**Office: Environmental Safety, Health and Risk**

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**Related Policy or Policies: FAD.085**

**Revision History**

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1. **Purpose**

To give guidance for health and safety direction for the Music Program.

1. **Definitions**

The mission of the Music program at Southern Oregon University is to develop our students’ creative and technical abilities and prepare them to perform, teach, create, and support music-making in their communities throughout the world. We support music as part of a liberal arts education at Southern Oregon University by fostering the joy and discipline of learning, encouraging the exploration of diverse cultures, developing the ability to collaborate, and by preparing students to make music a meaningful part of their lives.

**C. Procedures**

The National Association of Schools of Music (NASM) and the Performing Arts Medicine Association (PAMA) have developed a comprehensive overview of hearing, neuromuscoskeletal, and vocal health issues for postsecondary schools and departments of music. Information of a medical nature is provided by PAMA; information regarding contextual issues in music programs, by NASM. The following information is drawn from Basic Information on Hearing Health: Information and Recommendations for Faculty and Staff in Schools of Music – NASM/PAMA: November 2011 and Basic Information on Neuromusculoskeletal and Vocal Health: Information and Recommendations for Faculty and Staff in Schools of Music – NASM/PAMA: July 2013 DRAFT.

#### Hearing Health, Hearing Loss and Preventative Action

The hearing system can be injured not only by a loud blast or explosion, but also by prolonged exposure to high decibel levels of sound. Music of any type and source at high volume that exceeds daily exposure levels and time periods is dangerous. Prolonged exposure to any noise or sound over 85 decibels can cause hearing loss. Over time, Noise-Induced Hearing Loss (NIHL), which is often permanent, can be the result.

In many cases, musicians are exposed to elevated levels of sound when they rehearse and perform. Such exposure alone does not equal automatic risk of hearing loss. There are many factors involved in benchmarking and determining the risk of exposure. For musicians, managing hearing health starts with understanding basic facts and avoiding the most obvious problematic situations. Like most other decisions in advanced music making, thoughtful judgments about what to do and what not to do for yourself and for others involve gaining in-depth knowledge and applying it with sophisticated understanding.

#### Basic Protection for Musicians

In general, an environment is considered to be risky when it is so loud that one must shout to be heard, especially if such loudness is sustained. However, it is not always possible to avoid loud environments. In those situations, musicians may consider the use of earplugs, earmuffs, or acoustical sound shields.

Other cautionary measure within one’s control include:

* avoiding situations likely to pose a danger to hearing health
* refraining from certain activities that can endanger hearing mechanisms; maintaining a safe distance from sources of loud noise
* at loud concerts or events, sitting or standing a safe distance from the stage and from speakers or other amplification devices
* keeping MP3 players and other listening devices at “safe” volume levels; taking care with in ear monitors
* taking breaks from exposure to elevated noise levels.
* The human neuromusculoskeletal system is comprised of the nervous system, the muscular system, and the skeletal system. Together, these systems support the body’s physical structure and enable movement. Good health and healthy behaviors are important to all musicians, regardless of instrument and area of specialization. A basic understanding of vocal health is essential for all musicians, as all musicians use their voice in speaking, and many are considered professional voice users in their roles as conductors, coaches, teachers, etc.
* The various neuromusculoskeletal and vocal disorders that affect musicians have many varied contributing factors. Some may be genetic in nature or result from an infection. Others may be the result of trauma or injury. Still others are related to certain behaviors, either in isolation or those that are repeated over time.
* Musicians coping with or developing certain neuromusculoskeletal conditions, complications, or disorders may find that they have a negative impact on their ability to play, sing, and practice music. Preventative measures need to be taken by individual musicians and institutions where musicians study and work.
* There are several factors that put musicians at a higher risk for injury: Rest (days off) is relatively rare, and practice routines are often physically demanding and time-intensive. Decisions about practice and performance play an important part in the neuromusculoskeletal health of musicians, but numerous factors contribute to an individual’s neuromusculoskeletal fitness.
* The causes and contributing factors of neuromusculoskeletal disorders vary, but they generally fall into the one of the following categories: (1) genetic or related to a pre-existing medical condition, (2) trauma– or injury-related, (3) behavior-related.
* Common symptoms of neuromusculoskeletal disorders include pain, stiffness, aching, throbbing, cramping, and muscle weakness. Some symptoms or disorders may be permanent, while others may be temporary. Those disorders that are temporary may respond well to rest and/or behavior modification. Sustained behavior modification may lead to the elimination or reduction of certain symptoms or disorders.

#### Overuse, Misuse, and Abuse

* The human body has certain physical limits. Exceeding these limits can often lead to injury. In the arts-medicine arena, overuse is defined as a practice or activity in which anatomically normal structures are used in a so-called normal manner, but to a degree that has exceeds their biological limits. Such overuse produces certain physical changes, often accompanied by corresponding symptoms or complaints. The degree of excessive activity needed to produce these results varies from person to person and seems to be related to a person’s individual anatomy and physiology.
* Misuse is defined as a practice in which anatomically normal structures are used in an abnormal manner and/or to an excessive degree, sufficient to produce specific symptoms. Such improper use of these structures places certain bodily structures under stress.
* Abuse should be considered as a causative or contributing factor when an activity is performed not only excessively (overuse) or improperly (misuse), but also in a conscious, willful manner. Such self-imposed abuse often produces deleterious physical effects. Under certain circumstances, both overuse and misuse can turn into abuse. A common example of abuse is “playing through the pain.” This abuse involves persisting in long intervals of practice or performance in the face of pain without appropriate rest breaks or activity modification. Some examples of vocal abuse in singers include repeated instances of singing too loudly or singing out of range. Abuse may also be the use of dangerous substances. Pain serves an important psychological function by letting one know there is something wrong. Ignoring or masking the pain with analgesics (Tylenol, Ibuprofen, etc.) does not eliminate the problem, and can actually make the situation worse by taking away important indicators.

#### Genetic Factors

* ***Hypermobility***For instrumentalists, the most common genetic factor influencing behavior-related neuromusculoskeletal disorders is hypermobility. It is also known as joint hyperlaxity or the trait of being “double jointed.” Such instability of certain joints may predispose an individual to muscle pain syndromes and/or tendinitis, an inflammation of the tendon. Hypermobile joints possess a greater than normal range of motion. Individuals with hypermobile joints have the tendency to compensate for the instability of the joint by using more muscle tension when completing movements or tasks involving the joint. While this extra muscle tension allows for better control over certain movements, such tension can actually increase one’s risk of damaging or straining a muscle. Individuals with hypermobile joints are generally advised to monitor and actively reduce the amount of tension that they carry in their muscles. Specific strengthening exercises can also help, and in some instances, people with hypermobile joints may be well served by external methods of joint support, such as small ring splints or tape.
* ***Intrinsic Factors***
Certain intrinsic factors, such as a person’s specific anatomy (height, hand size, lung capacity, joint hypermobility, vocal range/tessitura/timbre, etc.) cannot be modified. It is important to take one’s anatomy into account when developing technique. Other intrinsic factors, such as stress/psychological health and motivation/effort can be modified. Musicians, like anyone else, are more susceptible to injuries, pain, etc. when under stress and/or depressed. Many of the neuromusculoskeletal problems for which musicians are at risk can, if they become chronic, contribute to a situation that may lead to depression. It is important for musicians to recognize the importance of their psychological health as a part of their overall physical health. Improving one’s muscle strength and endurance depends on motivation and consistent effort. Exercise and conditioning are important. In some instances, musicians may need to seek expert guidance from a physical therapist, vocal coach, or other specialist.
* ***Extrinsic Factors***
Extrinsic factors that may not be changed include assigned musical repertoire, venue, and instrument. Extrinsic factors within one’s control include time spent playing or singing (practice time, frequency and nature of rest during practice sessions, practice time related to building stamina, and approach to practice for technically demanding passages) and non-related music activities (e.g. fitness activities that can place excessive demands on the neuromusculoskeletal system, loud social events, physical or vocally demanding places of employment, etc).

#### Special Considerations for Marching Band\*

Marching music is an important part of many colleges and universities. The marching musician must not only be able to play an instrument at a high level of skill, but do it while moving along a street or across an athletic field, often at rapid rates and with irregular movement patterns. Additional physical capabilities are necessary for this to be accomplished without danger. Marching musicians require high levels of physical conditioning, strength, and endurance; they must be in good general health and physically fit.

Additionally, training in marching music produces an additional litany of activity-related physical disorders that must be considered in any school’s health program. Problems unique to marching music include lower extremity injuries such as sprained ankles, toe contusions, and knee strains. Carrying heavy instruments places a great physical demand on the neck, torso, lower back, and legs. Training usually occurs outside during the summer, sometimes in high heat and high humidity. Sunburn and dehydration can occur all too easily in the absence of preventative measures. Finally, marching units are usually much larger than most indoor ensembles, and their sound levels often exceed recommended levels, especially during long rehearsals. Times of rest and rehydration are vital for marching units.

Special consideration should also be given to the Southern Oregon climate, which can often be excessively hot and humid. The sun is also intense, and precautions should be taken to prevent sunburn and skin damage.

#### Neuromusculoskeletal Issues Affecting the Voice

***Phonatory Instability***
Phonation is the process by which air pressure generated by the lungs is converted into audible vibrations. Phonation (audible speaking or singing) occurs when air from the lungs passes through the vocal folds, which are located 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. Phonatory instability often manifests itself as an unsteadiness, hoarseness, or roughness of voice. The condition can be short or long term. Short-term causes of phonatory instability include fatigue, certain medications, drug use, and anxiety. These problems tend to resolve rapidly with removal of the cause, but remain if the causative agent fails to be eliminated. Over-the-counter allergy medications, antidepressants, and high-caffeine drinks, which stimulate the nervous system, can cause vocal tremors, a form of phonatory instability.

***Vocal Strain and Vocal Fold Injury***
Misuse or overuse of the voice, whether by singing or speaking, can produce vocal strain or injury. Voice misuse includes, but is not limited to: speaking/singing at the extremes of the vocal range, speaking/singing at extreme dynamic levels (both soft and loud), attempting repertoire that is beyond the individual’s stage of vocal maturity and development, and improper technique, especially as it relates to certain vocal styles such as belting. Prolonged misuse and overuse can lead to vocal fold injury and may require specialized treatment and rehabilitation.

#### Preventive Measures for Professional Voice Users and Singers

* Warm up before and cool down after voice use. Instrumentalists who use their voices in professional capacities should learn basic exercises to ensure vocal health and longevity.
* Take breaks as needed, or every half hour. During break, rest your voice by not talking.
* Always use proper technique, including factors that relate to alignment, respiration, phonation, resonation, and articulation.
* Allow yourself time to recover from injuries and illness. Pushing through when you don’t have to may make the injury or illness much worse.
* Put your physical and emotional health first. Get adequate sleep, good nutrition, regular exercise, and take time for yourself. Make yourself the priority and seek help if you need it. Your voice will not work if you are running on empty.
* Hydrate with water, and limit consumption of caffeinated and alcoholic beverages that can deplete the vocal folds of needed lubrication.
* Avoid smoking and exposure to second-hand smoke. Smoke is an irritant that can irritate and dry out the lining of the larynx. Smoking is also detrimental to lung function, which can make breathing, speaking, and singing more difficult.
* Be aware that medications can have strong negative effects on the voice. Many antihistamines can severely dry out tissues and membranes of the vocal mechanism, often leading to hoarseness or other undesirable symptoms.
* Avoid dry air environments such as forced heat or air conditioning.
* Avoid yelling, throat clearing, voiced coughing. These behaviors are extreme to delicate vocal folds and can result in injury.
* Use amplification systems when appropriate.

Singers should also:

* Limit excessive practice time by setting daily limits and varying repertoire during practice sessions.
* Avoid excessive repetition of difficult passages
* Sing repertoire that is appropriate to your vocal maturity. Follow the guidance of your voice teachers, coaches, and conductors who know your voice and have your vocal health in mind.
* Build stamina slowly over time by gradually adding time to your practice sessions

#### General Hygiene for Instrumentalists

The Music Program would like to thank the Associated Board of the Royal Schools of Music, the Canadian Network for Health in the Arts, Butler University for the following information.

#### Instrument Hygiene

While the possibility of transmission of the above bacteria and viruses is not a real consideration, it is apparent that there should be a protocol with regard to shared musical instruments. Sharing of instruments is routine in music schools, where students practice and perform on borrowed instruments throughout the year. In our discussion with our consultants, certain basic considerations and recommendations for standard operating procedures regarding shared instruments were recommended as follows:

1. All musicians or students should have their own instrument if possible.
2. All musicians or students should have their own mouthpiece if possible.
3. All students and faculty sharing reed instruments must have their own individual reeds. Reeds should NEVER be shared.
4. If instruments must be shared in class, alcohol wipes or Sterisol germicide solution should be available for use between different people.

#### Mouthpieces

The mouthpiece (flute headjoint), English Horn and bassoon bocal, and saxophone neck crook) are essential parts of wind instruments. As the only parts of these instruments placed either in or close to the musician’s mouth, research has concluded that these parts (and reeds) harbor the greatest quantities of bacteria.

Adhering to the following procedures will ensure that these instrumental parts will remain antiseptically clean for the healthy and safe use of our students and faculty.

#### Cleaning the Flute Head Joint

1. Using a cotton swab saturated with denatured, isopropyl alcohol, carefully clean around the embouchure hole.
2. Alcohol wipes can be used on the flute’s lip plate to kill germs if the flute shared by several players.
3. Using a soft, lint-free silk cloth inserted into the cleaning rod, clean the inside of the headjoint.
4. Do not run the headjoint under water as it may saturate and eventually shrink the headjoint cork.

#### Cleaning Bocals

1. Bocals should be cleaned every month with a bocal brush, mild soap solution, and running water.
2. English Horn bocals can be cleaned with a pipe cleaner, mild soap solution, and running water. Be careful not to scratch the inside of the bocal with the exposed wire ends of the pipe cleaner.

#### Cleaning Hard Rubber (Ebony) Mouthpieces

1. Mouthpieces should be swabbed after each playing and cleaned weekly.
2. Select a small (to use less liquid) container that will accommodate the mouthpiece and place the mouthpiece tip down in the container.
3. Fill the container to where the ligature would begin with a solution of half water and half white vinegar (50% water and 50% hydrogen peroxide works too). Protect clarinet mouthpiece corked tenons from moisture.
4. After a short time, use an appropriately sized mouthpiece brush to remove any calcium deposits or other residue from inside and outside surfaces. This step may need to be repeated if the mouthpiece is excessively dirty.
5. Rinse the mouthpiece thoroughly and then saturate with Sterisol germicide solution. Place on paper towel and wait one minute.
6. Wipe dry with paper towel.
7. Note: Metal saxophone mouthpieces clean up well with hot water, mild dish soap (not dishwasher detergent), and a mouthpiece brush. Sterisol germicide solution is also safe for metal mouthpieces.

#### Cleaning Saxophone Necks (Crooks)

1. Swabs and pad-savers are available to clean the inside of the saxophone neck. However, most saxophonists use a flexible bottlebrush and toothbrush to accomplish the same results.
2. If the instrument is played daily, the saxophone neck should be cleaned weekly (and swabbed out each day after playing).
3. Use the bottlebrush and mild, soapy water to clean the inside of the neck.
4. Rinse under running water.
5. Sterisol germicide solution may be used on the inside of the neck at this time, if desired (not necessary). Place on paper towel for one minute.
6. Rinse again under running water, dry, and place in the case.
7. If using pad-savers, do not leave the pad-saver inside the neck when packed away.

#### Cleaning Brass Mouthpieces

1. Mouthpieces should be cleaned monthly.
2. Using a cloth soaked in warm, soapy water, clean the outside of the mouthpiece.
3. Use a mouthpiece brush and warm, soapy water to clean the inside.
4. Rinse the mouthpiece and dry thoroughly.
5. Sterisol germicide solution may be used on the mouthpiece at this time. Place on paper towel for one minute.
6. Wipe dry with paper towel.

#### Other Instruments

1. String, percussion, and keyboard instruments present few hygienic issues that cannot be solved simply by the musician washing their hands before and after use.