Hearing aid purchasing can be overwhelming. There are dozens and dozens of hearing aid manufacturers. It may be difficult to decide which device works best for you. The first step involves a comprehensive hearing test. A licensed audiologist [health care professional who is trained to evaluate hearing loss, balance disorders, ringing in the ears (tinnitus) and to rehabilitate individuals with hearing loss and related disorders] should complete the hearing test. An audiologist has a minimum of a master’s degree. Most audiologists have a doctoral degree.

There are three levels of hearing aids. All levels look the same, are digital and are Bluetooth compatible. The entry-level is designed for a small group setting or the quiet of your own home (7-10 people in a room). The mid-level works well in a restaurant-type setting or a small party (20-25 people in a room). The premium-level will facilitate listening in a large group gathering (board room meeting, sporting event or place of worship). The level of hearing aid that is recommended will depend upon your lifestyle and where it is important for you to hear.

The day of dispensing the hearing instruments is very important. Real ear measurements will be completed. During this time a small microphone is placed into the ear canal and it rests close to the eardrum. The hearing aid is programmed based upon a prescription for your hearing loss. Computer adjustments are made to the hearing aid to match a target based upon your hearing loss and ear canal shape. By completing this, the audiologist will know exactly how the hearing aid is performing in your ear. A follow-up visit will be scheduled approximately two weeks after this initial dispensing appointment to monitor your progress.

The Division of Audiology offers a 60-day trial period for amplification. Contact our office at (843) 876-1308 to inquire on how the MUSC ENT Division of Audiology can help you!

We can help you with Hearing Aid Choices
Laura A. Droege, Au.D., CCC-A
Specialist in Audiology

Osseointegrated hearing device simply attaches magnetically over the skin to this implant. The processor transmits the sound through the skin into the implanted portion of the device, which then uses the bone conduction pathway to relay the sound to the inner ear.

In cases of a conductive hearing loss, that sound is relayed directly into the affected ear. In cases of a severe SNHL, that sound is conducted through the skull to the opposite ear. Thus, if someone had a severe loss of hearing in the right ear, the osseointegrated hearing device attached to that side would pick up whispered sounds in that ear and transmit them to the good side where they could be readily heard. The implanted osseointegrated hearing device requires a minor surgical procedure lasting about thirty minutes. The two devices currently being used are the Cochlear® Baha® Attract and the Sophono Alpha-2 System.

The implanted portion of the Baha® Attract and the Sophono is placed on the mastoid behind the ear. Thus, there is no device within the ear canal itself. In cases of chronic ear disease where drainage intermittently occurs, this type of device has great advantage. Osseointegrated hearing devices are quite distinct from cochlear implants. As noted above, cochlear implants are used for patients with severe to profound SNHL loss in each ear, not for conductive hearing losses or a profound loss of hearing just on one side.
What is a Clinical Trial?

Shaun A. Nguyen, M.D., M.A., CPI
Director, MUSC ENT Clinical Research

A clinical trial (also clinical research) is a research study in human volunteers to answer specific health questions. Carefully conducted clinical trials are the fastest and safest way to find treatments that work in people and ways to improve health. Intervventional trials determine whether experimental treatments or new ways of using known therapies are safe and effective under controlled environments. Observational trials address health issues in large groups of people or populations in natural settings.

What are the Benefits and Risks of Participating?

Benefits - Clinical trials that are well-designed and well-executed are the best approach for eligible participants to:
• Play an active role in their own health care
• Gain access to new research treatments before they are widely available
• Obtain expert medical care at leading health care facilities during the trial
• Help others by contributing to medical research

Risks - There are risks to clinical trials:
• There may be unpleasant, serious or even life-threatening side effects to experimental treatment.
• The experimental treatment may not be effective for the participant.
• The protocol may require more of their time and attention than would a non-protocol treatment, including trips to the study site, more treatments, hospital stays or complex dosage requirements.

How is the safety of the participant protected?
The ethical and legal codes that govern medical practice also apply to clinical trials. In addition, most clinical research is federally regulated with built-in safeguards to protect the participants. The trial follows a carefully controlled protocol, a study plan that details what researchers will do in the study. As a clinical trial progresses, researchers report the results of the trial at scientific meetings, to medical journals, and to various government agencies. Individual participants’ names remain private and are not mentioned in these reports.

In the Medical University of South Carolina Department of Otolaryngology – Head & Neck Surgery Shaun A. Nguyen, M.D., M.A., CPI is a Certified Physician Investigator (CPI) through the Academy of Clinical Research Professionals. Dr. Nguyen, the first CPI at MUSC, advances the research of pharmaceutical, biological, and medical device products by developing collaborations between the Department and the pharmaceutical industry. He collaborates with the Department faculty to obtain the latest clinical trials, so patients can gain access to new research treatments before they are widely available. Dr. Nguyen has served as PI, Co-PI, and Co-Investigator on more than 170 clinical trials involving Phases II, III, and IV. In addition, he is an expert on outcomes research, meta-analysis, and cost-effective analysis. Dr. Nguyen has authored more than 120+ abstracts and 80+ peer reviewed articles in otolaryngology.

Highlighted MUSC ENT Clinical Trials

The ENT Division of Clinical Research conducts all phases of clinical research, (phases I, II, III, and phase IV studies), and has a strong emphasis on pharmaceutically sponsored investigator-initiated protocols.

We are currently recruiting participants for the following clinical studies. Each study has age and other requirements and certain clinical exclusions. One advantage of participation is that subjects receive treatment that is free of charge and confidential. Some studies even provide compensation to participants.

Treatment of Tinnitus
Paul Lambert, M.D., Ted Meyer, M.D., Ph.D.,
Shaun Nguyen, M.D.

Treatment of Meniere’s Disease
Paul Lambert, M.D., Ted Meyer, M.D., Ph.D.,
Shaun Nguyen, M.D.

Treatment of Chronic Sinusitis in Children
Rodney Schlosser, M.D., Zachary Soler, M.D.,
Shaun Nguyen, M.D.

Treatment of Obstructive Sleep Apnea
M. Boyd Gillespie, M.D., Shaun Nguyen, M.D.,
Alex Murphey, M.D.

If you are interested in participating in any of these studies, please call Taylor Jones (843) 876-8422.
Obstructive sleep apnea (OSA) is a common disorder that causes loud snoring, daytime sleepiness, sleep disturbance, impaired quality of life, and an increased risk of heart disease and car accidents. Many patients with OSA have upper airway muscles that become too relaxed during sleep, and therefore fail to keep the airway open. Repeated closure of the airway during sleep causes a decrease in blood oxygen that can lead to high blood pressure, heart arrhythmia, and daytime sleepiness and memory problems. Currently, the first line therapy for OSA is continuous positive airway pressure (CPAP) which forces pressurized air into the nose and throat in order to open the collapsing tissues. However, the effectiveness of CPAP is limited by poor patient acceptance with only 50% of patients continuing the therapy over the long-term.

The idea of stimulating the upper airway muscles to stay open during sleep has been around for more than twenty years. However, only recently has the technology been developed to allow this to be successfully performed. The Inspire Upper Airway Stimulation System (Inspire Medical Systems, Minneapolis, MN, USA) is a small pacemaker-like device inserted under the skin of the chest that has an electrode that connects to one of the major nerves that controls the upper airway muscles. The patient has a hand held remote control that is used to activate the device prior to sleep. A recent study published in the prestigious New England Journal of Medicine found that the Inspire Upper Airway Stimulation System (Inspire Medical Systems, Minneapolis, MN, USA) demonstrated a 68% reduction in sleep apnea severity, and an 85% reduction in bothersome snoring. Approximately 85% of the 126 patients implanted with the device continue to use it nightly as their main form of sleep apnea treatment. The surgery and the device had an excellent safety record and received full FDA approval in April 2014.

The MUSC Department of Otolaryngology-Head & Neck Surgery currently offers the Inspire Upper Airway Stimulation device to qualified patients with OSA. M. Boyd Gillespie, M.D., Director of the MUSC Snoring Clinic, was an author on the New England Journal of Medicine study and successfully implanted six patients at MUSC as part of the research trial. Dr. Gillespie reports, “All of the patients continue to use the device and find that it works better for them than CPAP.” Dr. Gillespie notes that the device works best in patients with moderate to severe sleep apnea who have tried and failed CPAP and who are not overly obese (BMI < 32 kg/m2).

Dr. Gillespie sees patients at three convenient locations in downtown Charleston, Mount Pleasant, and North Charleston. For an appointment with Dr. Gillespie, please call (843) 792-3531.

Reference:

Fully Implantable Inspire System
1. Stimulation lead: placed around the hypoglossal nerve
2. Implantable Pulse Generator: subcutaneous pocket common to pacemakers and neurostimulators
3. Respiratory sensing lead: inserted between intercostal muscle layers
Recent satisfaction surveys reveal that our ENT doctors consistently provide the professional quality health care that patients come to expect.

Our ENT physicians have been fellowship trained through some of the very best programs in the country and limit their individual practices to:

- Facial Plastic Surgery
- Oncology (Tumors of the head and neck)
- Otology (Ear disorders)
- Pediatric ENT
- Rhinology (Sinus and allergy disorders)
- Laryngology (Voice and swallowing)

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Whether your health needs are routine or complex, you can be assured of receiving exceptional, timely care in one of our four offices. For appointment scheduling, please call 843-792-3531.

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