

Florida Atlantic University
Dorothy F. Schmidt College of Arts and Letters
Department of Music

**HEALTH AND SAFETY INFORMATION AND RECOMMENDATIONS FOR
STUDENT MUSICIANS**

Introduction

The Department of Music at Florida Atlantic 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 to music, 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.

The Department of Music 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 Department's practice, rehearsal, and performance facilities.

It is important to note that health and safety depends largely on personal decisions made by informed individuals. Florida Atlantic 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 or employment in the Department of Music at Florida Atlantic University. The policies, protocols, and operational procedures developed by the Department of Music do not alter or cancel any individual's personal responsibility, or in any way shift personal responsibility for the results of any individual's personal decisions or actions in any instance or over time to the University.

Performance Injuries

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, with injuries for instrumentalists accounting for a large percentage of all reported injuries, including non-music use. Injuries suffered by instrumental musicians may include carpal tunnel syndrome or other nerve compression injuries, tendinitis, bursitis, or dystonia. Vocal musicians are at risk of laryngitis, vocal nodes or other serious vocal apparatus injuries. Incorrect posture, non-ergonomic technique, excessive force, overuse, performing or rehearsing under stress, and insufficient rest contribute to chronic injuries that can cause pain and or permanent disability which may impede or end a person's abilities to pursue a music career.

What Instrumentalists Should Do

A number of resources provide guidelines for healthy instrumental practice and performance. Included below are basic steps towards healthy performance and practice techniques. Students should work directly with their teachers to identify and create a program of practice that works specifically to their individual needs and performance specialty:

1. **Evaluate your technique.** Work with your teacher to identify and correct areas of tension in muscles, practice with proper alignment of body, back, shoulders and extremities; embouchure, breath production, instrument hold should be evaluated frequently to stop the formation of bad habits.
2. **Always warm up.** Start practice with physical stretching exercises and/or performance techniques that are low-impact. Always warm up and practice with full attention and awareness of the body during this

phase of practice.

3. **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. Work with your teacher to develop tension-release techniques, such as those employed through Alexander Technique or other methods. During performance, plan opportunities to relax a hand, arm, or embouchure in order to restore circulation.

4. **Pace yourself.** Establish a pattern of practice that builds endurance, allowing you to perform without pain, weakness of muscles or lack of breath. Consistent and careful practice develops muscle tone and breathe support. Lack of consistent practice makes you out of shape and prone to serious injury.

5. **Check out your instrument.** Instruments that are not properly maintained put undue stress on the body. Work with your teacher to evaluate your instrument's set-up, strings, reeds, bow-hair, mouthpieces, to make sure that they are regulated/installed/fit to professional standards. Work with your teacher to identify additional equipment that fits your instrument to your physique, such as stands, straps, chin or shoulder rests, or mouth pieces.

6. **Evaluate other activities.** Pain and injuries affecting your music making could be caused by other activities in your daily life. Computer use, texting and use of other electronic devices can cause carpal tunnel syndrome and tendinitis. Lifting weights may cause compression injuries. Check any physical activities with your teacher to determine if your activity may have a negative impact on your performance area.

7. **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, immediately stop what you are doing and report your symptoms to your teacher. Your teacher will recommend the appropriate response to pain, including recommendation to visit a doctor or specialist.

8. **Get medical attention.** If pain persists beyond a few hours or days, SEE YOUR DOCTOR. Injuries that result in pain are serious, and often are the result of long-term damage or an acute reaction to a sudden injury. Any pain that occurs during practice or performance **MUST BE INVESTIGATED BY A MEDICAL PROFESSIONAL.** Apprise your teacher of any doctor's orders, and bring medical documentation to lessons and the Department of Music for your file

What Singers Should Do

The Department of Music wishes to thank The Singer's Resource, the Texas Voice Center, Houston, and the University of Michigan Vocal Health Center for the following information:

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.** Including vegetables, fruit and whole grains, and avoid 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. **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.
6. **Avoid throat clearing and voiced coughing.**
7. **Stop yelling, and avoid hard vocal attacks on initial vowel words.**
8. **Adjust the speaking pitch level of your voice.** Use the pitch level in the same range where you say, "Umm-hmm?"
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.

Noise-Induced Hearing Loss

By the nature of our profession and performance environments, musicians are especially susceptible to hearing damage or hearing loss. The Department of Music at Florida Atlantic University has instituted a noise mitigation program that includes an annual presentation regarding hearing health and safety by Dr. Ali A. Danesh, Ph.D., CCC-A. Dr. Danesh holds a joint appointment at Florida Atlantic University as Associate Professor in the Department of Communication Sciences and Disorders and is Associate Professor of Biomedical Sciences in the Charles E. Schmidt College of Science. He has assisted the Department of Music in developing our policies regarding hearing health, and his research in the field has provided the Department with valuable information regarding hearing health safety.

Musicians must be aware that damage to the auditory system is irreparable. Any number of activities can damage hearing, including the use of loud amplification, use of headphones at high volume levels and performance of instruments in confined spaces, such as practice rooms.

The Department of Music has posted warning signs in all classrooms, practice rooms and production/recording studios advising students to “turn it down”. Some students are issued over-the-counter “musician’s” earplugs for their rehearsal rooms, which mitigate some dangerous volume levels.

OSHA (Occupational Safety and Health Association) describes the primary effects of excessive noise exposure as follows:

- **Acoustic trauma** refers to a temporary or permanent hearing loss due to a sudden, intense acoustic or noise event, such as an explosion.
- **Tinnitus** describes the condition of "ringing in the ears."
 - Individuals often describe the sound as a hum, buzz, roar, ring, or whistle.
 - The inner ear or neural system produces the actual sound.
 - The predominant cause of tinnitus is long-term exposure to high sound levels, though it can also be caused by short-term exposure to very high sound levels, such as gunshots. Non-acoustic events, such as a blow to the head, dietary issues, stress, jaw joint disorders, debris on the eardrum, or prolonged use of aspirin may also cause tinnitus.
 - Many people experience tinnitus during their lives. Most of the time the sensation is only temporary, however, it can be permanent and debilitating.
 - Diagnosis and treatment of tinnitus can be difficult because it is a subjective measurement.
- **A noise-induced temporary threshold shift (NITTS)** is a temporary loss in hearing sensitivity. NITTS may be the result of:
 - The acoustic reflex of the stapedial muscle.
 - Short-term exposure to noise.
 - Fatigue of the inner ear.

With NITTS, hearing sensitivity will return to the pre-exposed level in a matter of hours or days, assuming that there is not continued exposure to excessive noise.

- **A noise-induced permanent threshold shift (NIPTS)** is a permanent loss in hearing sensitivity due to the destruction of sensory cells in the inner ear. This damage can be caused by:
 - Long-term exposure to noise.
 - Acoustic trauma.

OSHA standards for acceptable levels of noise are outlined in the table below:

1910.95(b)(2)

If the variations in noise level involve maxima at intervals of 1 second or less, it is to be considered continuous.

TABLE G-16 - PERMISSIBLE NOISE EXPOSURES (1)

| Duration per day, hours | Sound level dBA slow response |
|-------------------------|-------------------------------|
| 8..... | 90 |
| 6..... | 92 |
| 4..... | 95 |
| 3..... | 97 |
| 2..... | 100 |
| 1 1/2 | 102 |
| 1..... | 105 |
| 1/2 | 110 |
| 1/4 or less..... | 115 |

Footnote(1) When the daily noise exposure is composed of two or more periods of noise exposure of different levels, their combined effect should be considered, rather than the individual effect of each. If the sum of the following fractions: $C(1)/T(1) + C(2)/T(2) + C(n)/T(n)$ exceeds unity, then, the mixed exposure should be considered to exceed the limit value. Cn indicates the total time of exposure at a specified noise level, and Tn indicates the total time of exposure permitted at that level. Exposure to impulsive or impact noise should not exceed 140 dB peak sound pressure level.

1. Hearing health is essential to your lifelong success as a musician.
2. Your hearing can be permanently damaged by loud sounds, including music. This is called Noise-Induced Hearing Loss (NIHL).
3. Noise-induced hearing loss is generally preventable. You must avoid overexposure to loud sounds, especially for long periods of time.
4. The Occupational Safety and Health Administration (OSHA) has provided guidelines for hearing safety on a scale that measures decibel levels against length of exposure at those levels. The following description gives students a simple comparison to everyday sounds:
 - a. 85 dB (vacuum cleaner, MP3 player at 1/3 volume) - 8 hours
 - b. 90 dB (blender, hair dryer) - 2 hours
 - c. 94 dB (MP3 player at 1/2 volume) - 1 hour
 - d. 100 dB (MP3 player at full volume, lawnmower) - 15 minutes
 - e. 110 dB (rock concert, power tools) - 2 minutes
 - f. 120 dB (jet planes at take-off).
5. 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.
6. The use of earplugs helps to protect your hearing health. Students can purchase over-the-counter versions cheaply, which provide some protection, such as those developed by Etymotic, Sensaphonic, etc. Custom earplugs provide the safest protection.
7. If you are concerned about your hearing health in relationship to your study of music at FAU, consult with your applied instructor, ensemble conductor, advisor, or Department Chair.

Resources - Information and Research Hearing Health Project Partners

National Association of School of Music (NASM) <http://nasm.arts-accredit.org/>
 Performing Arts Medicine Association (PAMA) <http://www.artsmed.org/index.html>
 International Journal of Audiology *Schools of Music and Conservatories and Hearing Loss Prevention*, Kris Chesky
<http://informahealthcare.com/doi/abs/10.3109/14992027.2010.540583?journalCode=ija>
 Occupational Safety and Health Administration (OSHA) <http://www.osha.gov/>
 National Hearing Conservation Association <http://www.hearingconservation.org/>

National Association of Schools of Music http://nasm.arts-accredit.org/site/docs/PAMA-NASM_Advisories/1_NASM_PAMA-Admin_and_Faculty_2011Nov.pdf