

Athletes and the Arts®

Integrating the Science of Sport and the Performing Arts



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Athletes and the Arts® links the communities of sport athletes and performing artists through collaborative exchange and programs focusing on wellness, training and performance research. Athletes and the Arts® recognizes that many performers are athletes whose health and performance can benefit from knowledge, programs and techniques developed for sport athletes.

Goals:

- Create opportunities for performing artists and sport athletes to access and benefit from the established research, training and education of each discipline.
- Provide access to resources that meet the unique wellness, health care and performance needs of performing artists.
- Create a sustainable national initiative addressing the needs of performing artists.

Both Athletes and Artists:

- Practice or play every day
- Play through pain
- Perform at all times of day or night
- Compete in challenging environments
- Enjoy little “off-season”
- Feel strong pressure to succeed
- Risk career-threatening injury

Artists Face Additional Challenges:

- Noise-induced hearing loss
- Focal dystonia
- Performance anxiety



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Key Areas of Research:

- How to measure optimal performance?
- How much practice is too much?
- Metabolic aspects of performing (To better tailor nutrition and physical training needs)
- Can basic core, aerobic exercise and flexibility increase longevity and performance? (Consider the instrument weight and posture needed to play)
- Applicable cross-training to minimize overuse
- Hearing safety and prevention

How You Can Get Involved:

- Help one of the 600+ schools certified by the National Association of Schools of Music develop health and wellness standards
- Write a blog for the Athletes and the Arts® website
- Use Athletes and the Arts educational information within your local community
- Spread the word within your social media networks



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Musicians and Noise-Induced Hearing Loss



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Issue

As an art form, music is a human expression performed solo or in groups, un-amplified or amplified. Musical sounds can exceed daily exposure limits, and musical activities can be dangerous to hearing. Artistic freedom is both appreciated and valued. However, this freedom must not be used as a distraction from concerns related to musician health and safety. Sound levels in both the public domain and U.S. music school programs are currently not governed by regulatory policies. In response, the CDC is now calling for policies designed to protect musicians from excessive exposure to musical sounds produced during band, choir, and orchestra classes because:

- 50% of musicians may have problems with hearing loss.
- Listening to music, live or recorded, in performance or rehearsal, can result in significant exposure to high sound levels.
- Risk of injury is based on a combination of sound intensity and duration.
- Hearing loss is cumulative: all sources (24/7) of elevated sound levels contribute.
- Permanent noise-induced hearing loss is irreversible.
- Temporary noise-induced hearing loss is reversible with adequate rest and recovery.

Safe Levels

In the US, experts recommend a daily exposure limit to sound that is no greater than the equivalent to 85 decibels (dB) over an 8-hour period with a 3 dB time/intensity exchange rate. This means for every 3 dB increase over 85 dB, the time exposure is halved to prevent Noise Induced Hearing Loss (NIHL) - 88 dB

for 4 hours max per day, 91 dB for 2 hours max per day or 94 dB for 1 hour max per day. 80 dB = alarm clock or busy street, 90 dB = lawn mower, 100 dB = snowmobile

Guidelines

The Athlete and the Arts Coalition recommends that:

- All musicians, teachers and music schools should be informed/educated about hearing health and the above recommended daily exposure sound levels.
- Sound levels should be monitored by teachers and musicians with the use of dosimeters.
- Rehearsal and performance habits should incorporate the recommended daily exposure sound levels; use ear plugs if necessary.
- A musician should alert any health care professionals of his/her profession during any routine exam and report any NIHL.
- Health care professionals should pay particular attention to hearing when examining musicians and other performing artists.

"It's not just music. I drive my motorcycle, mow the lawn, waterski, power boats ... all the fun stuff can damage your ears. Don't stop doing them. Just protect yourself while doing them. I now wear ear protection and wished I got them years ago. Earplugs are essential."

—Paul Dean, *Loverboy*

More Information

1. Chesky K. 2010. Measurement and Prediction of Sound Exposure Levels by University Wind Bands. *Medical Problems of Performing Artists*: 25(1). 29-34.
2. National Center for Chronic Disease Prevention and Health Promotion—CDC. Noise induced hearing loss - Promoting hearing health among youth. <http://www.cdc.gov/HealthyYouth/noise/index.htm>



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Keeping Your Voice Healthy

The voice professional uses more than just his or her mouth, throat, vocal cords and lungs in producing sound. Although these organs are very important in making vocal sounds, the entire body is involved in the act of producing your voice. Your body is your instrument, and maintaining it in optimal condition goes a long way towards creating beautiful music. Here are some guidelines on keeping singers healthy.

Posture and Alignment

Your voice is the product of air going through vocal cords and the oro-pharyngeal space: the air from the lungs passing through the windpipe and vocal cords, eventually reaching the changeable shape of the throat and mouth produces the many types of sounds we hear in song. Proper alignment and the least amount of tension between the windpipe, throat and mouth make your exhaled air travel more efficiently—this helps you produce vocalized sounds with the least possible tension and stress. Exercises that focus on core strength (all the muscles from the shoulders down to the knees, which include the muscles active during breathing) are important for good postural alignment and breath support when vocalizing.

Warm Up, Cool Down, and Proper Technique

Athletes start their training sessions with gentle stretches and exercises during warm-ups and end with similar moves for cooling down. Singers are no different—the muscles that act on the vocal cords have to be prepared for the task of singing. Aside from vocal warm up, stretching the core muscles should also be included in the warm up routine. Proper technique can help prevent injury and make the singer a more efficient instrument. Adequate breath support and correct technique can reduce tension and decrease the likelihood of straining the vocal cords and muscles involved in producing sound.

Preventing Fatigue: General Conditioning, Sleep, Rest

Preventing fatigue is important in preventing injury. It is more difficult to achieve proper technique when you are tired, which places you at risk for injury. Having adequate overall endurance, getting enough sleep and rest contribute to counteracting fatigue. Aerobic exercise like walking, swimming or running develops endurance and gets your heart and lungs in the best condition possible. Six to eight hours of sleep per night is generally recommended.

Vocal Overuse and Abuse

Vocal rest is important during the singing day. A good rule of thumb is to have 10-minute break for every 50 minutes of rehearsal, and during those 10 minutes talking should be kept to a minimum. Talking and singing when tired, hoarse or ill is

not advisable. Avoid noisy environments where you have to yell or talk loudly, and avoid whispering as well. Using your voice at these extremes will put stress on the vocal cords. A microphone is very helpful when appropriate.

Hydration

Vocal cords are healthiest and most flexible when they are well hydrated. Aside from drinking enough water, singers have to be aware of their alcohol and caffeine intake; these can dry out the vocal cords. A dry environment such as those in hot climates, air conditioned rooms, and in an airplane can also affect the vocal cords. Using a humidifier or a damp towel on the face may help.

Nutrition

A balanced, healthy diet is always recommended for everyone, and not just for singers. Singers do have to pay attention to food and drink that can cause acid reflux, such as high-fat meats and dairy products, citrus fruits, fried food, spicy food, caffeine, and carbonated drinks. If stomach acid travels up the esophagus, it can irritate the vocal cords, causing inflammation and irritation.

Prescriptions and Over-the-Counter Medications

Singers should ask physicians and pharmacists about the effects/side-effects of prescriptions and OTC medications such as antibiotics, antihistamines, decongestants, etc. Taking medicines individually, rather than in combinations of two to four in one pill, is preferred to better manage effective dosages.

Smoking

Tobacco smoke, including second-hand smoke, irritates the vocal cords. It also weakens and damages the lungs. Exposure to smoke increases the risk of lung and throat cancer.

Key References

1. Behlau M, Oliveira G. Vocal hygiene for the voice professional. *Curr Opin Otolaryngol Head Neck Surg.* 2009 Jun; 17(3): p.149-154
2. Timmermans B, Vangerwegen J, De Bodt MS. Outcome of vocal hygiene in singers. *Curr Opin Otolaryngol Head Neck Surg.* 2005 Jun; 13(3): p.138-142
3. Schneider SL, Sataloff RT. Voice therapy for the professional voice. *Otolaryngol Clin North Am.* 2007 Oct; 40(5) p. 1133-49, ix.



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Athletes and the Arts® The Medical Professional



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As a medical personnel, you are accustomed to working with athletes and their injuries, but it is equally important you know how to address the injuries associated with performing artists.

Athletes and the Arts® wants to equip you with an arsenal of tools to ensure you are ready to work with performing artists and their teachers.

Understanding the performing artist is the best way to develop a prevention strategy before a problem occurs:

Observe a Performance:

- This will help you understand the specifics of the activity
- Evaluate posture, ergonomics, weight of instrument and repetition
- Understand the type and volume of practice and performance that may lead to focal dystonia and overuse

Discuss a Typical Week:

- Understand all of the activities in a performer routine including length and intensity of practices and performances



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Hearing Loss:

- Many performers suffer from hearing loss; test for and educate about noise-induced hearing loss

Return to Play

- Just like all other athletes it is important to determine the best timing for return to play
- Work with their teacher to educate the student on this process

Exercise is Medicine®:

- Talk with performing artists and their teachers about incorporating core strength, aerobics and flexibility into their routines to optimize performance and longevity.

Remember all performers are unique. Educate them on the common wellness issues such as sleep, nutrition and hydration, and help them understand that these tips will optimize BOTH performance and health.



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Mental Health in the Performing Arts



Mental health awareness has become a focus of conversation for over a decade. Much of this focus has identified the need for increased support to those who experience mental health concerns. Currently, 1-5 individuals are diagnosed with a mental illness, but far more experience a decline in their mental health at some point in their lives. Certain populations are at high risk to experience mental health concerns; one example is performing artists and athletes who have an even higher rate of mental health disorders such as anxiety, depression, or the misuse/abuse of substances (Kearns Davoren, & Hwang, 2014). Indeed, mental health is an overlooked aspect of the performer's overall health and optimal functioning, which might lead to underutilizing mental health treatment. Imagine if we could shift this mindset in performers and allow them to not only seek mental health treatment when experiencing a decline, but understand the dynamic of building mental wellness.

The Mental Wellness Continuum

Mental health is a critical and often overlooked aspect of performer health and functioning. Many individuals are fearful to discuss their emotional struggles for a variety of reasons: the unknown, the stigma, and/or fear of being labeled “crazy.” It is hard to grasp the emotional turmoil an individual might struggle with because, in most cases one cannot tangibly see the pain or “injury.” However, if one was experiencing a physical injury it would be easy to seek treatment and rehab. The goal is for performers to learn to utilize resources that will build their mental health and allow them to be mentally well. Building awareness to one's emotional and mental health can shift this pattern. You might start by checking in on your mental health, seeking treatment to reduce a mental illness, and utilizing skills to build mental wellness. Performers should be encouraged to rehab their emotional and mental pain just as they would their physical pain.

Things to Look Out For

Various studies have shown that performers are particularly vulnerable to a variety of psychological issues, including:

- performance anxiety
- depression
- stress disorders
- substance abuse
- eating disorders
- sleep problems
- perfectionism
- procrastination

These conditions become symptomatic as a result of either poor coping in response to performance challenges, or in response to other internal (psychological) or external (environmental) life stresses tied to stage of life and other developmental challenges. Any of the following signs and symptoms of mental health conditions should raise concerns and encourage a referral for professional help:

- experiencing a change in mood
- change in sleep or eating
- loss of interest in activities
- constantly feeling jittery, overwhelmed, irritable, or just plain off.

If you experience any of these, reach out to someone. Find a trusted individual and ask them to connect you to a professional who can help you improve your mental health.

It's okay to not be okay, in fact most of us aren't at some time or another! But remember there are a multitude of resources out there that can help you.



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Athletes and the Arts Memorandum of Understanding

Athletes and the Arts is a coalition of sports and performance medical associations, music performance organizations, and related industry partners that have joined together to address and advance the health and wellness issues of musicians and performing artists.

Thank you for your interest in supporting this important work. Your participation in any of the following ways would be greatly appreciated:

- Allowing the coalition to use your name and likeness and statement of support to promote and advance the work of the coalition.
- Engage in educational outreach in-person appearances in schools, at professional conferences, and other public events.
- Participate in promotional video endorsements of the work of the coalition for use on its website, social networks, and outreach events.
- Provide a link to the coalition's website from your website.
- Share the work of the coalition through your social media channels.
- Mention your association with the coalition and its health and wellness mission on your website and in your public appearances.
- Include awareness materials regarding the work of the coalition at your merchandise table at live events.
- Recommend other artists, performers and athletes who may be interested in supporting or endorsing the work of the coalition.

The most important outcome of your participation is to increase awareness of the health and wellness issues of performing artists, from nutrition and exercise to injury prevention, diagnosis, and rehabilitation. This includes hearing health, the dangers of overuse, and a recognition of the physical demands facing all musicians and performers.

We will publicize your support and your work in our communities. The combined membership of our educational, medical, and industry partners exceeds several hundred thousand people.

This is a non-binding agreement and you may withdraw your support at anytime. We will remove your name, likeness, and promotional materials from our website and printed materials at your request. We will not use your name and likeness without your approval.

Thank you very much for support and willingness to participate in the work of the coalition. We are dedicated to assisting all musicians and performing artists in all ways related to their physical and mental ability to sustain themselves in their creative work that is so important to the economic and cultural development of our society.

Your signature below signifies you share our dedication to this important work.

Name: _____ Date: _____ Signature: _____

Name: _____ Date: _____ Signature: _____

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The Performing Artist



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Athletes and the Arts® recognizes performers as athletes whose health and performance can benefit from knowledge, programs and techniques developed for sport athletes.

The tips in this handout will help you become a healthy and happier performer.

Establish a Relationship with a Medical Professional Before You Need It

- Perform or practice for them to allow them to understand your craft
- Document and share a week of activity so they understand your volume and intensity
- Check your hearing by an audiologist to establish a baseline and regularly after that.
- If injured, discuss your return to play with your medical professional and teacher

Evaluate Your Exposure to Sound:

- Noise-induced hearing loss is common for many performing artists.
- Have your hearing checked regularly
- Work with your medical professional and teacher to develop a prevention strategy



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Care for “Core Instrument:”

- Know the importance of hydration, nutrition and sleep!
- Establish core strength, aerobics and flexibility for optimal health, longevity and performance
- Targeted strength exercises can help support the weight of your instrument

Prevent Injuries:

- Talk with your teacher or agent to develop a practice and performance schedule that is in perspective
- Avoid too much too soon; know how much is enough

Cross-Train:

- Establish activities that complement your mental and physical skill to avoid overuse and burnout
- Consider activities that may improve your performance by increasing aerobic capacity



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Athletes and the Arts® The Teacher



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As a teacher you play an integral part in the health of the performing artist athlete. Athletes and the Arts® wants to equip you with an arsenal of tools to ensure your students have a long and healthy life with their art.

What you can do:

Promote Joy of Performance:

- Performing can be daunting for some of your students, show them the benefits of performing
- Provide a range of performance opportunities. When a student experiences various performance environments they will feel comfortable during future endeavors.

Care for the "Core Instrument:"

- Educate on the importance of hydration, sleep and nutrition
- Caring for the body will maximize health and longevity of the performer

Select an Appropriate Repertoire:

- It is important to challenge the student for growth in their work
- Selection should take performers physical and mental well-being into consideration, do not push them to extremes



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Exercise is Medicine®:

- Encourage core strength, aerobics and flexibility to optimize performance

Show Students Effective Practice Strategies:

- Encourage students to problem-solve and avoid mindless practice: Practice with Purpose
- Break up practice sessions to enhance concentration & avoid overuse

If a Student is Injured:

- Ask appropriate questions to steer medical consultation if needed
- Work with medical professionals to determine the best process for their return to play



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What's the Issue?



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There is limited peer-review epidemiology research on performing arts injuries. However, from what exists and many anecdotal reports, it is obvious there is a need for awareness and appropriate medical support for prevention efforts. Long hours of repetitive motion are real threats for overuse injuries. The competitive nature of the profession incents many to “perform through pain” in order to sustain their careers.

Dance

67 to 95% of professional ballet and modern dancers report at least one injury (mostly foot and ankle overuse) per contract year.

Orchestra

75% of orchestra instrumentalists will develop performance-related musculoskeletal disorders (PMRD) during their lifetimes,

- Only 40% reported full recovery.
- High levels of performance anxiety and other psychological issues also were reported.

Piano

- 33% of keyboard players in one study suffer from upper extremity musculoskeletal disorders
- 65% of 341 professional and amateur pianists currently suffered from or previously had a repetitive strain injury

Marching Band/Drum Corps

64% of a 2013 World Class Drum Corps reported stress fractures, due in part to intricate marching maneuvers and choreography at speeds exceeding 200 beats per minute.

- More than 66% of these stress fractures occurred in the foot and pelvis

- Color guard members had twice as many individual pain sites as wind players in marching band.
- Marching bands can produce sounds at the same decibel level as a construction site

Voice

>50% of surveyed occupational voice patients reported that voice problems had negatively affected past (53%) and current (49%) work abilities

- 76% of these respondents believed voice problems would negatively affect future work
- 65% of these patients described moderate to severe depression due to vocal impairment

Hearing Loss

Musicians are at risk for Noise-Induced Hearing Loss (NIHL) (up to 45% of all musicians according to one study).

- Professional orchestra musicians exhibit a greater incidence of NIHL than the general population.
- 53% of surveyed professional orchestra members would have exceeded permissible daily noise exposure during their 2.1 hours per day/5 days a week practice—with volumes ranging between 60-107 and peaks between 101 and 130 decibels.

New Orleans Musicians Clinic (NOMC) data

83% of all NOMC patients receive medication for at least one chronic condition.

- Top chronic diagnosis for over 2,500 musician patients: Hypertension, Depression and Diabetes.
- 67% of NOMC patients did not have a regular health provider before becoming an NOMC patient.
- 56% of these patients went to the ER when sick and did not seek follow-up care before becoming NOMC patients.



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