

## Practice and Performance Related Injuries: Preventing and Treating Injuries Through Smart Practice Techniques

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“No pain, no gain.” Most of us have heard this phrase in relation to playing clarinet or to playing music in general. However, pain can be a symptom of a performance related injury and can prevent or slow technical and musical progress. How we practice, how often and how long we practice, and how we use and misuse our bodies while playing profoundly affects our ability to play efficiently and without pain.

I injured myself more than 12 years ago, and have spent the time since then researching performance related injuries and experimenting with treatments. My first injury was identified as tendinitis, in large part because the doctors could not come up with a better diagnosis. A few years later, I developed bursitis in my right shoulder, which is a swelling of a fluid-filled sack in the joint. One injury led to another, and without guidance from a performing arts medical specialist, I spent years injuring and reinjuring myself instead of recovering.

One of the most important aspects of my life as a performing musician is how I practice. At the time of my first injury, my motto was that you can never practice too much. Unfortunately, I was not practicing smart; nor was I taking care of myself while playing. Long hours of playing, poor body usage, no warm-ups, and a shortage of breaks during practice contributed to my injury and to years of chronic pain and discomfort.

Over time, I changed how I practice step by step to overcome injury and achieve more in less time. I consulted sources such as Janet Horvath's *Playing (Less) Hurt*, Barbara Paull and Christine Harrison's *The Athletic Musician*, and Howard Klug's *The Clarinet Doctor* for information. The techniques for healthier practice I will discuss in this paper are warm-ups and cool-downs, taking breaks, organizing practice for consistency and variety, broadening our mental focus beyond the notes on the page, and healthy mental practice. Utilizing these techniques and customizing them to individual needs can help prevent or treat injury. Additionally, emphasizing quality of practice over quantity will allow us to accomplish more in less time and with less work.

In this paper, I focus on musculoskeletal injuries, which affect muscles and connective tissues, such as tendons. Symptoms for these types of injuries include pain, tingling, weakness, swelling, and stiffness. Pain in one area, such as the hand, can be related to an injury in another area, like the elbow or shoulder. For this reason, it is important to consult with a medical doctor, especially a performance injuries or sports medicine specialist, if symptoms occur, and to design a balanced exercise, stretching, and practice routine with a professional's guidance. Common musculoskeletal injuries for clarinetists are tendinitis and bursitis, which involve often painful swelling of tendons or bursa respectively, and can lead to nerve impingements, such as carpal tunnel syndrome. Because our right thumbs bear the weight of the clarinet, we are also at risk of developing De Quervain's Tenosynovitis, which involves swelling of the tendons that control the thumb and can cause pain in the thumb that may spread up through the wrist. To help prevent or treat De Quervain's, try using support devices, like neck straps or the FHRED; also consider moving your thumb rest higher on the lower joint of the clarinet to put the thumb in a more comfortable position.

No musician is immune to musculoskeletal injury. During practice, we repeat complex movements over and over. Repetition combined with such factors as poor usage of the body, extremes of temperature, the weight of the instrument, fatigue from other activities, and a host of other daily stresses can lead to injury.

Many musicians think that if we simply relax when we play, we'll be fine. Tension is often considered undesirable. However, using words like tension and relaxation is a balancing act. It's true that too much tension can lead to injury, but complete relaxation is not the solution. We need some tension to move our muscles, and we need some relaxation to keep them supple. In my playing (and in my practice), I like to think of balance—balance in tension and relaxation, balance in literature, and balance in rest and work.

### **Warm-ups and Cool-downs**

Every practice session should begin with a warm-up. You should begin away from the instrument with at least five minutes of physical activity, such as walking, to warm your muscles and increase blood flow through your body. At least five minutes of stretching after this physical activity will help loosen and lengthen your muscles and increase blood flow. How much time you need to spend warming up without and with the instrument can vary depending on anything from your physical health to the temperature—colder temperatures usually necessitate longer warm-ups.

After warming up away from the instrument, you can begin warming up with the instrument. Begin slowly and easily, and gradually speed up and increase your registral and dynamic ranges. When I move from technical exercises to repertoire, I play slowly for the first few minutes. This may mean that I play a slower solo first or that I practice difficult fast passage work slowly. I find that a repertoire warm-up helps ease my body into the demands of difficult literature.

In *Performing Arts Medicine*, Alice Brandfonbrener explains that mentally warming up can work just as well as physically warming up (44). She theorizes that there is a “psychological boost” that accounts for much of the benefit of warming up. In other words, a mental warm-up can prepare us for the mental *and* physical challenges of practice. For instance, mentally focusing on how you feel during your warm-up exercise, stretching, and playing can prepare your mind and body for thoughtful practice. Incorporating deep breathing into warm-ups can calm and focus the mind and help us achieve a balance of tension and relaxation for our bodies. Being mentally involved and focused on your physical warm-up can have layers of benefits from the physical to the psychological that can make practice more efficient.

As with warming up, cooling down is very important. Just like athletes, we need to stretch our tired muscles after practice. Stretching will loosen tight areas and encourage continued circulation, which can cleanse toxins from the body that were produced by strenuous physical activity. Think about the last time you overdid it physically—perhaps you did too much yard work, tried running, or went for a long hike. The next day you probably woke up with sore muscles. That soreness is due in large part to a build-up of toxins in your muscles. Exercise releases these toxins, and a cool-down after exercise can help our bodies continue to expel them from our system. Practice is exercise, so a cool-down can help our bodies make the transition from strenuous activity to relative rest with less physical strain.

As with warm-ups, a cool-down has psychological, as well as physical, benefits. By putting down the instrument, stretching gently, and physically *and* mentally walking away from practice, we give our minds and bodies a much-needed break. I've been guilty more than once of carrying my practicing with me throughout the day. After practicing in the morning, I will think about clarinet, repertoire, and reeds even after I put the instrument away. This is not a break. My mind is still engaged, which means my body is still engaged. I'm still wearing myself out with endless, and often mindless, repetitions. A five minute cool-down helps me let go of the clarinet.

## **Taking Breaks**

While you practice, taking frequent breaks gives your muscles time to recover from the strain of playing. Building mini breaks into your actual practice session can provide different muscles with relief from constant strain. Moving around and stretching during practice sessions also helps keep our bodies limber. Try to keep both feet flat on the floor. Allowing the floor to support your body through your feet reduces excess tension in your low and mid back, which we often overwork trying to support our weight and that of the clarinet. Move forward and backward from the hips and from side to side. When I stop playing, even for a moment, I'll often let one of my arms dangle by my side or gently stretch my fingers or hands. While at rest, moving my head side to side or forward and back and rolling my shoulders helps relieve excess tension. I keep all of my movements and stretches while playing and during warm-ups and cool-downs as fluid and gentle as possible. It should not hurt to stretch.

How much you can safely practice at one time and how long your breaks should be is unique to you. Additionally, other activities, like typing, driving, or household chores, can affect how much you can safely practice. For instance, if you plan to spend several hours gardening over the weekend, it might be necessary to take more frequent breaks or practice for one hour instead of two because of the additional strain gardening puts on your hands and arms.

For me, taking at least a short break every 30 minutes is important. I usually only need five minutes or so to walk around, get a drink of water, and do a few gentle stretches before returning to the instrument. Longer breaks every one to two hours give our muscles time to recover from the workout of practicing. In *Playing (Less) Hurt*, Horvath recommends that these one- to two-hour intervals take place during different parts of the day (228-229, 231). For instance, if you practice for a few hours in the morning, take a break and come back to the instrument in the afternoon or evening.

Horvath also points out that being consistent with the amount of time you practice each day can go a long way toward preventing injury (231). She writes that consistently practicing for one hour each day is safer for our bodies than playing for a half hour one day, three hours the next, none the third day, and so on. Our bodies are overstressed one day and underused the next with this kind of practice routine. Consistent practice from day to day helps our bodies to work more efficiently during our allotted practice times, which helps us to enjoy more productive practice sessions.

Finally, taking a day off each week is also a beneficial break from practicing. Yes, consistency from day to day is important, but one day a week during which you allow your mind and body a rest can protect your body from injury and give your mind a much needed break, too. I often find that after my day off each week I am productive and excited about playing, and sometimes problems I was having during the previous week will seemingly magically disappear, or at least improve. Perhaps this is because my muscles had a chance to rest and are now stronger and faster. Perhaps it's that my mind had time away from intense practice, and I subconsciously worked out some problems. Or perhaps a day of rest simply relieved the physical and mental excess tension that sometimes slows us all down as we over-think and over-practice. Whatever the reason, I find that after breaks, whether five minutes or a day in length, I come back to my instrument feeling refreshed and ready to enjoy playing again.

## **Organizing Practice for Consistency and Variety**

Organizing practice and keeping a practice log can also help prevent or treat injury. You can keep track of so much more than how much you practice and when. A log can help one design each practice session to take advantage of previous gains and try new practice techniques. A log can also provide a place to record how you feel physically and mentally each day during practice. Did you feel stiff after the first

hour? Did your thumb begin to tingle while you practiced something particularly difficult? Keeping a record of how you feel can help you discover trends before a full-fledged injury occurs and can lead you to organize practice in new ways that are more beneficial to your physical wellbeing and your musical progress.

Keeping a practice log can also help us build variety into practice sessions. We can plan to alternate differing repertoire during a practice session and between practice sessions. We can also prevent practicing one piece over and over day after day. Alternating physically demanding material with pieces that are not as hard on the hands can give muscles a break. Klug points out in *The Clarinet Doctor* that varying our practice routine can motivate us and teach us to respond to change and surprise in performance more quickly, so the benefits of variety can extend to the quality of our performances (12-13).

Just like variety of repertoire, variety in how we use our bodies while practicing is important. Alternating between sitting and standing is a common practice technique for clarinetists, with the idea that we must be prepared to sit in an orchestra performance or stand in a solo performance. The benefits of alternating between sitting and standing extend to injury prevention and treatment. Sitting places 50 percent more stress on the low back than standing, no matter how “good” your posture is (Paull, 56-57). Thus, sitting for two hours straight to play our instruments can strain our muscles. Standing can be tiring since we burn more calories when we stand than when we sit. Alternating the two can preserve energy and muscle condition. A forward sloping seat, in which the angle at your hips is greater than the 90 degrees of most chairs, can also relieve muscle stress when you must sit to play.

If you use support devices for your clarinet, you can also alternate these. The average B-flat clarinet weighs about one and three-quarter pounds. That weight balanced on the right thumb for hours can lead to injury. Some clarinetists play with neck straps to take weight off the thumb. However, a neck strap can lead to new problems by transferring almost two pounds of weight to the neck. Another device, the FHRED by Quodlibet, acts like an endpin for the clarinet (as one of my cellist friends points out). It attaches to a ring on the thumb rest, rests on the chair between a player’s legs, and bears the weight of the instrument. Unfortunately, the feeling of relative immobility when using a FHRED can make one feel less in control. Sometimes clarinetists will lean into the instrument rather than bring the instrument to them, compressing their necks. I combat this problem by sitting in a comfortable position, setting the FHRED and instrument on the chair, closing my eyes, and rotating the clarinet to my mouth. Since I cannot see the instrument, I am less likely to compromise my comfortable sitting position for the clarinet. If I miss my mouth and hit my chin or nose, I know I need to adjust the height of the FHRED. Support devices have many benefits, but new body usage problems can crop up with each device. A combination of playing without support, with a neck strap, and with a FHRED, alternating throughout practice or from day to day, can allow a balance between rest and work.

### **Broadening Mental Focus**

Music is more than a collection of dots and lines on a page. Without us, the manuscript and the instrument may be pretty to look at, but they cannot make music. We, the musicians, use these tools to create music. If we learn to focus on more than the printed music and the instrument in our hands, we can build body awareness needed to prevent or treat injury and improve our playing. For example, broadening our mental focus to pay attention to how our entire torso, front to back and side to side, is involved in

breathing can help us balance tension and relaxation and play with better air support. Instead of only seeing the notes on the page, or feeling the keys beneath our fingers, we can focus on our surroundings before, behind, or above us. We can focus on how each muscle group in our body feels as we play and how the muscles and tendons in our fingers connect seamlessly with those of our hands, wrists, arms, shoulders, and backs. A broader focus also helps me when I perform. I work more effectively with other musicians in chamber music settings because I am more fully aware of their physical and musical presence than when I only listen to them play. Since I have practiced paying attention to myself and my surroundings, I am also able to pay more attention to my audience, enjoy their presence, and connect with them through my performance. I gain confidence that feeds back into my practice and inspires me to continue playing.

When practicing, we should look for the best ways to play with ease. Alternate fingerings are an obvious example of easier playing, but taking breaks when we're frustrated, trying to reorganize rhythmic patterns, and rethinking how we use air support are also ways to play more easily. Playing clarinet really well is difficult, but it does not necessarily all have to be hard work. Just as we would never abuse our instruments by throwing them against a wall when frustrated—though we may have thought about it—we cannot abuse ourselves by pushing beyond our physical limits or feeling guilty when we take a needed break. Horvath points out that “injury risk increases with emotional tension” (27). For example, if we continue to practice a difficult passage past the point of total frustration, we can do damage to our bodies in part because we are emotionally stressed. In other words, playing clarinet with a healthy body is linked to playing with a healthy and positive mindset.

Paying attention to how you feel physically while practicing has an added benefit. Because we are mentally committed to the practicing process and how it feels and sounds, we are less likely to mindlessly practice mistakes. We can find easier ways to play because we are quicker to notice when a fingering or the rhythmic organization of a run feels uncomfortable. Again, we see that practicing to prevent or treat injury has the added benefit of improving the quality of our practice.

All the self-awareness in the world cannot catch every nuance of playing, though. Practicing in front of a mirror is a time-honored technique. We have the chance to watch how we play, to see as well as hear progress or problems. Videotaping practice is an even better technique. The video camera can run the entire time you're playing, capturing your sound and movements long after you might have stopped watching yourself in a mirror. It allows you to concentrate on practice now, and you can go back and watch yourself later. It also gives you the opportunity to view your playing from different angles. Have you ever tried to watch yourself practice in profile in the mirror? It's not easy. A video camera can act as your eyes from many angles.

### **Mental Practice**

Many musicians advocate mental practice as a way to improve quickly away from the instrument and avoid injury. They are partially right. Mental practice encourages us to truly think about what and how we are playing. Athletes use mental practice and imagery to perform complex tasks, visualize success, relieve nervousness, or reduce pain. It follows that we, as musical athletes, could experience the same benefits.

Mental practice accesses the same areas of our brains as physical practice. Scientists have found that effective mental practicing can actually work more efficiently than physical practicing, achieving improvements in playing in less time (Dickstein, 950). As neuroscientist Ian Robertson puts it, “the brain, after all, controls the body,” so exercising our brains by visualizing playing, studying scores, and listening

to recordings can improve our playing, even when we do not have the instrument in hand (Begley and Begun).

Too many people, however, leap into mental practicing without thinking about how it really works. The assumption that because we are not holding our instruments, we cannot injure ourselves, is actually false. When we mentally practice, our brains send signals to our muscles just as in physical practice. In a 2007 study, scientists found that subjects' muscles showed the same stimulation when they mentally imagined lifting a weight as when they physically lifted the weight (Guillot). In other words, mental practicing is not a complete escape from physical strain, as one might think. It can be exhausting, both mentally and physically, and it can actually reinforce excess tension in muscles just like one experiences during physical practice.

Mental practicing is an incredibly useful tool that, if used correctly, can enrich practice. If used incorrectly, it can actually increase our chances of performance related injury, or slow our recovery. Many of the techniques I've outlined for physical practice, such as warming up and taking regular breaks, can also help improve mental practice. Incorporating deep breathing and stretching into mental practice, for instance as you listen to a piece or visualize yourself performing, can help you begin to associate feelings of less tension and more balanced movement with your playing. Additionally, a more relaxed state can help us form more vivid images and concentrate more fully while mentally practicing (Dickstein, 947). By finding a balance of tension and relaxation in mental practicing, we can get better results during these practice sessions, and we prepare for more balanced performance when we next pick up the clarinet.

### **Conclusion**

Mindless, repetitive practice can lead to performance related injuries. You do not have to practice for hours on end to injure yourself if you are not taking care of your body and mind. By warming up, cooling down, taking breaks, organizing practice, concentrating more on ourselves and our playing while practicing, and using mental practice constructively, practice can help prevent or treat performance related injuries.

Just as musical interpretation and styles of playing are individual to each musician, practice needs are individual. While I need a break every 30 minutes, you may find that you only need one every 45 minutes. What feels comfortable and healthy can change due to illness, stress, lack of exercise, diet, and a number of other factors, so always listen to your body and be flexible. Some days, you may need to practice easier literature, take longer breaks, or even skip practicing to stay healthy. In the long run, organizing practice carefully but remaining flexible, focusing on your physical and mental health (with the same intensity that you might give to protecting your instrument or reeds), can lead to safer *and* more productive practice.

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