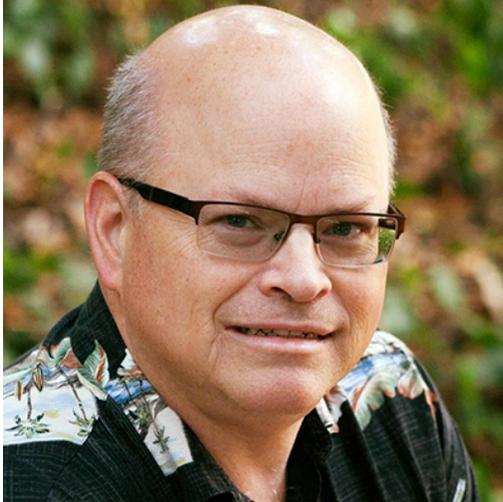


The Musician's Doctor

by Dr. Timothy Jameson



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The articles below are published on StringDancer.com with the kind permission of the author.

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Repetitive Injuries Plague Pickers

Many musicians have heard of repetitive injuries, but are not really sure what they are, how they are caused, or if they should worry about them or not. Horror stories are heard over and over about musicians whose careers were threatened or ended by such conditions as carpal tunnel syndrome, tendinitis, thoracic outlet syndrome and other ubiquitous conditions. Little is taught, though, about these injuries in schools, colleges, or conservatories.

In this article, you will learn more about the warning signs of repetitive injuries, and what you can do to help prevent them. Do not neglect your body's signal that something is wrong. It may be your only chance to correct a serious condition. Neglect may cost you your career.

Why are your arms and hands hurting? The most common complaints in musicians are hand, forearm, and arm pain. This is due to the repetitive hand and arm movements involved with playing music. Repetitive bending of the fingers (for example, to play repeated notes on the fretboard of a guitar) can lead to inflammation and micro-tearing of the tendons. The muscles in the forearm can fatigue, strain, and weaken from injuries due to continuous playing.

Warning Signs

If you begin to experience any of the following warning signs, seek chiropractic or medical attention immediately.

- Tingling, numbing or burning sensations in the extremities
- Difficulty grasping objects
- Weakness of the hands
- Pain during or after playing or practicing
- An increased feeling of clumsiness with your hands
- Neck pain that seems to travel down to the arm
- Constantly sore arm and forearm muscles.
- Pain upon moving your shoulder, elbow, wrist, or fingers
- Feelings of depression due to pain or potential loss of job.
- Pain upon lifting hand-held instruments.

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- Pain upon carrying instruments to and from gig.
- Coldness in the fingers while playing (more than usual) .
- Hands turn blue or flush erratically.
- Restricted motion (stiffness) of the neck or arm.

Prevention Techniques to Avoid Injury

The following "top-ten" list will help you learn what to do to avoid injury.

- 1) Listen to your body: If you hurt during or after playing, your body needs to rest and heal!
- 2) Take more breaks during practice sessions. A 5 - 10 minute break every 45 minutes of practice is helpful to rest tired muscles. Perform stretches during this time and drink water.
- 3) Avoid sudden increases of practice time. This is sure to strain your body.
- 4) Be careful when changing instruments. Instruments have different "actions." Instruments that need a great deal of force from the fingers or embouchure to produce tones may cause injury.
- 5) Be aware of your playing environment. Cold temperatures increase the risk of repetitive injury, due to decreased blood flow to the extremities.
- 6) Prepare your body before playing. Just as an athlete stretches, warms up, and prepares for an athletic event, the musician needs to do the same.
- 7) Watch your posture! This is an important issue. Take a good look at your posture while playing your instrument. Are you slouching, bending your head, or elevating your shoulder? Try videotaping yourself to really see what you are doing.
- 8) Become "one with the music": if you let your body move with the music, instead of staying rigid, you will notice your muscles staying looser are a decreased soreness.
- 9) Drink plenty of water. Your muscles are 75% water. Do them a favor and begin drinking about 8 glasses of water per day. This will reduce your risk of injury.

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10) Eat a healthy diet. Your body's chemistry and overall health are dependent upon you eating the right foods. Don't rely upon fast foods to achieve optimum performance.

Preventing RSIs is up to you. Become educated on how to play without pain, and how to use your body more efficiently while playing. But most of all, listen to your body. Be proactive in your wellness philosophy. If you are wondering if you are prone to these injuries, Dr. Jameson offers free email consultations. Send email to chiro4u@aol.com

Repetitive Strain Case Study

Here is another article that is guitar-related. It's not written by me, but it is used by permission by the author. Mr. Marxhausen hosts the exceptional "Musicians and Injuries" web site that I mention in my article on web sites. He submitted this article to me for use in my next "Musician's Health and Wellness" newsletter. He gave me the OK to post it on GTR. Dr. J

When I developed deep pains in my forearms in March of 1994 following three intense weeks of unaccustomed 8-hour days at the computer, I knew it was serious trouble. I even knew it was called Repetitive Strain Injury. But I was pretty sure some good ergonomic computing equipment would fix it, that and the splints and ibuprofen my physician's assistant prescribed for me.

What I didn't know yet was that my approach to playing guitar and other instruments may have been a significant contributing cause of my bilateral flexor tendinitis. Despite splints, drugs and ergonomic computer equipment, real recovery was elusive, not the least because I hardly slowed down my frenetic pace on computer OR on my instruments. But after I rehearsed and performed a Christmas oratorio on violin, I found myself in frightening pain and having increasing trouble with dexterity. I asked for and got a referral to a physical therapist, who after a time of evaluation laid it out for me: I was in for a long, difficult recovery, and I needed to reduce or modify all activities that aggravated my tendinitis.

No phrase is more common to musicians experiencing physical problems than "I can't stop practicing" . . . " because we have a recital", or "we need to keep a paying gig", or "our music is in our blood and we can't bear to leave it be". But reality is reality: my guitar and violin went in their cases and stayed there untouched for months while the damage slowly repaired.

There were a great many things that contributed to the return to functionality and relative freedom from pain I enjoy today: physical reeducation for my body, ice water baths for my arms, gentle stretching, microcurrent therapy, meditation to reduce stress, and more. But I'd like to address some specific points about the steel string acoustic guitar, which is my main instrument and which I believe caused me the most trouble.

Maybe one of the most important things to learn is you don't have to fret so darn hard. Some instructors suggest fretting notes with ever-decreasing pressure, until finally the string actually buzzes because it's not fretted enough. Just a little bit more than that is all it takes to play cleanly, even during vigorous pieces. "Digging in" may feel like you are wrenching more tone from the string, but it just ain't so. (When you strike the strings harder you may have to increase your fretting pressure a bit.) The same rationale applies to the picking hand, as well: excess tension in finger- or flat-picking does not add to your tone, and

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besides causing injurious strain it impedes your speed and dexterity. If you are fond of using a flat pick, you may find using a thumb pick may reduce the amount of force needed to hold the pick. Using more of your whole arm to pick instead of doing it all with your wrist is frequently recommended as well.

And the moment pressure or movement is no longer required from any finger, relax it. Give those muscles and tendons a momentary chance to recharge and flush waste products away.

Electric guitarists are notorious for preferring postures and positions that look cool over those which are least stressful and most musically effective, but even a classic guitarist sitting in the refined one-foot-elevated position may be creating physical problems through hunched shoulders, cocked wrists, and the tilted hips that come with the use of the footstool. I can't begin to address all the aspects of correct posture, but I will pass along Aaron Shearer's sound advice that to the greatest extent possible, all joints - shoulders, elbows, knuckles, fingers, wrists - should operate in the middle of their range of movement. Shearer explains correct positioning in depth in his excellent book *LEARNING THE CLASSIC GUITAR, Part I* which while intended for the classic guitarist provides principals that can be applied to steel string and solid-body guitars.

My own practice has changed in that I try to play standing up with a strap whenever possible, which permits me to move and avoid any fixed, tense position. Instead of the neck extending out parallel to the floor, I minimize my left-hand contortions by angling the neck up at about 45 degrees from the horizontal. One injurious habit I'm finding hard to break is holding my left shoulder up when I play. Shoulders should be allowed to drop, and raising the arm done through the rotation of the shoulder joint, without any "help" from a raised shoulder.

A controversial point of positioning is placing the left-hand thumb behind the neck to optimize reach and fretting strength: this is generally accepted as "correct" classic technique. But it can be very hard on the thumb, and letting the neck fall into the web between the thumb and fingers instead should at least be considered as an optional change of pace to rest the thumb. Too, overuse of full barre chords maximizes the amount of left hand strain; my playing and writing style has changed to emphasize partial chords and alternatives to full 6-string barres.

Changes to the instrument may help avoid injury. Lighter strings are an obvious method to reduce strain on the hands. This will likely alter your tone and may require a change in your playing style or an adjustment in your instrument setup. Along the same lines, tuning down a half or whole step not only reduces string tension further but opens up new tonal possibilities.

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Using a capo restores the concert pitch of a guitar detuned in this way, but in addition it shortens the effective scale of the guitar to minimize left hand stretches. My "standard" setup has my guitar detuned one whole step with a capo two frets up.

One option to ease playing problems is to get an instrument that is shorter, narrower, and/or shallower than the popular dreadnaught-style acoustics. Options include small bodied "parlor" guitars, very shallow-bodied acoustics/electrics, the round-backed Ovations, and at least one "ergonomic" acoustic model where the body is shallower on one side than the other, so the right arm and hand do not have to reach around so much body.

Though it may sound unthinkable to the acoustic purist, solid-body electric guitars offer advantages in shape and easy playing action, and with sophisticated electronic processing can provide usable "acoustic" tone. Chet Atkins and Joni Mitchell are two acoustic guitar masters who are using solid-body guitars in concert venues.

While these and other changes, and the healing of time, have given me back the ability to practice guitar and write new material, endurance remains a problem for me. After a half-hour trying out guitars in a music store recently, I found my fingers slipping, missing notes, and simply refusing to obey the commands of my brain. I'm hoping that gentle exercise over the coming months rebuilds endurance.

More resources on musicians' injuries can be found on-line on my Web site

<http://www.engr.unl.edu/eeshop/music.html>

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Carpal Tunnel Syndrome

Carpal Tunnel Syndrome (CTS) is a nemesis prevailing throughout the musical professions. It has threatened and has ended careers of many promising and well respected artists. Education within the profession is of vital importance to prevent the occurrence of this disease. This article will explain why musicians are susceptible to developing CTS, the causes of carpal tunnel syndrome, and finally, prevention of these injuries.

What makes a musician susceptible to CTS? There are numerous factors that all play an integral part. These injuries are reported more in females than males. The numbers available only tell us who reported the disease, not how many suffer from the disease. This may be two totally different statistics. There are many musicians who do not disclose their suffering in fear of losing their jobs, especially if they are members of orchestras where each position is sought after by many applicants.

We have learned that approximately 75% of symphony musicians have suffered at some time in their career with a musculoskeletal injury. Thus the prevalence is extremely high within musicians. It has been suggested that people who are of lesser build and have a smaller body frame are more susceptible to injury due to the forces imposed upon the body by repetitious movements. Symptoms usually result from a sudden increase of practice time, a change of teachers, a change of instruments, and long practice sessions without breaks. Smokers run a high risk because of nicotine's constrictive affect on the blood vessels. Anyone with underlying disease states such as hypothyroidism, diabetes, fibromyalgia, rheumatoid or osteoarthritis, blood vessel disease, and obesity, will be more likely to develop CTS. Pregnant women tend to develop CTS because of fluid retention, but the symptoms usually subside once the pregnancy is over.

Nonmusical professions such as computer inputting or programming, and hobbies such as knitting can lead the musician to CTS. Previous neck injury from a car accident, from a bad fall, or from any trauma needs to be evaluated. Previous shoulder injuries, such as dislocations are important to note. A history of broken bones in the arm, forearm, wrist, clavicle, shoulder blade can be a predisposing factor. Finally, the particular instrument played by the musician increases susceptibility. Violinists, violists, guitarists, pianists, and percussionists are most at risk.

For those of you who are unfamiliar with CTS, the following is a list of symptoms associated with the malady. CTS leads to pain, numbness, tingling, and when at its worse, weakness in the first three fingers of your hand. Symptoms can occur in the forearm as well. Many sufferers complain of pain in the hand or arm while sleeping. The person suffering from this disease may experience difficulty holding the instrument, clumsiness, drops objects such as glasses, and cannot

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grip well. When it is severe, the artist loses complete use of his/her hand, and will usually begin using the opposite hand to perform daily activities.

It is my opinion that 80% to 90% of "carpal tunnel syndrome" cases are not a direct result of median nerve entrapment in the wrist. (This is the nerve that passes through the small tunnel formed by the bones of the wrist and a ligamentous covering). This is a controversial statement, but my clinical experience has shown that most cases termed "CTS" are a result of a combination of musculoskeletal and neurological problems stemming from the wrist as well as in the arms, shoulders, and neck regions. This is why it is necessary to find a competent doctor who will investigate all these areas to determine the extent of injury.

To explain how carpal tunnel syndrome develops, I like to use the following analogy when explaining nerve flow from the neck to the arms. Imagine the nerves in your arms are like garden hoses, with water (energy) flowing at full pressure when working properly. If you have arthritis in your neck, previous whiplash injuries, misalignments of the spine, or spinal curvature problems, this will cause a "kink" in the hose, and decrease the flow of water (energy). This will lead to a 40% - 50% decrease of nerve flow to the arms and hands. The nerves then pass under certain muscles that are tight and constrictive, and the nerve flow may decrease to 30%. It gets kinked as it passes through the carpal tunnel, leaving only 5% or 10% of its normal energy, thus the numbness, tingling, and weakness. This is why I state that performing surgery on the wrist is usually not effective, since many times the problems lie above that area.

A predisposing factor to this insult on the nervous system is poor posture while playing the instrument. I will not go too deeply into posture here due to space limitations. Just keep in mind that when your mother told you to sit up straight, it still applies while playing your musical instrument! A hunched forward posture will create pressure on the nerves traveling from the neck down through the shoulder. This is especially important for the acoustic guitarist who leans forward over the instrument while playing, and also the pianist who leans forward to read sheet music. Inefficient use and overuse of the hand and arm musculature while playing the instrument is another major factor. How many of you keep a pinkie pointed outward and extended while playing? How many of you apply great amounts of pressure on to the fretboard or keyboard with your fingers? How many guitarists put a tremendous amount of pressure with their thumb on the neck of the guitar, especially while playing barre chords? These aberrant muscle actions lead to fatigue and soreness. Over a long period of time, the body retains a somatic memory of these positions and it becomes difficult to change them. This is where such techniques as Feldenkreis and the Alexander Method come into play.

How does the musician prevent these maladies from occurring? The artist needs to use common sense and increase his/her body awareness. Musicians are

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compared to athletes because of the amount of training involved to play the instrument, and the repetitive nature of the muscle movement. The big difference is that athletes usually train with the larger more powerful muscle groups. Musicians on the other hand, need fine motor control of the smaller muscle groups of the hands. Consider yourself an athlete preparing to train when you pick up your instrument next time. Have you warmed up your muscles adequately to "train"? Have you increased overall blood flow and heart rate by performing some mild aerobic exercise? Have you stretched the muscles in the arms, hands, and neck? If you have not done these exercises, you are risking injury, just as an athlete who runs a 100 meter race would if he/she did not warm up beforehand.

The most important advice I can give is to take breaks at least every 45 minutes. These breaks should be for 10 - 15 minutes in length and should include stretching and self-massage on the arms, hands and shoulders. Become aware of your body's needs. After you are done practicing, rehearsing, or performing, don't just throw the instrument in the case and leave. You need to cool down the muscles. Perform stretching exercises and elongate the tightened muscle groups.

The more you as the musician become "in tune" with your body, the better off you will be. Read books on stretching, massage, and proper nutrition. Education, prevention and maintenance are the keys to a pain free career. Do not wait until symptoms arise to begin learning about prevention. Start now - your musical career is depending upon it!

Cubital Tunnel Syndrome

A common problem among both acoustic and electric guitar players is the development of left forearm pain. This column will expand upon a specific type of injury, cubital tunnel syndrome, which affects mostly the inner side of the forearm and the pinky side of the hand. This syndrome is probably not familiar to most guitarists, so I'll discuss the typical pain patterns associated with it.

Cubital Tunnel Syndrome begins with pain in the elbow area, along the inner side of the forearm. The pain can travel downwards towards the pinky, and can be accompanied by tingling or numbness sensations to the pinky side of the hand. The forearm muscles can be painful, and can lead to a misdiagnosis of tendonitis by an inexperienced doctor. This syndrome will usually only involve the ring and pinky fingers, since these fingers receive their nerve supply from the ulnar nerve. If the syndrome progresses, it can cause decreased function of the hand, especially grip strength. Wasting or atrophy of the pad of muscles on the palm side below the pinky finger can develop as well. Typically, the person notices that flexing the forearm tends to irritate the symptoms.

The culprit in this syndrome is compression of the ulnar nerve. Just south of the elbow, the nerve passes through the flexor carpi ulnaris muscle to travel down to the hand. A small tunnel forms in this location, and the nerve becomes surrounded on all sides. In this tunnel, the ulnar nerve sits on top of the flexor digitorum profundus muscle. A ligament forms the top layer of the tunnel. It is important to understand the function of the muscles in this tunnel, because they have play a major role in the development of the syndrome. The flexor carpi ulnaris muscle attaches to the inner part of the elbow, and its function is to flex the wrist and laterally deviate the wrist to the pinky side. The flexor digitorum profundus attaches to the medial elbow and inserts into the tips of the fingers. This muscle's function is to flex the fingers (especially the tips).

Now that you've survived the anatomy lesson, let's discuss in real life how these anatomical structures are affected with guitar playing. As I stated earlier, this syndrome typically affects guitarists in the left hand (for right handed individuals - the opposite would apply for left handed people). Why? Because the guitarist uses the left hand for playing the fret board. If we dissect the playing of a simple bar chord, we would notice 1) contraction of the thumb against the underside of the neck of the guitar, 2) a counterbalancing contraction of the opposing fingers on the top fretted side of the neck, 3) bending of the fingertips to push against the strings, 4) flattening of one finger against the neck to form the bar (usually the first finger), 4) maybe some stretching of the pinky to reach a higher fret and 5) flexion of the wrist.

Since the ulnar nerve passes between the muscles that perform flexion of the wrist, bending of the fingertips, and lateral deviation of the wrist (used in stretching the pinky to reach the higher frets), you can see how a typical bar

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chord can affect the muscles surrounding this nerve. With constant overuse of these muscles, they can become inflamed, or actually form "microtears" at the attachments to the elbow. The swelling involved can start squeezing down on the ulnar nerve, causing the symptoms mentioned above. This is also why bending the forearm will worsen the complaints. The ulnar nerve becomes stretched upon flexion of the elbow. If the nerve already is being pinched, the stretching is going to amplify the symptoms.

So what's a guitarist to do? For those of you who do not have symptoms and would like to prevent them from ever occurring, there's a few simple steps to take: 1) give yourself more frequent breaks (about a 10 minute break after every 45 minutes of playing) during rehearsing or practice times. The constant playing for hours upon hours without resting causes the microtearing of the muscles and the resulting repetitive strain. 2) before you play and during your breaks, increase blood flow to the forearm and hands by stretching and performing self-massage to the area. (You may want to visit your library or bookstore and look into some massage techniques - these help to increase the blood flow to your arms and flush out toxins.) 3) For complete prevention, invest in an occasional massage by a professional massage therapist. Also, check with a doctor of chiropractic to make sure the alignment of your neck, shoulders, and elbows is correct to allow proper nerve flow to the muscles and skin.

If you do have the symptoms mentioned in this article: 1) Use heat on the forearm before practicing, and ice the elbow and forearm area after playing. The heat will encourage more blood to the tissues while playing, and the ice will discourage swelling afterwards. Perform stretching to the forearm three to four times daily. 2) If you are experiencing nerve related symptoms like tingling and numbness, see a health professional immediately who is experienced in treating musician's injuries. Many musician's make the mistake of seeing their general practitioner who is not trained about treating repetitive strain injuries. Ask the doctor or therapist if they have treated similar cases, and what type of results they achieved. 3) Always try conservative measures first, such as chiropractic, physical therapy, massage therapy, or acupuncture. Give yourself at least six to eight weeks to heal. 4) If you notice symptoms worsening, or weakness occurring in the hands, your health care provider should refer you to a medical doctor for a consultation and neurological testing. 5) Nerve-related conditions are serious because the nerve can actually die due to compression and decreased blood flow. This could lead to a permanent disability in your forearm and hand - not what a guitarist needs!

Trigger Finger

Finger movement is facilitated by spaghetti like tendons that extend from the muscles in the forearms to various attachment points along the front and back of the fingers. Along their route to the fingers, these tendons must pass under a band of tough fibrous material called retinaculum. A retinaculum helps to guide the tendon to its insertion point, and acts as a retaining band and fulcrum that keeps the tendon in close proximity to the bones of the hand. The tendons become surrounded by fluid-filled protective sheaths as they pass under a retinaculum. This sheath prevents friction from occurring between the tendon and the retinaculum.

With overuse of the tendon from such activities as computer use, musical instrument playing, and hobbies such as crocheting and firing pistols or rifles, the sheath may become inflamed and the contents will thicken. This compresses the tendon as it passes through the sheath. Because of this constriction of the tendon, it begins to swell also. The tendon swelling tends to occur just before it passes through the sheath and retinaculum. In most cases, this involves the flexor tendons of the hand. This inflamed and enlarged flexor tendon will have difficulty passing through the swollen sheath and will have difficulty passing under the retinaculum.

The person suffering from this condition will notice that one or more fingers will get caught up as he/she tries to straighten them out. The finger will get stuck midway in a flexed position. The afflicted person will have to physically straighten the finger with the opposite hand. This procedure could be painful enough to bring the person to tears. When straightened, the person may hear an audible snapping sound. This snapping is caused by the thickened tendon squeezing through the tunnel of swollen material.

Treatment of this condition should begin as soon as the person begins to notice difficulty moving the fingers. If treated early on, conservative measures will be effective to bring the inflammation down, and normalize tendon movement. Conservative measures should include chiropractic care, myofascial release of the musculature, and possibly acupuncture to stimulate microcirculation. I have personally worked with a number of patients with trigger finger with great results - bringing finger motion back to normal - with hands-on chiropractic spinal adjustments and myofascial work of the upper extremity.

If the condition is allowed to progress whereby the finger cannot straighten, conservative measures should still be considered over a period of one to two months. If no relief is noticed in that time frame, then more invasive measures might be considered, such as corticosteroid injection, and possibly surgery to cut open the sheath to give the tendon more space to glide. These provide more immediate relief, but one has to remember that the underlying causes must be addressed or the condition may come right back in months or years.

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Several studies have reported an higher incidence of the development of trigger finger, carpal tunnel syndrome and tenosynovitis in diabetics. The use of corticosteroids in this population has not been very successful in remedying this disease, with only a 50% success rate. It is also noted that diabetics tend to have multiple digits involved. In these cases it is important to use conservative care initially, since most medically cared for individuals will usually require surgical intervention.

With any condition of an inflammatory nature, the key to prevention is education, proper biomechanics, and common sense. The biggest mistake people make is trying to work through the pain. Those computer users making thousands of keystrokes and under the pressure of deadlines are susceptible to these injuries. Also in danger is the musician who is under the gun to perfect a piece for an upcoming recital or gig. Many musicians will practice 6 hours per day to learn musical pieces. This puts a tremendous amount of strain not just on the tendons, but also on the musculature of the entire body.

An important aspect in prevention is to take frequent breaks while computing, playing an instrument, or enjoying your hobbies. I recommend at least a 10 minute break every 45 minutes for the health person. Taking a break does not mean heading to the coffee machine. Breaks should be a time for stretching of the hands, arms, and neck. If youve been sitting for the entire time, get up and move around, loosening up your legs and back. Give your body the attention it needs to keep you going throughout the day.

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Musicians & Weight Training

I recently received e-mail from a guitarist asking about the safety of weight training. He was told by many of his instructors and friends that weight training, especially wrist curls, would lead to carpal tunnel syndrome. This particular person loved his three time per week exercise routine and was really hesitant about stopping, but at the same time did not want to risk injury to his hands nor face giving up playing guitar because of injuries.

This e-mail brought up some very interesting questions about exercising and playing music. This column will help focus on some common misconceptions and explain the facts about the importance of exercise routines and injury prevention. First off, musicians are no different than any other human being when it comes to exercise programs. In fact, if there's any group of people who need to learn more about exercise, it is the musician population. The task of learning musical pieces hour after hour takes a toll on the musculoskeletal system. Exercise is critical to restore vitality and blood flow to the overworked muscles and organs.

If performed correctly, exercise becomes a vital component to the musician's wellness program. The key here is performing weight training "correctly." Improper training techniques can wind up in injuries that can hinder performances and gigs. I recommend that if a musician is considering a weight training and/or aerobic training program that they consult with a personal trainer first to develop a program tailored for their particular needs.

Exercise Basics

To obtain the best results from exercise routines, you must first make a commitment to at least three days per week of exercise. Anything less than this will give you less than optimum results. On the other hand, during the initial three to six months I would recommend no more than 4 days per week of exercise for someone who is deconditioned, overweight, or has not exercised in a year or more. The body needs a rest day in between routines to heal itself.

A musician should begin an exercise program that involves both weight training and aerobic training. Weight training comes in many forms; dumbbells, free-weights, nautilus, cybex, universal, etc. For beginners, I often recommend the weight machines like universal and nautilus since they are easier to learn and maneuver. Aerobic exercise comes in many forms as well. When most people think of aerobic exercise, they envision men and women jumping and dancing around an aerobics room.

This is only one form of aerobic exercise. Aerobic exercise means to maintain your heart rate at an elevated level for at least 20 minutes so the body enters

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into the aerobic energy cycle which reduces body fat and strengthens the heart. This can be done in a number of ways, such as via a bicycle, treadmill, stair machine, swimming, "step" classes, and traditional aerobics classes. Some sports activities also bring your body into the aerobic range. These including jogging, tennis, racquetball, squash, and cross-country skiing to name a few.

While weight training, musicians should concentrate on high repetition, low to medium weight exercises. Each set of exercises should consist of 15 repetitions. If you feel that you cannot attain 15 "reps" then you are working with too much weight. Different musicians will need different exercise regimens due to specific needs. Drummers need a great deal of arm and leg strength, while cello players need overall upper body strength. So your routine should be tailored to the type of instrument you play.

I often recommend an overall exercise program that develops the major muscle groups of the hands, forearms, arms, chest, back, legs, calves, and abdominals. For example, I recently gave this exercise program to a saxophonist. For forearm strength, I prescribed wrist extension and flexion exercises. To develop arm strength to hold the instrument I recommended bicep and triceps exercises. For shoulder strength, I recommended shoulder "flys" to develop the deltoids. For chest strength, he began "benching" exercises on the universal equipment and to balance the pectoralis development, "seated rows" were implemented to strengthen the upper back muscles. "Latissimus pulldowns" were recommended for back support as were four different abdominal muscle exercises. Leg press and squat exercises were recommended to develop lower body strength.

Many of these terms may sound like a foreign language to you, but don't worry: they will be learned quickly once you become aware of the equipment and become knowledgeable about some muscle names.

Revisiting Our Guitarist

Getting back to the guitarist who e-mailed me about the exercise program. I told him that there is nothing wrong with exercise programs as long as the exercises are performed correctly. I mentioned that he should avoid hyperflexing his wrist while performing the wrist curls. Too much strain on the wrist flexors can cause inflammation. But if wrist curls are performed correctly, they are great at developing the forearm muscles, which are very important for overall hand strength and finger strength. Very importantly though, is that he has to balance the wrist curls with exercises that will strengthen the opposing muscle groups, such as the finger extensors and wrist extensors.

Balance is very important in weight training. I advised him to disregard his friends' advise regarding avoiding exercise. The body needs exercise to increase its function and health. It sounds like his instructors and friends needed some

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guidance in this aspect. Hopefully they will read this article and begin learning more about the importance of exercise for the musician.

The "Musician Athlete"

Did you realize that as a musician you are a professional athlete? Consider how much muscle activity goes into practicing and performing your music. How many hours per day do you use your arms and hands to play music? You must train your body to achieve this high level of activity just as if you were training for the Olympic Games. If you are serious about your profession, then become serious about your body. You can only play as well as your body is able. Many musicians develop painful repetitive strain injuries simply because their bodies were not conditioned enough to put in the many hours of strenuous muscular activity. Begin your exercise program today. You will not only see a change in your health, but also your attitude, your vitality, your happiness, and your music playing.

Non-medical Treatments

Over the past 10 years there has been an increased interest in the diagnosis and treatment of repetitive strain injuries (RSI) suffered by musicians. Repetitive strain injuries can lead to neck and lower back pain, shoulder pain, arm and forearm pain, wrist/hand pain, and/or carpal tunnel syndrome. Almost all of the recent publications, journal articles, and books have dealt with the medical approach for treatment of these conditions. The purpose of this article is to provide an overview of repetitive strain injuries, then offer effective alternatives to the traditional allopathic (medical) treatments. It addresses the growing segment of the population who prefer to use alternative therapies, which are drugless, and noninvasive. Many people are investigating methods for natural healing which includes treatment for both body and mind.

It is important to recognize that this paper is not meant to condemn the traditional medical approach for treatment of these conditions. Many people have done remarkably well by seeking care via M.D.'s who specialize in treatment of RSI's. Your alternative health care provider should be willing to work with the medical profession in cases where severe nerve and tissue damage may be present. In these cases, it is important for diagnostic testing to rule in or out injuries that may need medical attention.

There are many causes of RSI's. The most common cause seen in this clinic is due to musicians who have undergone one or more of the following: a dramatic increase of playing time, play their instrument for many hours without breaks, or have recently changed instruments or instructors. String players and pianists are more susceptible to injury. Poor posture will aggravate these symptoms, as well as poor overall conditioning. Obese people, for example, tend to have increased incidence of carpal tunnel syndrome, due to the deposition of fatty tissue in the wrist. Women tend to have a higher incidence of these injuries compared to men. Underlying systemic disease can also be a causative factor for repetitive strain injuries. Psycho-social factors may play a part, such as anxiety or stage fright, poor self esteem, and depression. All of these factors must be considered when contemplating a treatment program for the musician suffering from an RSI.

If you are experiencing an RSI complaint, first consider the type of doctor you will see for an examination. Be careful in your choice of physician or health care provider. Not all doctors or health care providers are proficient in the treatment and diagnosis of RSI conditions. The doctor that singles out the symptom as your main problem, and only works at reducing your symptom is doing a disservice to you - and is wasting your time and money. The prime example is the musician who is experiencing wrist pain and abnormal finger sensations. The substandard doctor is one that only investigates the wrist and hand, and fails to investigate the forearm, elbow, shoulder, neck, posture, playing technique and style, and the other factors mentioned.

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The doctor who sees the functioning of your body as a whole is more effective in treating RSI's. (This is where the term "holistic" stems from.) Utilization of chiropractic care, massage therapy, somatic therapy, and acupuncture in various combinations is an excellent start to your alternative/holistic treatment program. Chiropractic care is vitally important for RSI conditions, and is the primary form of treatment at our center. If you decide to seek chiropractic care, seek a chiropractor who has previous experience with the treatment of musicians and/or athletes. You may want to seek a "Certified Chiropractic Sports Physician" (CCSP) or one who specializes in rehabilitation. Be sure to inquire if the doctor has on-site rehabilitation services and on-site physiotherapy services. There are chiropractors who limit their practices to spinal manipulation only, and although effective in some conditions, I do not recommend it for the complex nature of repetitive strain injuries.

The doctor of chiropractic undergoes extensive training to diagnose disorders stemming from malfunctions of spinal and extremity joints, nerves, tendons, ligaments, and muscles. In repetitive strain injuries all of these structures tend to be affected. Treatments for these conditions incorporate a combination of spinal and extremity manipulation (adjustments), physio-therapy, rehabilitative exercises to the spine and extremities which include stretching and strengthening.

My clinic offers a unique service termed "musician performance re-education". Performance re-education is an analysis of the playing style of the musician through video-tape analysis. Video-taping a practice session is important for both the doctor and patient. It allows the doctor to examine muscle movement patterns that may be harmful to the patient. The musician can visualize his/her posture and technique as well. After analysis of this videotaping, proper bio-mechanics should be taught to encourage more fluid, stress free motions. Posture and stance should be analyzed as well, and exercises should be prescribed to strengthen imbalanced muscle groups.

An excellent complement to chiropractic care is massage therapy. You will find that many chiropractors (in the U.S.) offer massage therapy in their office. Certified massage therapists who specialize in "somatic therapy" are helpful in teaching the musician about proper movement patterns. Massage therapy also enhances healing of injured muscles and tendons. The Feldenkrais Method and the Alexander Technique are forms of somatic therapy that have shown effectiveness in instructing the musician to change muscle movement patterns. The musician learns in these methods to retrain their movements from harsh, strenuous, and harmful to more flowing, relaxed less stressing movements.

Acupuncture and Traditional Chinese Medicine is another form of alternative treatment that enhances healing. It allows for improved microcirculation of the injured tissues. It has been shown to increase the immune response. It also enhances nerve and energy flow. Acupuncture allows for changes in the

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biochemical reactions within the body, and stimulates the release of endorphins for pain relief and cortisol for an anti-inflammatory effect. Use of Chinese herbs adds in strengthening the body's defenses and stimulating the healing response.

For those who prefer herbal or homeopathic relief, I would recommend a naturopathic doctor. Naturopathic doctors do not receive licensing in all states. In those states where there is no licensing board, you may find them listed under "specialized kinesiologist". They can determine which herbs and/or homeopathic remedies will aid in your body's healing. I recommend you seek this treatment in conjunction with chiropractic care and/or acupuncture, because of their beneficial effects previously mentioned.

One last alternative method that is peaking in interest is "Guided Imagery". This method is helpful due to the importance of the brain's control over healing the body. The person certified in providing guided imagery sessions will talk you through visualization techniques. This aids you in mindfully controlling not only your healing, but also controlling your brain's conception of the pain itself.

Treatment of RSI's should be multi-faceted and should incorporate health care disciplines which allow your body to heal quickly and safely. The health care provider needs to investigate not only of the symptoms of an RSI condition, but all the aspects of the musician's life and performing style. The disciplines mentioned in this article are only a few of the many alternative therapies available to you. Those mentioned are considered mainstream and effective. There exists many others that are more controversial, and should be investigated closely before undergoing treatment. Please look into all of the options before making your final decision regarding your health care program.

Finally, it is important to mention that prevention is the key to a lifetime of instrument playing without pain. Your doctor or health care professional should advise you on stretching and exercise regimens that will aid you in leading an overall health lifestyle.

RSI Prevention Guidelines

Tips for avoiding repetitive strain injuries:

1. Drink plenty of spring water or filtered water. Attempt to drink one 8 oz. glass of water per hour. The tissues of your body are composed mostly of water. Dehydration inhibits the healing process.
2. Avoid caffeinated beverages and alcohol. These will dehydrate you. The stimulating affect of caffeine will also tense your muscles.
3. Before you begin your workday, stretch your muscles, and perform some light exercises to "wake them up." Avoid working with tight, unstretched arms and shoulders. This will lead to further injury.
4. Perform stretching exercises at your workplace at least once per hour. (Provided by a health care provider)
5. Take frequent breaks to rest muscles and to stretch. At least one 5 minute rest every 30 minutes is adequate to perform self-massage and stretching for the muscles.
6. Begin a daily log of your activities and symptoms. In the log, state the symptom and its severity, along with activities that may have brought on the complaint. This enables you to begin understanding why you have this injury. Other items to log are: water intake, medications taken per day, dietary intake, and other factors that may play a part in your condition, such as emotional factors and stress level.
7. Watch your posture while working. If you have questions regarding specific work-related postures, ask the doctor.
8. Cold environments will worsen RSI conditions because of decreased blood flow to the tissues. If you find yourself in a cold environment, take steps to correct it (i.e. wear gloves, buy a space heater, etc.).
9. Check with your local hardware or stationary store for rubberized materials that allow easier grasping of objects, such as around a commonly used pen, or pliers, etc.
10. Avoid hobbies that flare up the condition, such as sewing, and sports involving heavy shoulder and arm use (like racquetball).
11. Do not perform weight lifting exercises to your arms, hands, or shoulders when the condition is in an inflamed state. This will simply further the irritation and swelling.

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12. Use ice, either via an ice pack or by using a Dixie cup ice massage to relieve swollen irritated tissues. When using an ice pack, always place a moist towel between your skin and the ice pack. Ask the doctor on the proper technique for ice massage. Ice should be used for no longer than 15 minutes at a time. Take a half-hour break before applying again.

13. If the muscles in your neck and back are sore and tense, moist heat may be affective in relieving the pain. As with ice, use heat for periods of 20 minutes at a time. Take the heat off for 20 to 30 minutes between sessions. If you feel worse after using heat, apply ice for 15 minutes. This will decrease the swelling present. Avoid heat if this is the case.

Health-Related Websites

The Internet is a powerful tool for the professional or amateur musician to learn more about health issues. There are web sites entirely devoted to musician's health complaints. Below are addresses and summaries of some of the more popular sites.

Musicians and Injuries

The Musician's Injury Page. One of the best sites on the 'net. Contains numerous articles, publications, videotapes and audiotape recommendations for the musician who wants to prevent injuries or learn about injury treatments. Allows viewer to access the "Find-a-Doc" page that offers referrals to providers throughout the country who specialize in repetitive injury treatment.

<http://www.engr.unl.edu/ee/eeshop/music.html>

Performing Arts Medicine At Ithaca College

Ithaca College Performing Arts Page. Discusses the Ithaca College performing arts program and musician injury seminars. Has lots of great links, too.

<http://www.ithaca.edu/hshp/pt/pt1/index.html>

Canadian Network for Health in the Arts

Canadian Network for Health in the Arts. A good source of information for our Canadian musicians.

<http://web.idirect.com/~cnha/>

Alexander Technique

The Alexander Technique page. Great technique for postural retraining.

<http://alexandertechnique.com%0d/>

Feldenkrais - Somatic Options Homepage

Feldenkrais information. Another muscle reeducation technique popular with musicians.

<http://www.somatic.com/>

Bayshore Chiropractic Holistic Health Center

Dr. Jameson's web page with informative articles on injury prevention. Copyright 1998 Timothy Jameson. All Rights Reserved.

<http://www.jamesonchiro.com/>

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