



Staff of the SIU Voice Clinic discuss a patient case. From left, speech therapist Heidi Hochstetler, Kathy Ashenfelter, R.N., otolaryngology resident Kevin Gilbert, M.D., and professor and chair of the Division of Otolaryngology, Gayle Woodson, M.D.



TEAM VOICE

Weekly Voice Clinic gets people talking

Written by Karen Carlson • Photography by James Hawker

“The voice is like any other muscle,” says Gayle Woodson, M.D. “If you don’t use it, you’ll lose it.” She stretches her arms out to her sides and in a graceful curve, brings her hands together to show how normal vocal cords work. The larynx, also known as the voice box, is really quite lovely and graceful, with folds of skin working together in harmony, flapping out and in like butterfly wings. Underneath the delicate exterior lies the strong muscle, and together the muscle and skin folds vibrate to create the voice. “The shape of the throat, the facial bones, they all influence the voice,” says Dr. Woodson, professor and chair, Division of Otolaryngology and Head and Neck Surgery.

Many of us may take the voice for granted, not appreciating it until a cold or flu holds our cords hostage for a week or an afternoon of cheering at a basketball game leaves us hoarse for a couple of days.

While these are relatively minor inconveniences, some people suffer weak, raspy, unintelligible speech for months or even years, influenced by the complexities of head and neck biology as well as other physical and neurologic conditions. In the SIU School of Medicine service area, these patients have found their way to the SIU Voice Clinic, led by Dr. Woodson, which has helped thousands of patients since its inception in 2003.

Focusing on the voice and vocal problems in this weekly clinic, Dr. Woodson and Sandra Ettema, M.D., Ph.D., assistant professor in the Division of Otolaryngology and Head and Neck Surgery, see a variety of problems along with speech pathologist Heidi Hochstetler. All have been trained in voice disorders.

In simplest terms, these physicians and staff are helping patients with the most important aspects of living: speaking, swallowing and breathing. A complex medley of conditions can dramatically impact the voice. Dr. Ettema, a former speech pathologist and Ph.D., describes the effect the voice box has on the rest of the upper airway. “Your voice box is connected to the back of your throat, which is connected to your nose, and the back of your nose connects to your middle ear. All of this affects the ear, sinuses and throat.”

Patients have come from as far away as Hawaii and Belgium to the Friday clinic, which sees mostly adult patients. For some, their voice is their career: vocalists, actors, attorneys, and coaches. Other patients are retirees with neurologic problems or cheerleaders with callused vocal cords who still yearn to be serious singers. Patients with head injuries, stroke victims, or head and neck cancer survivors can all have voice or swallowing problems. Vocal abuse and overuse syndromes, recurrent laryngitis, an aging voice, severe swallowing

problems and cancers — the SIU Voice Center treats it all.

“You all have been very nice,” says one pleased Voice Clinic patient, motioning to the crew assembled in the exam room in the St. John’s Pavilion. An elderly man, he’s in good humor, speaking as best he can with a soft half-voice that sounds like he’s talking under water. He also has difficulty swallowing. Despite initial improvement after injections of Botox, he is still having problems. Outside the exam room, the team gathers around the computer monitor, discussing his case.

“We like working as a team,” Dr. Woodson says. “We get a lot more done.” Indeed, the team works quickly, efficiently, and with positive spirits. Otolaryngology resident Kevin Gilbert, M.D., does the initial exam and confers with Dr. Woodson, who then listens carefully to the patient describe his condition. Dr. Woodson and Dr. Ettema also do a complete physical exam of the throat and larynx. Dr. Woodson ushers Dr. Gilbert through a voice analysis and they, along with Hochstetler and nurse Kathy Ashenfelter, R.N., confer about the man’s condition and then discuss options with him.

The multidisciplinary team approach of Dr. Woodson’s weekly voice clinic streamlines treatment for patients, saving patients time, helping avoid duplicate exams and tests, and ultimately leading to more efficient diagnoses and treatments.

Nurses Kathy Ashenfelter, center, and Cindy Shelton, right, record the voice of music teacher Racheal Thurman.



“Together, we can all talk and brainstorm what’s best for the patient,” says Dr. Woodson.

“And it’s an effective way to teach residents.” The team also is pursuing research in laryngeal paralysis and vocal cord scarring.

The SIU Voice Clinic in Springfield has expanded since Dr. Woodson first started it six years ago, going from a once-a-month clinic to every Friday. A waiting list of patients stretches three to four months. Dr. Woodson previously set up voice clinics at the University of California-San Diego School of Medicine and the University of Tennessee in Memphis. “A clinic like this allows us to focus specifically on the voice for a day, which makes it more effective to have protocols.”

With state-of-the-art equipment, the SIU Voice Clinic offers the best diagnostic tools for patients, including a flexible, fiber-optic endoscope, which allows picture and video records of the patient’s voice box for evaluation. “We can evaluate people using a standard mirror, but we get a much better examination with this scope,” says Dr. Ettema. The scope goes through the nose instead of the mouth, which eliminates gagging and allows the patient to speak, cough, and swallow during the exam. The physicians can test sensations and vibrations of the vocal folds to help diagnosis the problem. “We can see the anatomy function while we’re looking at it,” Dr. Ettema explains. “I can tell by the vibration of the vocal fold what’s happening earlier rather than later.”

Another innovative instrument used to determine vocal problems is a stroboscopy, which uses a strobe light to show the frequency of patient’s vocal tone. “The stroboscopy allows us to see the vocal folds in slow motion and see the vibration pattern,” Dr. Ettema says.

A swallow evaluation also can help the physicians understand vocal disorders. Hoarseness, paralyzed vocal cords, scratchiness, tired voice — those could be caused by acid reflux. Dr. Ettema explains: “Reflux can exacerbate sinus problems, middle ear problems, hoarseness or voice problems, as well as asthma.” Neurologic problems also can affect a voice.

The vibration pattern of the voice box is critical for physicians to understand the problem. A



Dr. Ettema was a speech pathologist before becoming an otolaryngologist and surgeon.

At the SIU Voice Clinic, the physicians and staff are helping patients with the most vital aspects of living: speaking, swallowing, and breathing.

woman's voice will vibrate at 220 times per second; a child's 300 times per second. Seeing the wave of the vocal fold helps identify if there is a lesion or a neurologic problem or if their vocal folds are off-level as the result of surgical complications, for example. "The equipment allows us to see small details like that which may be affecting their voice," Dr. Ettema says.

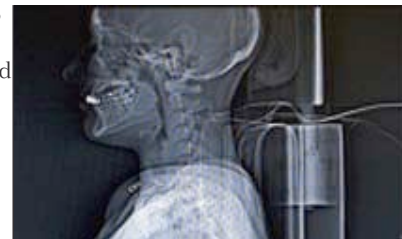
Music teacher Racheal Thurman visited the clinic for a raspy voice that had been plaguing her for months. "I can't sing in the upper register like I used to," she says. Ashenfelter and Hochstetler make a video and audio recording of the young teacher's voice for further analysis.

For patients diagnosed with paralysis of the vocal cords, Botox therapy is an effective treatment, a therapy Dr. Woodson pioneered in Houston in 1985. She and her colleagues published the first case for the therapy for a diagnosis called spasmodic dysphonia, involuntary spasms of the voice box, where the vocal cords tighten up. The result is a strained voice, where a person sounds like he is being strangled. It's an extremely disabling disorder, says Dr. Woodson, who has extensively researched and published on this disorder. A patient might try to say "puppy" and it would come out "puuhhhh." Someone with this disorder

saying, "I eat eggs every day" would choke at each word starting with a vowel. Spasmodic dysphonia formerly was considered a psychiatric disorder before a neurological basis for the diagnosis was found. The cause is unknown, with no cure, but treatments can improve symptoms.

In the past, the primary treatment was to cut the nerve to the voice box to loosen things up. It worked well in only 30 percent of patients. Many others had a recurrence of the condition and lived with side effects that included sometimes severe breathiness and aspiration.

In the mid 1980s, Dr. Woodson pioneered Botox therapy for spasmodic dysphonia. "I thought if we could temporarily paralyze the nerve, we could see if they had a good result before we cut the nerve." She experimented with botulinum toxin (Botox), and it worked. "We found out you didn't have to completely paralyze the nerve to make the voice better, you just had to weaken it a little bit." Botox injections, administered in units smaller than micrograms, temporarily paralyze the nerve, and Dr. Woodson found the repeatable treatment can improve the symptoms for about five



Caring for your instrument

The voice, Dr. Woodson says, is like a musical instrument, and like all instruments, it must be cared for properly. Poor breath support, tension in jaw or neck, misusing the voice in a “hard glottal attack,” speaking in an incorrect register, shouting at a football game or cheering at a concert are all ways people abuse their voice. Even something seemingly harmless — throat clearing — is like rubbing sand paper on the vocal cords, according to Dr. Woodson. Dirty, smoggy air also harms the voice. Got a bad cold with a rough cough and lots of nasal drainage? Your vocal cords may get bruised.

So how can people protect their voices? Drs. Woodson and Ettema share their advice:

- Don't try to talk in a noisy environment
 - Speak in phrases, not paragraphs
 - Increase your water intake
 - Use a humidifier
 - Rest the voice when you can
 - Don't mumble
 - Make sure you have breath support in the abdominals
 - Avoid smoking, alcohol and caffeine, which dry out the upper airway
- For patients with reflux:
- Don't eat two hours before bed
 - Eat smaller, more frequent meals
 - Stay upright for a while after eating

months with few, if any, side effects.

Dozens of SIU Voice Clinic patients have successfully had this treatment, and today it is the preferred treatment for spasmodic dysphonia. Other voice conditions also find relief with Botox: people with vocal tremors and vocal ulcers, men with “mutational falsetto,” a persistent high-pitched voice following puberty, and tired, over-used voices.

“I was surprised at the different things Dr. Woodson has going on,” says second-year surgical resident Dr. Gilbert, who worked at the clinic last autumn as part of his otolaryngology rotation. “There’s much more activity here than I thought there would be.”

At the clinic, Dr. Woodson takes her time, talking with her patients and dropping an anecdote or two about her own experience in residency, or perhaps

making a joke or chatting about the current economy.

“Hum for me,” she says to an elderly female patient, whose weak, high-pitched voice struggles to come out. With one vocal cord not working, humming is a tough task. “Inadequate breath support can impact how a person speaks,” Dr. Woodson explains.

For patients like this, Hochstetler recommends various breath exercises. “Hold the tone for as long as you can.” She demonstrates in a high

pitch. “Heeeeeee.” Other exercises include varying a pitch from high tones to low tones. Done multiple times a day, these exercises strengthen and train the abdominal muscles to provide better support for the muscles used for the voice. Usually three or four speech sessions are helpful.

Hochstetler also recommends an innovative tool new to treat voice problems, called Power-Breathe®. “It’s usually used with athletes to help them improve their breathing,” she says. “We think it could make a difference for our patients.” The device, which looks similar to an inhaler, uses the principles of resistance training to exercise the lungs and diaphragm; it’s like letting your lungs lift weights.

These are just some of the options available for patients at the SIU Voice Clinic. For the SIU physicians, the SIU Voice Clinic has created, as Dr. Ettema describes, “a family of patients” and an attractive mix of medicine and surgery, while keeping the focus one day a week on a person’s prized instrument: the voice. ●●●



Hochstetler shows a patient voice exercises.