Hearing Health and Wellness

Noise Induced Hearing Loss (NIHL)

The information in this document is generic and advisory in nature.
It is not a substitute for professional, medical judgments. It should not be used as a basis for medical treatment. If you are concerned about your hearing or think you may have suffered hearing loss, consult a licensed medical professional.

Part of the role of any professional is to remain in the best condition to practice the profession. As an aspiring musician, this involves safeguarding your hearing health. Whatever your plans after graduation whether they involve playing, teaching, engineering, or simply enjoying music you owe it to yourself and your fellow musicians to do all you can to protect your hearing. If you are serious about pursuing a career in music, you need to protect your hearing. The way you hear music, the way you recognize and differentiate pitch, the way you play music; all are directly connected to your hearing.

In the scientific world, all types of sound, including music, are regularly categorized as noise. A sound that is too loud, or too loud for too long, is dangerous to hearing health, no matter what kind of sound it is or whether we call it noise, music, or something else. Music itself is not the issue. Loudness and its duration are the issues.

Music plays an important part in hearing health, but hearing health is far larger than music. We experience sound in our environment, such as the sounds from television and radio, household appliances, and traffic. Normally, we hear these sounds at safe levels that do not affect our hearing. However, when we are exposed to harmful noise sounds that are too loud or loud sounds that last a long time, sensitive structures in our inner ear can be damaged, causing noise induced hearing loss (NIHL). These sensitive structures, called hair cells, are small sensory cells that convert sound energy into electrical signals that travel to the brain. Once damaged, our hair cells cannot grow back. NIHL can be caused by a one-time exposure to an intense "impulse" sound, such as an explosion, or by continuous exposure to loud sounds over an extended period of time. The humming of a refrigerator is 45 decibels, normal conversation is approximately 60 decibels, and the noise from heavy city traffic can reach 85 decibels. Sources of noise that can cause NIHL include motorcycles, firecrackers, and small firearms, all emitting sounds from 120 to 150 decibels. Long or repeated exposure to sounds at or above 85 decibels can cause hearing loss. The louder the sound, the shorter the time period before NIHL can occur. Sounds of less than 75 decibels, even after long exposure, are unlikely to cause hearing loss.

Although being aware of decibel levels is an important factor in protecting one's

hearing, distance from the source of the sound and duration of exposure to the sound are equally important. A good rule of thumb is to avoid noises that are "too loud" and "too close" or that last "too long." It is very important to understand that the hair cells in your inner ear cannot regenerate. Damage done to them is permanent. There is no way to repair or undo this damage.

According to the American Academy of Audiology, approximately 26 million Americans have hearing loss. One in three developed their hearing loss as a result of exposure to noise.

As you pursue your day-to-day activities, in the Katzen Arts Center and in other educational, vocational, and recreational environments, remember:

1. Hearing health is essential to your lifelong success as a musician.

2. Your hearing can be permanently damaged by loud sounds, including music. Technically, this is called Noise Induced Hearing Loss (NIHL). This danger is constant.

3. Noise induced hearing loss is generally preventable. You must avoid over exposure to loud sounds, especially for long periods of time

4. The closer you are to the source of a loud sound, the greater the risk of damage.

5. Sounds over 85 dB (your typical vacuum cleaner) in intensity pose the greatest risk to your hearing

6. Recommended maximum daily exposure times to sounds at or above 85 dB are as follows:
8 hours- 85 dB (vacuum cleaner, MP3 player at 1/3 volume)
2 hours- 90 dB (blender, hair dryer)
1 hour- 94 dB (MP3 player at 1/2 volume)
15 minutes- 100 dB (MP3 player at full volume, lawn mower)
2 minutes- 110 dB (rock concert, power tools)
almost immediate- 120 dB (jet planes at take off) without ear protection

7. Certain behaviors (controlling volume levels in practice and rehearsal, planning rehearsal order to provide relief from high volume works, avoiding noisy environments) reduce your risk of hearing loss.

8. The use of ear plugs helps to protect your hearing health.

9. Day-to-day decisions can impact your hearing health, both now and in

the future. Since sound exposure occurs in and out of the School of Music, you also need to learn more and take care of your own hearing health on a daily, even hourly basis.

10. If you are concerned about your personal hearing health, talk with a medical professional.

11. If you are concerned about your hearing health in relationship to your study of music at American University, consult with your professor, applied instructor, ensemble conductor, or advisor.

Further Resource:
Klickstein, Gerald. The Musician's Way: A Guide to Practice, Performance, and Wellness (Oxford, 2009)
http://www.musi
ciansway.com

Statement on Health and Safety

American University, as required by the National Association of Schools of Music, is obligated to inform students and faculty of health and safety issues, hazards, and procedures inherent in practice, performance, teaching, and listening both in general and as applicable to their specific specializations. This includes, but is not limited to, information regarding hearing, vocal and musculoskeletal health, injury prevention, and the use, proper handling, and operation of potentially dangerous materials, equipment, and technology.

American University has developed policies, protocols, and operational procedures to guard against injury and illness in the study and practice of music, as well as to raise the awareness among our students and faculty of the connections between musicians' health, the suitability and safety of equipment and technology, and the acoustic and other health-related conditions in the University's practice, rehearsal, and performance facilities.

It is important to note that health and safety depends largely on personal decisions made by informed individuals. American University has health and safety responsibilities, but fulfillment of these responsibilities cannot and will not ensure any individual's health and safety. Too many factors beyond the university's control are involved.

Each individual is personally responsible for avoiding risk and preventing injuries

to themselves before, during, and after study.

Anyone who practices, rehearses or performs instrumental or vocal music has the potential to suffer injury related to that activity. Instrumental musicians are at risk for repetitive motion injuries. Sizable percentages of them develop physical problems related to playing their instruments; and if they are also computer users, their risks are compounded. Instrumental injuries often include carpal tunnel syndrome, tendinitis, and bursitis. Incorrect posture, non-ergonomic technique, excessive force, overuse, stress, and insufficient rest contribute to chronic injuries that can cause great pain, disability, and the end of careers.

What Instrumentalists Should Do

1. Maintain good general health. Get adequate rest to minimize fatigue.

2. Exercise regularly.

3. Eat a balanced diet. Include vegetables, fruit and whole grains, and avoid/limit caffeinated drinks (coffee, tea, and soft drinks) and alcohol.
Avoid spicy, acidic, and dairy foods if you are sensitive to them.

4. Maintain body hydration; drink two quarts of water daily.

5. Evaluate your technique. Reduce force, keep joints in the middle of their range of motion, use large muscle groups when possible, and avoid fixed, tense positions.

6. Always warm up. As an athlete would not begin a vigorous physical activity without warming up, a musician must warm up carefully before practice or performance.

7. Take breaks to stretch and relax. Take short breaks every few minutes and longer breaks each hour. Two or more shorter rehearsals each day are more productive than marathon single sessions. Even in performance, find opportunities to relax a hand, arm, or embouchure to restore circulation.

8. Pace yourself. “No pain, no gain” is a potentially catastrophic philosophy for a musician. Know when enough is enough, and learn to say “no” to certain performances or lengths of performing that might result in injury.

9. Check out your instrument. Does your instrument place undue stress on your body? Is your instrument set up optimally for you to relieve pressure on hands, joints, etc.? Is there a strap, carrier, or stand available to relieve the stress?

10. Evaluate other activities. Pains and injuries affecting your music making could be caused by other activities in your daily life. Computer use is notorious for causing afflictions including carpal tunnel syndrome and tendinitis.

11. Pay attention to your body. Pain is the mechanism by which your body tells you that something is wrong. Listen to your body; if it hurts, stop what you are doing.

12. Get medical attention. Do not delay in seeing a doctor. A physician may prescribe a minor adjustment or, in worst-case scenarios, stipulate not performing for a period of time. As drastic as this may sound, a few months of rest is better than suffering a permanent, career-ending injury.

What Vocalists Should Do

1. Maintain good general health. Get adequate rest to minimize fatigue. If you do become ill, avoid "talking over your laryngitis" -see your physician and rest your voice

2. Exercise regularly.

3. Eat a balanced diet. Include vegetables, fruit and whole grains, and avoid/limit caffeinated drinks (coffee, tea, and soft drinks) and alcohol. Avoid spicy, acidic, and dairy foods if you are sensitive to them.

4. Maintain body hydration; drink two quarts of water daily.

5. Avoid dry, artificial interior climates. Using a humidifier at night might compensate for the dryness.

6. Limit the use of your voice. High ceilinged restaurants, noisy parties, cars and planes are especially damaging to the voice. If necessary, use amplification for vocal projection.

7. Avoid throat clearing and voiced coughing.

8. Stop yelling, and avoid hard vocal attacks on initial vowel words.

9. Speak in phrases rather than in paragraphs. Breath slightly before each phrase.

10. Reduce demands on your voice -don't do all the talking!

11. Learn to breathe silently to activate your breath support muscles and reduce neck tension.

12. Take full advantage of the two free elements of vocal fold healing: water and air.

13. Vocal athletes must treat their musculoskeletal system as do other types of athletes; therefore, vocal warm-ups should always be used prior to singing. Vocal cool-downs are also essential to keep the singing voice healthy.

WHAT CAN YOU ADD TO THE LIST?