QUEENS UNIVERSITY of CHARLOTTE

# Musician's Health and Safety Information Package

## Department of Music, Theatre, & Dance

# Introduction

All university programs accredited by the National Association of Schools of Music (NASM) are obligated to provide health and safety-related information to student musicians. The Queens University of Charlotte faculty and staff in the Department of Music, Theater and Dance take this charge seriously, and encourage all students to familiarize themselves with the information presented in this module.

We feel important to remind the reader that health and safety depend in large part on the personal decisions of informed individuals. Institutions have health and safety responsibilities, but fulfillment of these responsibilities can and will not ensure any specific individual's health and safety. Too many factors beyond any institution's control are involved. Individuals have a critically important role and each is personally responsible for avoiding risk and preventing injuries to themselves before, during, and after study or employment at any institution. The advisory information included in this module 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 in any instance or over time to any institution, or to National Association of Schools of Music (NASM) or to Performing Arts Medicine Association (PAMA).

National Association of Schools of Music: http://nasm.arts-accredit.org/

Performing Arts Medicine Association: http://www.artsmed.org/

This module includes information regarding hearing, vocal and musculoskeletal health, repetitive injury prevention, performance anxiety, and the use, proper handling, and operation of potentially dangerous materials, equipment, and technology. You will also find information about general safety.

# General Safety

## Introductory Overview

General Safety for all persons participating in musical activities at Queens University of Charlotte is of the utmost importance to our community. Many of the common-sense safety precautions you can take will keep you and your fellow musicians safe from unwarranted harm. The key to staying safe is remaining conscientious of your surroundings, belongings, and knowing whom to contact in the case of an emergency.

## General Safety

Remaining safe on campus is probably not something that requires more precautions than you are already taking however, there may be some that are often overlooked or haphazardly considered. In order to stay safe, you may need to adjust your habits or entirely change your routine. In a way, this could be a lifestyle change similar to becoming more physically active or improving your study habits. Ask yourself the following questions:

- Do you always lock your dorm room door?
- Do you always lock your computer?
- Are your personal items, including instruments and books, in a safe and secure location where they cannot be taken?
- Have you ever been caught off-guard when in an environment that you usually feel safe?

The above items are often taken for granted. Are you consistently taking these precautions?

Did you know that 80% of campus crimes are committed by someone within the college community? This is a scary statistic. Thieves are also found to typically steal without the use of force. This fact means that the individuals who may have found your belongings, taken or tampered with them, are likely one of your peers.

There are other ways to protect yourself that you may not have realized. For example, if you put a note on your door explaining where you are and when you will return, you have given someone a detailed map of your whereabouts. Always trust your instincts and take these common-sense precautions.

## Self-Awareness

Another precaution that you can take is to remain aware of your surroundings. Remaining aware is not limited to paying attention while walking around campus at night because crimes can happen at any time of the day. How often do you walk around campus listening to music with headphones or talking on the phone? While you are engaged in a thoughtful conversation or listening to your jam, someone can easily take something out of your bag without you ever noticing. Things you can do to deter a crime could include:

- Watch people's behavior for any irregularities.
- Walk with groups of people.
- Listen to your music or have your phone conversation when you have reached your destination.

Trust your intuition with people around you as well as your surroundings. Use the 10-5-2 system. How do you feel while being in proximity from a person or place? Ask yourself these questions:

- How do you feel 10 feet away from a particular person/place?
- How do you feel 5 feet away from a particular person/place?
- How do you feel 2 feet away from a particular person/place?

Get in the habit of being aware of your surroundings and how you feel within these distances. If you are uncomfortable, remove yourself from the situation. If the person persists, call the Public Safety and Campus Police Department at 704-337-2306 to report the situation.

Another helpful tool, while we're on the subject, is to immediately put Public Safety and Campus Police's phone number in your contacts (704-337-2306). You are doing it right now, right? This is one number you should absolutely have in order to report a crime, suspicious activity, or any reason where you feel threatened or in harm's way.

Public Safety and Campus Police can also permanently engrave unique identification numbers onto high-end personal items (i.e. bikes, laptops, iPods, etc.) A record of the items is kept in a database within the police department. Or you might choose to identify your valuables using a "tag kit" that can be purchased at any local retailer.

**Safety Tips for Center for the Fine Arts**

Safety in the Susanne Little Fine Arts building is not limited to protecting your property. It also includes the safety of our facilities. While our faculty, campus police, and campus services personnel are constantly striving for the best environment for everyone that comes to our campus, facilities related problems are not always noticed. This is where you come in!

If you notice something in the building that could pose a safety hazard for others, report it to Campus Services at 704-337-2372. Safety also includes locking doors to practice rooms that are left open, turning off lights and clearing the stage of obtrusive objects, and even getting the attention of someone that may have left items in an unsecured location (the Music Library, for example).

How often have you gone to a computer that was still logged in as a different user? You would probably have to log that person out to get to your own work however, a quick check of a computer you might not be using could mean saving someone from hacking into their accounts and stealing their identity. This includes logging out of social media, printers/copiers, or emails. Your help in securing the building is beneficial to our entire community!

Other safety tips for keeping our building safe include:

- Double-checking that you have collected all of your personal belongings before leaving a classroom.
- Making sure instruments are locked and put away in an appropriate space that will remain safe as you go to your classes.
- Closing the lid and fallboard (over the keyboard) of all pianos after use.
- Becoming familiar with how to turn lights on and off in both concert halls.
- Becoming familiar with the location of emergency exits.
- Wrapping and putting away all cables in the piano lab (and elsewhere) to avoid tripping hurting yourself or damaging of equipment.
- Keeping your room key and other keys to the building in a safe and secure place. Do not lend out your key to anyone.

Again, if you are leaving the building late at night and do not feel safe, call the Public Safety and Campus Police Department at 704-337-2306 to escort you to your residence hall or car.

**Other Important Safety Information**

Many students have vehicles or bicycles on campus and staying safe can help protect you and your belongings while on and off campus. When traveling off campus, make sure to park your car or bicycle in a well-lit area. Lock your bicycle to an appropriate corral and remove all personal belongings including helmets or bags that could be taken.

There are several emergency blue light phones located on the main campus. Once activated, a blue light strobe flashes from the top of the phone tower and Public Safety and Campus Police is notified immediately. If you need assistance, see something that is suspicious or see someone else who needs assistance, you should activate a blue light phone and speak directly with Public Safety and Campus Police. Emergency Blue Light Phones are routinely checked by Public Safety and Campus Police Officers and repair requests are made as needed.

Other behavior that may put you at risk includes:

- Dumpster Diving - Someone digging through your trash to get personal information.
- Shoulder Surfing - Someone watching behind you as usernames/passwords/pin numbers are being used.
- Social Engineering - Someone conning another to gain access to company/university information.
- Phishing - Emails pretending to be someone else, asking for reply to emails, looking for your account information, or someone posing as the campus IT department.
- Pharming - Someone trying to get personal financial information
- Hacking - Getting through a firewall to get confidential information

Avoid posting real name, date of birth, where you live or work, and phone numbers. People attempting to steal your identity or personal information will use these methods to commit crimes that may be harmful for an extended period of time. Be aware of your surroundings and the people within close proximity to you.

Always be sure to report obscene, annoying, or harassing phone calls or email messages immediately. You can also participate in personal safety and security programs where you will learn more actions that can save you or the community harm from others.

## Conclusion

General Safety is not one person's job, but it is the job of our entire community. Taking precautions, being aware of your surroundings, and knowing who to contact in an emergency will benefit everyone. These are not steps that are limited to people within the Queens music community – they can be applied to all of your activities. Stay safe!

## References

Queens University of Charlotte Public Safety and Campus Police URL:
<http://www.queens.edu/Student-Life/Public-Safety-and-Campus-Police.html>
Protect Your Possessions and Identity URL:
<https://www.youtube.com/watch?v=VSLyi6EGQpc>

## Additional Resources

**Public Safety and Campus Police URL**:
<http://www.queens.edu/Student-Life/Public-Safety-and-Campus-Police.html>
**Queens Safe Initiative Programs URL:**
<http://www.queens.edu/Student-Life/Public-Safety-and-Campus-Police/Queens-Safe-Initiative-Programs.html>

To report a crime on campus, dial 704-337-2306
- Or by dialing 911

Crimes may also be reported to the Dean of Students (704-337-2227) and authorities in Residence Life (704-337-2464)

Confidential reporting can be made to:

| | |
|---|---|
| Counseling | 704-337-2220 |
| Physical Health | 704-337-2220 |
| Spiritual Health | 704-337-2912 |

| | |
|---|---|
| **Campus Police** | 704-337-2306 |
| Direct Number (To the Sergeants and Officers on duty) | |

# Proper Handling and Operation of Materials, Equipment, and Technology

The music students, faculty and staff must be respectful of shared spaces and shared equipment in order to maintain good and safe working conditions for all. Additionally, students are bound by the University Honor Code to treat equipment with respect and use it responsibly. The health and safety of our students, faculty, and staff is of utmost importance. In order to ensure safety all members of the music community should adhere to the following guidelines.

## Safe Lifting/Moving Heavy Instruments or Equipment

Bend from the knees for any kind of lifting, even light lifting. Lift, push or pull from the power zone (close to the body between mid-thigh and mid-chest); pushing is preferred and safer than pulling whenever possible. Work with a partner when possible. Carry the load close to the body. Don't twist your body while carrying the load. To change direction, shift your foot position and turn your whole body. Watch where you are going! To lower the object, bend the knees. Don't stoop. Make sure your hands and feet are clear when placing the load.

For specific guidelines on safe movement and lifting by the Department of Occupational Safety and Health:
https://www.osha.gov/SLTC/etools/electricalcontractors/supplemental/principles.html#power

Guidelines of Safe Lifting by the National Institute of Occupational Safety and Health (NIOSH):
https://www.cdc.gov/niosh/docs/94-110/

## Cleaning and Disinfecting Instruments

Each student is responsible for the care and maintenance of personal instruments; sharing mouthpieces is discouraged; see manufacturer's directions for maintenance specific to your instrument. Also, your applied instructor will provide information on how to clean and maintain your instrument.

The music therapy program maintains a collection of musical instruments for checkout and use during clinical training, coursework, and sometimes in performing ensembles. Our department also maintains a collection of musical instruments for use by members of the faculty and students enrolled in our courses and performing ensembles. As with any other items we use in the course of our daily lives, musical instruments must be cared for properly and cleaned regularly. Each instrument in the Department's collection receives an inspection at the end of the academic year. Every year, thousands of dollars are spent to clean, adjust, and return instruments to full playing condition.

Please be aware that most viruses cannot live on hard surfaces for a prolonged period of time. Some die simply with exposure to air. However, certain groups are quite hardy. Therefore,

musicians must be concerned with instrument hygiene. Users of school owned and rented musical equipment might be more susceptible to infections from instruments that are not cleaned and maintained properly. If the cleaning process is thorough, however, musical instruments will be antiseptically clean.

In general, please keep the following in mind: (a) if possible, have your own mouthpiece, (b) reeds should never be shared, (c) use a disinfectant (e.g., Sterisol germicide solution or alcohol wipes) between uses to disinfect instruments between uses, (d) discuss any hygienic issues and concerns with your applied instructor. Above, all remember that many concerns about viruses can be solved by musicians washing their hands before and after use of musical instruments.

Music therapy students are required to clean instruments after every session using disinfecting wipes in the music therapy clinics and resource room. Instruments that come in contact with bodily fluids should be cleaned and then disinfected using a bleach solution. Supplies and instructions are available in the music therapy resource room.

For additional information about safety issues and hygiene, contact the campus health and wellness center. https://my.queens.edu/studentlife/SitePages/Health%20And%20Wellness.aspx

## Care of Equipment and Technology

Electronic and Recording equipment owned by the our department (computers in the classroom, library, and music therapy resource room, handheld recording devices, piano lab keyboards) should be used with care and respect. Do not move department equipment or rearrange wiring unless specifically instructed to do so by a University employee. Pianos in the practice room are regularly maintained and should be treated with care at all times. Any problems with department equipment should be immediately reported to the Department Chair.

Information Technology Services and the Media Services Team provide support for the computers and recording equipment respectively. In addition, the Media Services Team manages the permanent sound and lighting systems for the stage in Dana Auditorium and provides temporary equipment as needed in other spaces. For issues with any sound equipment (with the exception of handheld recording devices) contact Media Services: 704-337-2262

## Back Stage Safety

Moving pianos on the concert stages requires a minimum of 2 people and must be supervised by a faculty member or trained work obligation student. When moving the pianos, you should push them into the correct position using safe moving techniques outlined above. Prior to moving any equipment check the stage and remove debris, wires, or other trip hazards.

Do not tamper with safety equipment. Smoking is not permitted at any time in the fine arts building. Unauthorized visitors are not allowed in the stage area or dressing rooms before, during or after performances or rehearsals. Have access to a cell or other phone for emergency purposes

and make sure the appropriate emergency numbers are available. Contact campus police if you notice anything suspicious: (704) 337-2306.

## Conclusion

In order to maintain a safe and effective learning and work environment it is the responsibility of the entire music community to:

- Be respectful of the equipment and use it with care
- Maintain departmental instruments as if they are your personal instruments
- Use proper lifting/pushing techniques at all time.
- Disinfect/sanitize materials and equipment as needed.

## References


Supplemental Information: Ergonomic Principles Index
https://www.osha.gov/SLTC/etools/electricalcontractors/supplemental/principles.html#lifting

Cleaning Children's Toys
http://www.cultureofsafety.com/childcare/cleaning-childrens-toys/

How To Clean and Disinfect Schools To Help Slow the Spread of Flu
http://www.cdc.gov/flu/school/cleaning.htm


**Additional Campus Resources**

Health and Wellness: 704-337-2220
Campus Services: 704-337-2201
Media Services Team: 704-337-2262
Information Technology Services: 704-337-2323

# Neuromuscular System Health

## Introductory Overview

Practicing and performing music is physically demanding. Musculoskeletal health is essential to lifelong success as a musician. Musicians are susceptible to numerous musculoskeletal disorders. Many of those are preventable, treatable, or both. Athletes can take care of their bodies by exercising, stretching, resting, hydrating, and getting appropriate nutrition (food). Similarly musicians can safeguard their physical (and mental) health by adopting and maintaining healthy habits.

Repetitive motion injuries (also referred to as Cumulative Trauma Disorder – CTS or Repetitive Strain Injury – RSI) can occur when some motion is done repeatedly. Pain or other warning signs may develop slowly. Many areas can be affected, but the most common are fingers, hands, wrists, elbows, arms, shoulders, back, and neck.

## What is the Neuromuscular System?

The neuromuscular system supports our body's structure. It involves the muscles, bones, tendons, ligaments, nerves, and tissues that allow musicians to move, sing, and play musical instruments. The "neuro" part refers to the nervous system and plays an important role in understanding how our brain sends signals to our nervous system to coordinate the way our body moves and operates. The nervous system consists of our brain, the spinal cord, and the nerves responsible for transmitting information back and forth between our brain and the rest of our bodies. Performing music involves executing an array of complex movements in sequence. Over time, musicians who develop automatic, unconscious or poor habits of movement and posture are increasingly at risk of neuromuscular injuries.

## Disorders of the Neuromusculoskeletal System

Sometimes, within our complex physical bodies, something goes wrong, and we find ourselves victim to a neuromusculoskeletal disorder. The causes and contributing factors vary, but such disorders generally fall into one of the following three categories: 1) disorders with a genetic link; 2) disorders resulting from trauma or injury; and 3) disorders that are related to our behavior. Some common symptoms of all neuromusculoskeletal disorders include pain, stiffness, aching, throbbing, cramping, and muscular weakness. Some disorders may be permanent, while others may be temporary. In some cases, a simple change in behavior or some rest and relaxation can help to eliminate or reduce certain symptoms. Other times, it's not so simple, and medical professionals may need to prescribe certain treatments, such as surgery, therapy, or medication.

## Contributing Factors of Neuromusculoskeletal Disoders

The exact causes of behavior-related neuromusculoskeletal disorders are manifold. However,

these causes generally fit into one of two basic categories or factors: 1) musculoskeletal overuse and/or misuse, and 2) genetic factors.

**1. Overuse/Misuse (and Abuse)**

*Overuse*
The human body, as we all know, has certain physical limits. In arts medicine terminology, "overuse" is defined as a practice or activity in which anatomically normal structures have been used in a so-called "normal" manner, but to a degree that has exceeded their biological limits. Overuse produces physical changes in our muscles, tendons, ligaments, etc., and that's when we experience symptoms, such as pain and discomfort.

So, how much activity is too much? What exactly constitutes overuse? Well, there's no simple answer to either of these questions. The amount of excessive activity needed to produce these results varies from person to person. Often, it's tied to a person's individual anatomy and physiology. Musicians who are dealing with changes to their musical routine may find themselves "overdoing it." In the face of high self-expectations, musicians who are beginning at a new school or who are starting lessons with a new instructor may be more apt to overdo it, to push themselves too hard. Similarly, musicians who are taking up a new instrument may overdo it, as they work to quickly advance their skills. Really, any musician who rapidly increases his or her practice time or intensity is likely to overdo it and increase his or her level of risk.

When it comes to overuse, what we need to ask ourselves the following questions: "Is my body well conditioned enough to handle this kind and amount of physical activity? Am I changing my musical routine too drastically or too quickly? Why am I making this change?" These are questions that require honest and individualized answers.

*Misuse*
"Misuse" is when we use our bodies to perform physical tasks in abnormal ways – and sometimes to excessive degrees. When we misuse certain bodily structures, we put them under stress. This can lead us to experience symptoms such as pain and discomfort.
In music, an example of physical misuse is improper technique. Improper technique can involve poor or "lazy" posture. For instrumentalists, it can involve playing with excessive pressure or force. It can also involve a physical mismatch between player and instrument. For singers, it can involve singing too loudly or singing out of range. Remember, good posture and technique are important. They'll make playing and singing easier, and you'll be less likely to hurt yourself.

*Abuse*
Abuse is related to both overuse and misuse. We abuse our own bodies when we perform an activity not only excessively or improperly, but also in a conscious, willful manner, over a sustained period of time. A common example is "playing through the pain." Football players can be frequent perpetrators, but so are some musicians. In their quest to be the best, they let their own physical well-being take a back seat, and end up hurting themselves. Playing or singing through the pain is not an acceptable option. If you're hurting, stop. Tell your instructor that you're not okay. Your instructor will likely have a protocol in place. This may include asking you to sit on the sidelines and make notes in your music, or you may be excused from class to

seek treatment. Ultimately, if you are experiencing chronic pain, consult with a medical professional, and follow the treatment plan they provide. Your health is too important to be playing through the pain. Abuse can also involve the use of alcohol or other dangerous substances. Don't smoke or use any drug not prescribed by a medical professional licensed to do so.

**2. Genetic Factors**
There are also some genetic predispositions that can increase a person's risk of developing one or more behavior-related disorders. One of the most common genetic factors in this category is double-jointedness. Medically known as "hypermobility," people with this condition have joints, ligaments, and tendons with an extended range of motion. Such joint instability can increase a person's risk of developing various muscle pain syndromes. It can also lead to tendinitis, an inflammation of the tendon. (Tendons, as you may know, are the tough bands of fibrous tissue that connect muscle to bone.) Individuals with hypermobile joints tend to compensate for this instability by over-tensing their muscles. While this extra muscle tension can help them to better control their movements, it can also increase their risk of damaging or straining a muscle. People with hypermobility are generally encouraged to monitor and actively reduce the amount of tension that they carry in their muscles in order to reduce the risk of future pain and discomfort. Specific strengthening exercises may be recommended, or they may employ external methods of joint support, such as small ring splints or tape.

## Neuromusculoskeletal Issues Affecting the Body

Below are a number of neuromusculoskeletal complications and disorders that are likely to affect the musician's body.

**1. Muscle Pain**
For musicians, muscle pain can be the result of overuse, misuse, poor posture, tension, technical problems, or poor conditioning. Muscles that are fatigued are less able to contract as strongly and frequently as "normal" muscles. With continued use, fatigued muscles are placed under greater stress, and this can lead to microscopic damage and disruption of the muscle fibers, a condition known as muscle strain. Muscle contraction is both a physical and a chemical process. When the necessary chemical compounds are in short supply, muscles can no longer operate at optimal efficiency. When muscles contract, they produce lactic acid. When lactic acid builds up in tissues, it minimizes the muscle's ability to continue efficient contractions.

Some kinds of muscle pain may subside once an activity is stopped, but others will linger. In the case of muscle strains, the pain may dissipate, but a regimen of rest, ice, and/or anti-inflammatory medications may be necessary in order to reduce swelling and help facilitate a quicker recovery. As always, it's best to get your advice and treatment plan from a medical professional.

For musicians, muscle pain that stems from performing music is commonly felt in specific body locations. The neck and shoulders; the hands, wrists, and fingers; and the lower back are the most frequently affected areas. Some musicians are more susceptible to certain injuries than others. For example, clarinetists are at greater risk for right thumb pain. Double bass players are

more likely to experience pain in the lower back. So, just remember this, when it comes to muscle pain, give your body a break and rest your weary muscles for as long as it takes. Resuming activity prematurely often exacerbates the problem and leads to more trouble in the long run.

**2. Neuropathies**

"Neuropathy" is a general medical term that refers to diseases or malfunctions of the nerves. Neuropathies are classified by the types or locations of the nerves they affect. Focal neuropathies are those focused on one nerve or group of nerves within a particular area of the body. Symptoms usually appear suddenly and can include pain; sensory disturbances, such as numbness, tingling, "pins of needles" sensations, burning, or even itching; and weakness. In the case of bodily extremities, the pain may occur at the site of a nerve compression or entrapment. Nerve compressions, or entrapments, occur when a nerve passes through a narrowed channel bounded by bone, fibrous bands, bulky muscles, or enlarged arteries on its way to or from its ultimate destination – either toward or away from the brain and spinal cord.

In other cases, the pain may be distributed anywhere along the course of the nerve. Individuals with this kind of nerve pain may later on find themselves experiencing muscle weakness and impaired dexterity. Three of the most common entrapment neuropathies for musicians include: 1) carpal tunnel syndrome, 2) ulnar neuropathy, and 3) thoracic outlet syndrome.

*Carpal Tunnel Syndrome*

Often associated with people who type for a living, carpal tunnel syndrome occurs when the median nerve, which runs from the forearm into the palm of the hand, becomes pressed or squeezed at the wrist. The carpal tunnel – a narrow, rigid passageway of ligament and bones at the base of the hand – contains the median nerve and several tendons. When irritated or strained, these tendons may swell and narrow the tunnel, compressing the median nerve. The result can be pain, weakness, or numbness in the hand and wrist that radiates up the arm. Although some experts tie carpal tunnel syndrome to repeated actions, especially those involving the hands and wrists, others cite a genetic predisposition. It is also associated with certain medical conditions, including diabetes, arthritis, and hypothyroidism. It is often very difficult to determine the precise cause of carpal tunnel syndrome. Whatever the cause, it is a good idea to occasionally rest and to stretch the hands and wrists when performing repetitive tasks or musical exercises. For individuals diagnosed with carpal tunnel syndrome, a doctor may recommend the use of a wrist splint, especially at night.

*Ulnar Neuropathy*

Ulnar neuropathy is a condition in which the ulnar nerve, which runs from the neck along the inside edge of the arm into the hand, becomes inflamed due to compression of the nerve. Symptoms include tingling, numbness, weakness, and pain, primarily along the elbow, the underside of the forearm, and along the wrist or edge of the hand on the little (pinky) finger side. Compression of the ulnar nerve is often linked to repetitive wrist or elbow movements. Musicians of bowed instruments are at a heightened risk for developing this condition, because playing a bowed instrument involves sustained elbow flexion. Treatment for ulnar neuropathy may involve pain medication, the use of splints to restrict motion, and various exercises.

*Thoracic Outlet Syndrome*

Thoracic outlet syndrome refers to a group of disorders that occur when the blood vessels or nerves in the thoracic outlet – the space between the collarbone and first rib – become compressed. It is most often the result of poor or strenuous posture, or of constant muscle tension in the neck and shoulder area. Symptoms include pain in the neck and shoulder areas and numbness in fingers. Doctors may prescribe a variety of stretches and exercises in order to treat the symptoms of thoracic outlet syndrome. Proper body alignment and sufficient muscle strength can both help to decrease the risk of thoracic outlet syndrome among musicians.

**3. Dystonia**
Dystonia involves sustained muscular contractions. These muscular contractions produce unwanted movements or abnormal postures in people. The exact cause of dystonia is unclear. Like a focal neuropathy, focal dystonia is focused on a particular area of the body, and certain sets of muscles within that area of the body are involved. Because men are more frequently affected than women, it is possible that genetic or hormonal factors are to blame. Also, as is the case with carpal tunnel syndrome, repetitive movements, especially those that are painful, seem to be a trigger for dystonia. In the instrumental musicians, these sustained muscle contractions frequently affect the upper arm. This is especially true for keyboard, string, percussion, and woodwind players. In brass and woodwind players, the embouchure may be affected.

## Prevention

**Prevention means practicing and playing smart. Be aware of repetitive motion used during practice.** To reduce risk of repetitive motion injuries:

- Try to adapt practice activities. Take frequent breaks. Examples could include breaking up 60 minutes of a technical exercises, scales etc. into two 30 minute session, earlier and later in the day.
- Avoid sudden increases in practice times. Know your body and its limits, and avoid "overdoing it."
- Practicing difficult musical passages slowly and under tempo in a relaxed manner, giving the body time to learn the motions in a relaxed way.
- Take frequent breaks. If you are an instrumentalist, try standing and walking frequently instead of sitting in playing position for hours at a time.
- Be aware of everyday activities that can exacerbate or cause injuries: using a computer, driving, strenuous activity, washing dishes, lifting weights, playing sports, and carrying or lifting heavy bags or boxes.
- Implement alternative forms of practice. There are many ways to "digging" into your music. Study your score, mentally map it, think about the emotional content, dynamic expressions, voicing, interesting musical moments, etc. Listen to recordings of your pieces and compare them noticing similarities and differences. If you are an instrumentalist, sing out the lines. Do full runs of pieces completely inside your head. There are endless possibilities…

**If pain occurs in spite of prevention, contact your doctor for an evaluation. Receiving an early evaluation and treatment is important**.

## Treatment

**If pain occurs in any area, do not ignore it.** The pain will not go away. Instead, it will get worse. The injury will become more severe as time passes. See a doctor as soon as possible.

Your doctor may prescribe medication to help reduce inflammation and pain. Regular follow up visits with your doctor should be scheduled to check your progress. In most cases the doctor will remove a person from the situation that is causing the injury. Thus, the doctor may recommend limiting the hours your practice per week or abstaining from practicing. Recommendations may include a gradual return to practicing your instrument.

For more serious cases, you may be referred to an occupational therapist or physical therapist. They may recommend strengthening hand and arm muscles with exercises. An improved awareness to the situation and adjustments in posture could be recommended.

Other treatment possibilities include chiropractic care, Feldenkrais method, Pilates, yoga, Tai Chi, massage therapy, and acupuncture.

## Repetitive Motions that can lead to Injuries

- Repetitive action of the hand or arm
- Bending at the wrist
- Grasping or pinching
- Frequently raising the arm and/or the shoulder

## Symptoms of an Injury

- Waking due to pain
- Numbness
- Tingling
- Swelling or tenderness
- Continuous aches
- Loss of strength
- Loss of joint movement
- Crackling
- Decreased coordination

## What if I have an injury? Then what?

Inform your applied music instructor as soon as possible if you are experiencing pain. They will be able to show you different practice strategies. Refer to the class syllabus regarding formal policies of attendance and participation in applied lessons. Continue to attend your lessons and stay in communication with your instructor. Obtain documentation from the physician that is

treating you. Your applied instructor may require a release note by the treating physician. Individual instructors, based on their policies listed on the syllabus, determine what effect excused and unexcused absences have in determining grades as well as a student's ability to remain in the course.

## Marching Musicians

Musicians in marching bands and drum corps need to maintain a high level of physical conditioning, strength, and endurance. Their rehearsals and performances are very physical and require very precise movements, all while carrying an instrument. Marching musicians are at an increased risk for sprained ankles, toe contusions, and knee strains, and the heavy instruments that you carry place great amount of physical stress on the neck, torso, lower back, and legs. In some climates, high heat, humidity, and extended sun exposure may place added strain on these musicians. Thorough physical warm-ups, sufficient rest periods, appropriate sun protection, and adequate hydration are essential in promoting the neuromusculoskeletal health of these musicians.

## Conclusion

Neuromusculoskeletal health is important for musicians. If pain or numbness occurs when playing your instrument, stop. Take a break. See a doctor as soon as possible. In general, work and practice in a comfortable space with proper posture. Change practice (and work) habits to avoid repetitive motion. Be aware that force can cause injury to nerves, muscles, and tendons affecting your ability to play your instrument. Get plenty of rest and adopt healthy habits to prevent injuries, muscle pain, or neuropathies.

## References

*Adapted from*: Protecting Your Musculoskeletal Health: Student Information Sheet – NASM/PAMA. http://nasm.arts-accredit.org/index.jsp?page=NASM-PAMA%3A+Neuromusculoskeletal+and+Vocal+Health

Shearer, A. (1990). *Learning the classic guitar.* Pacific, MO: Mel Bay Publications.

## Additional Resources

Charlotte Area Resources:

- http://www.uptownchirocharlotte.com/carpal-tunnel-syndrome
- http://www.carolinashealthcare.org/medical-services/specialty-care/orthopedic-care/sports-medicine-and-injury-care
- http://novachiropracticcharlotte.com/repetitive-strain-injury-treatment-in-charlotte-nc/

Additional Resources:

- The Role of Rest, by Ralph A. Manchester
- A Painful Melody: Repetitive Strain Injury Among Musicians, by Tamara Mitchell
- Repetitive Stress and Strain Injuries: Preventive Exercises for the Musician, by Gail A. Shafer-Crane
- MusiciansHealth.com
- Texas Voice Center
- The Alexander Technique
- Andover Educators (body mapping)
- Dalcroze Society of America
- The Feldenkrais Method
- Performing Arts Medicine Association (PAMA)
- Performing Arts Medicine Association Bibliography (search tool)

# Hearing Health

## Introductory Overview

Part of the role of any professional is to remain in the best condition to practice the profession. For all of you, as aspiring musicians, professionalism involves safeguarding your hearing health. Whereas certain types of hearing loss may be the result of genetic factors, infections, or acquired injuries and may be unavoidable, hearing loss due to noise exposure (scientifically referred to as noise-induced hearing loss or NIHL) can be prevented. Fifty percent of musicians may have permanent NIHL hearing loss to some degree.

In this unit you will find information about NIHL, preventative measures, and basic information on precautionary measures that all of us should practice daily. The information in this unit is generic, presentational, and advisory in nature and does not substitute for the professional judgments of medical and other professionals with expertise in hearing loss. A musician's personal decisions will affect hearing health.

If you are concerned about your hearing or think you may have suffered hearing loss, consult a licensed medical professional. We can help you in so far as we can refer you to the health center on campus. The health center staff will take it from there.

## Music and Noise

You may be wondering why we're referring to music—this beautiful form of art and self-expression—as "noise." Here's why: What we know about hearing health comes from medical research and practice. Both are based in science where ―noise is a general term for sound. Music is simply one kind of sound. Obviously, there are thousands of others. In science-based work, all types of sound, including music, are regularly categorized as different types of noise.

Terminology aside, it's important to remember this fundamental point:

> A sound that it 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. All of us, as musicians, are responsible for our art. We need to cultivate a positive relationship between music and our hearing health. Balance, as in so many things, is an important part of this relationship.

## Noise-Induced Permanent Hearing Loss

Let's first turn to what specialists refer to as ―noise-induced permanent hearing loss. The ear is made up of three sections, the outer, middle, and inner ear. Sounds must pass through all three sections before signals are sent to the brain. Here's the simple explanation of how we experience sound:

Sound, in the form of sound waves, enters the outer ear. These waves travel through the bones of

the middle ear. When they arrive in the inner ear, they are converted into electrical signals that travel via neural passages to the brain. It is then that you experience —hearing the sound.

Now, when a loud noise enters the ear, it poses a risk to the ear's inner workings. For instance, a very loud sound, an explosion, for example, or a shotgun going off at close range, can actually dislodge the tiny bones in the middle ear, causing conductive hearing loss, which involves a reduction in the sound level experienced by the listener and a reduction in the listener's ability to hear faint sounds. In many cases, this damage can be repaired with surgery. But loud noises like this are also likely to send excessive sound levels into the inner ear, where permanent hearing damage occurs.

The inner ear, also known as the cochlea, is where most hearing-loss-related ear damage tends to occur. Inside the cochlea are tiny hair cells that are responsible for transmitting sound waves to the brain. When a loud noise enters the inner ear, it can damage the hair cells, thus impairing their ability to send neural impulses to the brain.
The severity of a person's noise-induced hearing loss depends on the severity of the damage to these hair cells. The extent of the damage to these cells is normally related to the length and frequency of a person's exposure to loud sounds over long periods of time.

Because noise-induced hearing loss is painless, you may not realize that it's happening at first. Then suddenly one day you will realize that you're having more and more trouble hearing high frequency sounds – the ones that are the most high-pitched. If you don't start to take precautions then, your hearing loss may eventually also affect your ability to perceive both speech sounds and music. It is very important to understand that these hair cells in your inner ear cannot regenerate. Any damage done to them is permanent. At this time, there is simply no way to repair or undo the damage.

FACT: According to the American Academy of Audiology, approximately 36 million Americans have hearing loss. One in three developed their hearing loss as a result of exposure to noise.

**Noise-Induced Temporary Hearing Loss**

Now it's also important to note that not all noise-induced hearing loss is necessarily permanent. Sometimes, after continuous, prolonged exposure to a loud noise, we may experience what's called —noise-induced temporary hearing loss. During temporary hearing loss, known as Temporary Threshold Shift (TTS), hearing ability is reduced. Outside noises may sound fuzzy or muted. Normally, this lasts no more than 16 to 18 hours at which point your hearing levels will return to normal. (You may have experienced TTS after attending a rock concert, or going to a club with loud music).

Often during this Temporary Threshold Shift, people will experience tinnitus, a medical condition characterized by a ringing, buzzing, or roaring in the ears. Tinnitus may last only a few minutes, but it can also span several hours, or, in extreme instances, last indefinitely. Also, if you experience a series of temporary hearing losses, you may be well on the way to permanent damage sometime in the future.

**Noise Levels and Risk**

Now, how do you know when a noise or sound is too loud—when it's a threat to your hearing health?

Most experts agree that prolonged exposure to any noise or sound over 85 decibels can cause hearing loss. You may have seen decibels abbreviated ―dB. They are the units we use to measure the intensity of a sound.

Two important things to remember:
. The longer you are exposed to a loud noise, the greater the potential for hearing loss.
. The closer you are to the source of a loud noise, the greater the risk that you'll experience some damage to your hearing mechanisms.

At this point, it helps to have some frame of reference. How loud are certain noises?

Consider these common sounds, their corresponding decibel levels, and the recommended maximum exposure times established by the National Institute for Occupational Safety and Health (NIOSH), a branch of the Centers for Disease Control and Prevention (CDC).

| Sound | Intensity (dB) | Maximum Recommended Exposure (approx.)* |
|---|---|---|
| A Whisper | 30 | Safe, No maximum |
| Rainfall (moderate) | 50 | Safe, No maximum |
| Conversation (average) | 60 | Safe, No maximum |
| Freeway Traffic | 70 | Safe, No maximum |
| Alarm Clock | 80 | Safe, No maximum |
| | 85 | Potential Damage Threshold |
| Blender, Blow-dryer | 90 | 2 hours |
| MP3 Player (full volume), Lawnmower | 100 | 15 minutes |
| Rock Concerts, Power Tools | 110 | 2 minutes |
| Jet Plane at Takeoff | 120 | Unsafe, Immediate risk |
| Sirens, Jackhammers | 130 | Unsafe, Immediate risk |
| Gunshots, Fireworks (close range) | 140 | Unsafe, Immediate risk |

*NIOSH-recommended exposure limits

You can listen to sounds under 85 dB for as long as you like. There is no risk involved, well, except for the risk of annoyance. But seriously, for sounds in this lower decibel range, listening to them for hours on end does not pose any real risk to your hearing health.

85 dB is the magic number. Sounds above the 85 dB threshold pose a potential threat to your hearing when you exceed the maximum recommended exposure time.

MP3 players at full volume, lawnmowers, and snowblowers come in at 100 dB. The recommended maximum exposure time for these items is 15 minutes.

Now, before you get too worried and give up mowing the lawn, remember, there are ways to reduce your exposure.

- For instance, turn down the volume on your MP3 player. Did you know that normally, MP3 players generate about 85 dB at one-third of their maximum volume, 94 dB at half volume, and 100 dB or more at full volume? Translated into daily exposure time, according to NIOSH standards, 85 dB equals 8 hours, 94 dB equals 1 hour, and 100 dB equals 15 minutes. Do yourself a favor, and be mindful of your volume.
- Also, remember to wear a pair of earplugs or earmuffs when you mow the lawn or when you use a snowblower, go to a rock concert, pub or club with loud music.
- When you're dealing with sounds that produce between 120 and 140 dB, you're putting yourself at risk for almost immediate damage. At these levels, it is imperative that you utilize protective ear-coverings. Better yet, if it's appropriate, avoid your exposure to these sounds altogether.

FACT: More than 30 million Americans expose themselves to hazardous sound levels on a regular basis.

**Musicians and Noise-Induced Hearing Loss**

Nowadays, more and more is being written about the sound levels of certain musical groups. It's no secret that many rock concerts expose performers and audiences to dangerously high levels of noise. The ringing in your ears after a blaring rock concert can tell you that. But now professional and college music ensembles are under similar scrutiny.

It's true that musicians are exposed to elevated levels of sound when they rehearse and perform music. But that doesn't equal automatic risk for hearing loss. Take for instance a typical practice session on the piano. When taken at close range to the instrument over a limited period of time, a sound level meter fluctuates between a reading of 60 and 70 decibels. That's similar in intensity to your average conversation (60dB). There will, of course, be moments when the music peaks and this level rises. But these moments are not sustained over several hours (at least not under normal practice conditions).

While the same is true for most instruments, it is important to understand that certain instrumental sections tend to produce higher sound levels. Sometimes these levels relate to the piece of music being performed and to notational requirements (pianissimo, fortissimo); other times, these levels are what naturally resonate from the instrument. For example, string sections tend to produce decibel levels on the lower end of the spectrum, while brass, percussion, and woodwind sections generally produce decibel levels at the higher end of the spectrum. What's important is that you are mindful of the overall volume of your instrument and of those around you. If you're concerned about volume levels, share your concerns with your instructor.

FACT: Approximately 50% of musicians have experienced some degree of hearing loss.

The interactive chart found on this website demonstrates the noise-induced hearing loss risks associated with specific musical instruments and the approximate time to reach your daily exposure limit: http://www.etymotic-media.com/sliderule/

This video offers valuable information about protecting musicians' most important asset – our hearing! http://www.youtube.com/watch?v=ksXy26NZ2HA

## Mindful Listening

Now, let's talk about how you can be proactive when it comes to music and hearing loss. It's important to think about the impact noise can have on your hearing health when you:

1. Attend concerts;
2. Play your instrument;
3. Adjust the volume of your car stereo;
4. Listen to your radio, CD player, and MP3 player.

Here are some simple ways to test if the music is too loud. It's too loud (and too dangerous) when:

1. You have to raise your voice to be heard.
2. You can't hear someone who is 3 feet away from you.
3. The speech around you sounds muffled or dull after you leave a noisy area.
4. You experience tinnitus (pain, ringing, buzzing, or roaring in your ears) after you leave a noisy area.

## Evaluating Your Risk for Hearing Loss

When evaluating your risk for hearing loss, ask yourself the following questions:

1. How frequently am I exposed to noises and sounds above 85 decibels?
2. What can I do to limit my exposure to such loud noises and sounds?
3. What personal behaviors and practices increase my risk of hearing loss?
4. How can I be proactive in protecting my hearing and the hearing of those around me?

## Measuring Sound Levels Scientifically (Yes… there is an APP for that!)

Sound level meters are devices that provide decibel readings of sound levels. If using sound level meters it is important to use devices that meet American National Standards Institute (ANSI) specifications.

There are several smartphone apps that measure occupationally relevant sound level values. You may find the following block (http://blogs.cdc.gov/niosh-science-blog/2014/04/09/sound-apps/ ) useful in determining the appropriateness for using sound measurement applications for measuring noise exposure.

## Basic Protection for Musicians

As musicians, it's vital that you protect your hearing whenever possible. Here are some simple ways to reduce your risk of hearing loss:

1. When possible, avoid situations that put your hearing health at risk.
2. Refrain from behaviors, which could compromise your hearing health and the health of others.
3. If you're planning to be in a noisy environment for any significant amount of time, try to maintain a reasonable distance from the source of the sound or noise. In other words, there's no harm in enjoying a fireworks display, so long as you're far away from the launch point.
4. When attending loud concerts, be mindful of the location of your seats. Try to avoid sitting or standing too close to the stage or to the speakers, and use earplugs.
5. Keep the volume of your music and your listening devices at a safe level.
6. Remember to take breaks during a rehearsal. Your ears will appreciate this quiet time.
7. Use earplugs or other protective devices in noisy environments and when using noisy equipment.

Explore the following methods of hearing protection:

- Earplugs – often made of foam or silicone; designed to be inserted into the wearer's ear canal to protect against loud noise; some designed specifically for music applications.
- Earmuffs – often consist of two protective foam pads connected by a headband or strap; designed to cover the wearer's ears and protect against loud noise
- Acoustical sound shields – generally made of clear plexi-glass or similar material; used to isolate and redirect the noise from a particular instrument or section of a band, orchestra, or ensemble; protects the hearing of musicians directly in front of the shielded instrument or section

As a musician, you may want to consider ordering and using earplugs that are specifically designed for musicians. You may also want to consider investing money in ordering custom made earplugs. Those can be purchased from hearing professionals, such as an audiologist or an Ear, Throat, and Nose specialist.

TIP: Curry your earplugs in your purse or your backpack. That way you can use them as needed in the practice rooms, during rehearsals, or if you find yourselves in another noisy situation.

## Future Steps

Now that you've learned about the basics of hearing health and hearing loss prevention, we encourage you to keep learning. Do your own research. Browse through the links provided at the end of this document. There's a wealth of information out there, and it's yours to discover.

## Conclusion

Cultivating the most positive personal and professional relationship between music and hearing health is part of being a musician. Be aware of noise levels and the risk of ongoing exposure to loud sounds.
Just remember that all the knowledge in the world is no match for personal responsibility. We've given you the knowledge and the tools; now it's your turn. You are responsible for your exposure to all sorts of sounds, including music. Your day-to-day decisions have a great impact on your hearing health, both now and years from now. Do yourself a favor. Be smart. Protect your precious commodity. Protect your hearing ability.

**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
PAMA Bibliography (search tool)
http://www.artsmed.org/bibliography.html

**General Information on Acoustics**
Acoustical Society of America (http://acousticalsociety.org/)
Acoustics.com (http://www.acoustics.com)
Acoustics for Performance, Rehearsal, and Practice Facilities Available through the NASM Web site (click here to purchase)

**Health and Safety Standards Organizations**
American National Standards Institute (ANSI) (http://www.ansi.org/)
The National Institute for Occupational Safety and Health (NIOSH) (http://www.cdc.gov/niosh/)
Occupational Safety and Health Administration (OSHA) (http://www.osha.gov/)

**Medical Organizations Focused on Hearing Health**
American Academy of Audiology (http://www.audiology.org/Pages/default.aspx)
American Academy of Otolaryngology – Head and Neck Surgery
(http://www.entnet.org/index.cfm)
American Speech-Language-Hearing Association (ASHA) (http://www.asha.org/)
Athletes and the Arts (http://athletesandthearts.com/)
House Research Institute – Hearing Health (http://www.hei.org/education/health/health.htm)
National Institute on Deafness and Other Communication Disorders – Noise-Induced Hearing Loss (http://www.nidcd.nih.gov/health/hearing/noise.html)

**Other Organizations Focused on Hearing Health**
Dangerous Decibels (http://www.dangerousdecibels.org)
National Hearing Conservation Association (http://www.hearingconservation.org/)

# Vocal Health

## Introductory Overview

Vocal health is important to everyone. We all use our voices, whether speaking or singing. What you may not realize though is that everything from posture to your diet, social habits, fitness level, or emotional state affects the quality and strength of your voice. Similarly, singing done right engages your entire body head to toe and can be physically strenuous. Proper use of the vocal instrument requires training and mindful application for best performance and to protect the voice. Overuse and abuse of the voice is the number one health concern for professional voice users. Thankfully, the majority of vocal health concerns are treatable or reversible with improved mindfulness and lifestyle modifications. In this unit you will find information regarding maintaining a healthy voice and will read about practical strategies for prevention of vocal problems.

## Vocal Anatomy

Our vocal system is a part of our larger neuromusculoskeletal system (the complex system of muscles, bones, tendons, ligaments, and associated nerves and tissues that allow us to move and to speak and sing). Our voice is produced by four component systems. These are often referred to as the "generator," the "vibrator," the "resonator," and the "articulator." The "generator" is our breath that is provided to us by our lungs. The diaphragm, along with numerous other muscles within our abdomen, ribs, chest, and back, help us to move breath throughout our respiratory system. The "vibrator" is the larynx, commonly referred to as the "voice box." Horizontally stretched across the larynx are two folds of mucous membrane. These are called the "vocal folds," or "vocal cords." And so, when breath from our lungs passes along our vocal folds, vibrations occur. The "resonator" is the resonating cavity above the larynx that gives the voice its particular tonal quality. The resonator includes the vocal tract, much of the pharynx, or throat, the oral cavity, and the nasal passages. The "articulator" includes our tongue, lips, cheeks, teeth, and palate. Together, these parts help us to shape our sounds into recognizable words and vocalizations; they help us to articulate. These four component parts – the "generator," the "vibrator," the "resonator," and the "articulator" – work together to produce speech, song, and all order of vocalizations.

## Neuromusculoskeletal Issues Affecting the Voice

There are also a number of neuromusculoskeletal issues that can adversely affect the musician's voice. Some common medical conditions affecting the voice are phonatory instability, vocal strain, and vocal fold motion abnormalities.

### 1. Phonatory Instability

Phonation, as you may know, is the process through which air pressure, generated by the lungs, is converted into audible vibrations. One method of phonation called "voicing" occurs when air from the lungs passes along the elastic vocal folds at the base of the larynx, causing them to vibrate. Production of a tonal, pleasant voice with smooth changes in loudness and pitch

depends upon the symmetrical shape and movement of the vocal folds. Phonatory instability occurs when there is asymmetrical or irregular motion of the vocal folds that is superimposed on the vocal fold vibration. Short-term causes of phonatory instability include fatigue, effects of medication, drug use, and anxiety. These problems tend to resolve rapidly if the cause is removed. Fatigue is another common cause of short-term phonatory instability. Additionally, over-the-counter allergy medications, anti-depressants, and highly caffeinated drinks, which stimulate the nervous system, can often cause vocal tremors, a form of phonatory instability. Drug use, alcohol use, and smoking all adversely affect our control of vocal folds and should be avoided.

**2. Vocal Strain**

Another issue for vocal musicians is vocal strain. Overuse of the voice in any capacity – singing or speaking – can produce vocal strain. Singers must be aware of problems associated with singing at the extremes of vocal range, especially the upper end. Both duration and intensity of singing are as important as they are for instrumentalists. In other words, avoid overdoing it. Singers should also avoid attempting repertoire that is beyond their individual stage of vocal maturity and development. Improperly learning and practicing certain vocal styles is also dangerous.

**3. Vocal Fold Abnormalities**

Prolonged overuse can, in some cases, lead to the development of nodules on the vocal folds. The nodules appear initially as soft, swollen spots on the vocal folds, but overtime, they transform into callous-like growths. Nodules require specialized and prolonged treatment and rehabilitation and can be of grave consequence to singers.

## Requirements for a Healthy Instrument

In an effort to keep serious and recreational singers, alike, sounding their best and singing in a healthy way, here is some information about the voice and how to keep it healthy. If you are concerned about your personal vocal health, speak with a medical professional. The voice faculty can offer you suggestions for practice and referrals to local physicians specializing in care of the voice for singers.

Singing is physical and requires training and maintaining the vocal instrument. Also, things like mental and emotional well-being as well as lifestyle impact your voice every day.

Requirements for good vocal production and a healthy instrument include:

Physical – proper technique, including good posture, effective breathing and engagement of the entire body

Lifestyle – taking care of the body, including proper diet, fitness, rest and relaxation

Health and well-being – maintaining good physical, mental and emotional health, including stress management practices

**Basic Protections for Maintaining Vocal Health**

As musicians, it's vital that you protect your vocal health whenever possible. To maintain a healthy instrument, singers (and other musicians) must also have an awareness of how they are using their voice instrument at all times. Tips for maintenance of good vocal health:

| Avoid . . . | Instead . . . |
|---|---|
| Throat clearing | Try sipping water, hum, laugh gently (If this is a persistent problem, see a doctor.) |
| Coughing | Drink water, use cough lozenges sparingly and avoid peppermint oil. |
| Whispering | Speak gently in a normal tone. |
| Yelling, screaming, talking loudly | Use facial and other physical gestures, and monitor yourself before you yell. Adding intensity and strong consonant diction can sometimes effectively replace added volume. |
| Noisy environments | Use a normal speaking tone at a slightly lower pitch or simply don't talk. |
| Excessive talking | Schedule periods of vocal rest and limit time on the phone. |
| Caffeine consumption | Drink more water. Drink fewer caffeinated beverages and switch to decaf. |
| Too much stress | Use stress management strategies like exercise, meditation, and relaxation. |
| Stuffy nose from a cold or allergies | Stay hydrated. Get plenty of sleep. (If congestion persists, visit the Health and Wellness on campus or a physician/urgent care off campus). |
| Eating late at night | Have a healthy snack and sit up for a while before going to bed. Try not to eat a meal within 3 hours of retiring. |

Also pay attention and avoid foods that may trigger digestive discomfort (citrus fruits, tomatoes, onions, garlic, spicy or oily food).

## Acid Reflex and Vocal Health

Acid reflex is a condition of the digestive system. The vocal chords, on the other hand, are part of the respiratory system. The larynx (voice box) separates our airways from the esophagus (the part that leads food down our stomach). When small amounts of stomach acid that sneak back up the esophagus spill into the larynx they irritate the vocal chords. Reflux laryngitis (or Gastro-Esophageal Reflex Disease – GERD) is a condition identified with a throat exam by a laryngologist is a condition that can cause redness, inflammation or other tissue changes in the vocal folds (Cazden, 2008 ).

Some people may experience sensations such as stomach discomfort, burning sensations, acidic taste in the mouth. Other people maybe asymptomatic and not be aware they have GERD. Overtime, people may feel a vague sensation of vocal irritation, a need to clear their throat, increased post-nasal drip, chronic cough, difficulty singing high notes, cracking voice when singing. Reflux also increases the risk for overuse conditions such as vocal nodules. If you suspect you have acid reflux it is important to seek the advice of a health professional.

## When to Seek Professional Help

There are signs of health issues that require the attention of a professional. Some of the most common signs of serious health issues are:

Chronic hoarseness or huskiness
Sensation of a lump in the throat that won't go away
Waking up with a sore or burning throat or a bitter taste in your mouth
Areas in the vocal range where you have difficulty producing sound
Chronic sinus or upper-respiratory congestion or post-nasal drip

When any of these symptoms are evident, seek professional guidance. Where to go for help:

Student Health and Wellness http://www.queens.edu/Student-Life/Health-and-Wellness-Services.html
Voice teachers
Dr. Rebecca Engen, published researcher in vocal health
Charlotte Eye, Ear, Nose and Throat, one local medical practice with expertise with singers

## Conclusion

Like a professional athlete, singers who use their vocal instruments professionally require a high level of skill and technique to perform at their best and to avoid damaging their instruments.

Furthermore this training needs to be mindfully applied throughout the day, every day. Maintaining your physical and emotional health and well-being is necessary for your voice to be at its best. It is imperative to have a constant awareness of how you are using your vocal instrument to avoid misuse or abuse. Persons who use their voice professionally must be honest in their assessment of vocal health. Do not hesitate to seek professional guidance when needed. Your voice is a priceless and irreplaceable instrument. Take care of it.

## References


Material in this unit was adapted from the NASM-PAMA Advisory on Vocal & Musculosceletal Health: http://nasm.arts-accredit.org/index.jsp?page=NASM-PAMA%20Advisories%20on%20Neuromusculoskeletal%20and%20Vocal%20Health

Charlotte Eye, Ear, Nose and Throat: https://www.ceenta.com/locations/southpark

Cazden, J. (2008). Your throat on Acid. Retrieved from: http://voiceofyourlife.com/cm/Archive/Articles%20on%20Vocal%20Health/Acid%20reflux%20&%20voice.html


## Additional Resources

Health and Wellness: http://www.queens.edu/Student-Life/Health-and-Wellness-Services.html

The Voice Academy is a no-cost, self-directed, virtual school built for the vocal health of U.S. teachers: http://www.uiowa.edu/voice-academy/

Dr. Rebecca Engen: engenr@queens.edu (She specializes in vocal health issues).

Vocal Chord Disorders. Retreived from: http://www.hopkinsmedicine.org/healthlibrary/conditions/otolaryngology/vocal_cord_disorders_85,P00475/

# Musical Performance Anxiety

## Introductory Overview

The purpose of this module is to address a common experience among college students: performance anxiety. By completing this module you will learn common symptoms and underlying factors of performance anxiety, as well as ways of coping with performance anxiety.

If you have concerns about anxiety and would like additional information beyond what is included in this unit, consult a licensed medical professional. You may also contact the Health & Wellness (URL: http://www.queens.edu/Student-Life/Health-and-Wellness-Services.html).

## Musical Performance Anxiety (MPA)

Performance anxiety is common among college students (Lutz, 2008; Nagel, 2010). It can happen when you are taking a test or giving a presentation. Anxiety is not age or experience depended, meaning that just because you have taken tests or you have lots of experience performing you will not get anxious about the next one. The experience of performance anxiety is physical, emotional and cognitive and can have devastating professional and personal effects (Nagel, 2010).

Musicians have a unique relationship to performance anxiety. Musical performance anxiety (MPA) is a condition that affects musicians of all ages (Levy, Castille, & Farley, 2011). In fact, it is a *prevalent problem* among musicians (Nagel, 2010). Untreated, it can have a devastating effect on careers. MPA is defined as "the experience of persisting, distressful apprehension about and/or actual impairment of, performance skills in a public context, to a degree unwarranted given the individual's aptitude, training, and level of preparation " (Levy et al., 2011, p. 34). MPA is not butterflies in the stomach before a recital. MPA is more intrusive, intense, persistent or chronic. It doesn't happen only once or only every so often and is not related to how prepared a person is for their recital or jury.

## Who is at Risk?

Each individual may experience MPA in different ways. Researchers found that at least half of all musical performers, regardless of age, gender, and experience level, report problems and various symptoms associated with MPA (Levy, Castille, & Farley, 2011). People with certain personality traits (or basic tendencies towards a particular quality) are more likely to experience MPA (Cox & Kenardy, 1993; Kenny, Davis, & Oates, 2006; Osborne & Kenny, 2008; Steptoe & Fidler, 1987). Those may include:

- Trait anxiety – Overall tendency to worry and fear across several situations accompanied by distorted interpretations of events as threatening (c.f., Gidron, 2013)
- Perfectionism – Striving for errorless performance; setting high standards that might be excessive; self-critical, over concerned about criticism of others
- Excessive need for control

- Neuroticism – Tendency to experience negative emotional responses to challenges (c.f., Lahey, 2009)
- Introversion – Tendency to focus on internal thoughts and feelings
- Social phobia – Fear of being embarrassed or judged by others (c.f., NIH, 2013)

Overall, individuals who are high in negative affect or tend to have negative thought patterns are more at risk of experiencing musical performance anxiety.

## Symptoms of MPA

MPA is a psychophysiological event, meaning the autonomic nervous system is involved initiating and maintaining symptoms. MPA goes beyond being nervous before a performance. Below is a list of physical symptoms (Lutz, 2008):

- Pounding heart
- Blood pressure rises
- Intense butterflies in the stomach
- Sweaty palms
- Dry mouth
- Muscle tremors/shaking
- Quivering lips
- Breaking voice
- Pupils dilate
- Surge in adrenaline-like chemicals related to the fight or flight response

MPA effects more than our body, it impacts our mind as well. Below is a list of cognitive and psychological symptoms (Wilson & Roland, 2002):

- Technique lapses
- Memory lapses
- Increase in negative self-talk
- Preoccupation about "not being good enough"
- Fear of humiliation
- "Catastrophising" – Believing that minor errors may have catastrophic consequences
- Belief that you must be perfectly competent at musical performance to be a worthwhile person
- Guilt for experiencing pleasure when performing well

The terrible irony is that these MPA symptoms CAN indeed impact the quality of a performance!

## Important Underlying Factors in MPA

There are psychological, social and financial issues associated with MPA (Nagel, 2010). Most adult professional performers began instrument lessons in early childhood. The average age musicians begin training is 10 years old (Nagel, 2010). Thus, those who choose to pursuit a

career in music probably have invested a great deal of time, money and energy into developing their craft. This time investment also means that performance issues may have begun years ago and that *maybe* they have developed unhelpful habits associated with coping with normal anxiety or MPA (Nagel, 2010).

It is also important to know that the "work harder" ethic does not apply when dealing with performance anxiety (Nagel, 2010). MPA is NOT the same as not being prepared. Yes, if a person has a music jury and did not practice, they may worry that their fingers won't "do" that hard run, or have trouble remembering the lyrics. That worry and nervousness is associated with how prepared, or unprepared a person is. However, if a person can play the music beautifully on their own, but when they show up for their jury, or when they think about performing in front of others and experience the symptoms listed earlier, then they might be experiencing MPA.

Some people abandon or redirect their careers because of MPA (Nagel, 2010). This decision to change careers can have monumental implications. Changing careers because of MPA doesn't mean that a person is not a good musician or does not love playing music. However, they might be unable to cope with the stage fright of performing for others. If you perform as a musician, whether as a music therapist in front of clients and their family or at a recital or at a paying concert, it means that you have to demonstrate competence in front of others. Thus, understanding and seeking treatment for MPA is pertinent to self-care and pursuing a career as a musician.

## Treating MPA: One size does not fit all

There are two *main* researched treatments: psychological therapy and medication. There are many versions of psychotherapy and counseling to address MPA. Research indicates that counseling can help musicians cope with MPA. For example, many articles have been published on the use of cognitive-behavioral therapy and psychodynamic therapy for helping musicians with MPA (Brugues, 2011; McGinnis & Milling, 2005, Nagel, 2010). Other therapy treatments include biofeedback, hypnosis and perhaps most interesting: music therapy (Brugues, 2011; Kim, 2008; Montello, 1989).

Some people also use medications to help them cope with symptoms. Medications include beta-blockers, anti-anxiety or antidepressant medications (Nagel, 2010; Park, 2010). Use of medication should be concurrent with therapy; a doctor specializing in treating anxiety should prescribe those medications.

However, there are some experiences that people report being helpful that are beyond therapy and medication. Routinely practicing meditation is a common technique that some musicians report as useful (Nagel, 2010). Similarly, there are reports that a yoga practice is also beneficial (Stern, Khalsa, & Hofmann, 2012).

There are also study findings indicating that social support networks can be helpful when coping with MPA (Park, 2010; Schneider & Chesky, 2011). Musicians, who report having people who care about them, encourage them and help them calm down, are better equipped to cope with

MPA than those who report little perceived social support (Schneider & Chesky, 2011). Park (2010) also found a relationship between spirituality and coping with MPA: when a person is experiencing MPA, his or her spirituality is negatively impacted.

## Prevention

Your music instructor is here to help. Your music instructor can be sensitive towards any issues you are experiencing associated with performing. Also your instructor knows what you are capable of and assigns music that is appropriate to your level of musicianship. They are here to support you and see you be successful, not to set you up for failure! However, they are not a therapist and so may refer you to someone is who.

If you are concerned that you may have MPA, then find out. We don't want you to suffer. The sooner issues are acknowledged the better! Self-report psychometric measures (i.e., scales that indicate symptoms or behaviors associated with having MPA) do exist in the literature (e.g., Barbeau, 2011). If you choose to access and complete such measures it is important not to attempt to interpret the results yourself. We advise sharing the results with a healthcare professional.

## Conclusion

MPA is a real issue and experience for musicians. The symptoms can be physical, cognitive and emotional. If untreated, the experience of MPA can greatly intrude on a musician's life and even stop careers in music. The symptoms are problematic and can impact how a musician plays their instrument and performs music. Talk to your music instructor, your primary doctor, or the health care professionals at the Queens University of Charlotte Health & Wellness Center if you are concerned you might have MPA.

If you would like to explore the opinions available through the health and wellness center at queens, here is a link:
http://www.queens.edu/Student-Life/Health-and-Wellness-Services.html

## References


Barbaeu, A. K. (2011). Performance anxiety inventory for musician (PerfAIM): A new questionnaire to assess music performance anxiety in popular musicians. Doctoral Dissertation. McGill University, Montreal.

Brugues, A. (2011). Music Performance Anxiety-Part 2: A Review of options. *Medical Problems of Performing Artist, 26*(3), 164-171

Cox, W. J., & Kennedy, J. (1993). Performance anxiety, social phobia and setting effects instrumental music students. *Journal of Anxiety Disorders,7*(1), 49-60. doi:10.1016/0887-6185(93)90020-L

Gidron, Y. (2013). Trait Anxiety. In M. D. Gellman & J. R. Turner. *Encyclopedia of Behavioral Medicine* (p. 1989). New York, NY: Springer.

Kenny, D. T., Davis, P. J., & Oates, J. (2006). Music performance anxiety and occupational stress amongst opera chorus artist and their relationship with state and trait anxiety and perfectionism. *Journal of Anxiety Disorder, 18,* 757-777.

Kim, Y. (2008). The effect of improvisation-assisted desensitization, and music-assisted progressive muscle relaxation and imagery on reducing pianists' music performance anxiety. *Journal of Music Therapy, 45*, 165-191. doi: 10.1093/jmt/45.2.165

Lahey, B. B. (2009). Public health significance of neuroticism. *American Psychologist, 64,* 241-256. doi: 10.1037/a0015309

Levy, J., Castille, C. & Farley, J. (2011). Performance anxiety in the marching arts. *Medical Problems of Performing Artists, 26,* 30-34.

Lutz, B. (2008). Performers vs. anxiety. *New Orleans Magazine, 42*, 44,46.

McGinnis, A., & Milling, L. (2005). Psychological treatment of musical performance anxiety: Current status and future directions. *Psychotherapy: Theory, Research, Practice, Training, 42*, 357-373.

Montello, L. (1989). Utilizing music therapy as a mode of treatment for the performance stress of professional musicians (Doctoral dissertation, New York University, 1989). Dissertation Abstracts International 50, 3175.

Nagel, J. (2010). Treatment of music performance anxiety via psychological approaches: A review of selected CBT and psychodynamic literature. *Medical Problems of Performing Artists, 25*,141-148.

NIH. (2013). *Social phobia (Social anxiety disorder): Always embarrassed.* U.S. Department of Health and Human Services, National Institutes of Health. HIH Publication No. TR 10-4678. Retrieved from: http://www.nimh.nih.gov/health/publications/social-phobia-social-anxiety-disorder-always-embarrassed/index.shtml

Osborne, M. S. & Kenny, D. T. (2008). The role of sensitizing experiences in MPA in adolescent musicians. *Psychology of Music*, 1-16, doi: 10.1177/0305735607086051

Park, J. (2010). The relationship between musical performance anxiety, healthy lifestyle factors, and substance use among young adult classical musicians: Implications for training and education. (Doctoral dissertation, Columbia University, 2010). ProQuest Dissertations Publishing, 3424899.

Schnieder, E. & Chesky, K. (2011). Social support and performance anxiety of college music students. *Medical Problems of Performing Artist, 26*(3), 157-163.

Steptoe, A., & Fidler, H. (1987). Stage fright in orchestral musicians: A study of cognitive and behavioral strategies in performance anxiety. *British Journal of Psychology*, *78*, 241-249.

Stern, J., Khalsa, S., & Hofmann, S. (2012). A Yoga Intervention for Music. Performance Anxiety in Conservatory Students. *Medical Problems of Performing Artists, 27*, 123-8.

Wilson, G. & Roland, D. (2002). Performance Anxiety (pp 47-61). In G. D. Wilson, G. D., D. Roland, D., R. Parncutt, R., & G. E. McPherson (Eds.) *The science and psychology of music performance.* Oxford: Oxford University Press. DOI:10.1093/acprof:oso/9780195138108.003.0004

# Appendix

# Additional Information/Handouts About Vocal Health