I Feel Your Pain!

BY DR. DARIN "DUTCH" WORKMAN

While treating drummers and percussionists over the past fifteen years, I have noticed some trends in the injuries they get. In addition, I developed a survey on drummer/percussionist injuries, and have kept an eye on the results for the past six years. I have found that the majority of injuries fall into the category of soft tissue damage. Being a drummer for over thirty years now, I wasn't surprised.

You see, I too have had my share of aches and pains from playing before, during, and after becoming a doctor. The treatment for most of these injuries can hurt plenty, and I jokingly tell my patients "I feel your pain." Well, it's true in this case.

Soft tissue injuries have to do with damage to the muscles, tendons, ligaments, and bursae. In our case, these come on over long periods of abusing our bodies. Let's face it, rarely do we experience broken bones, dislocated joints, concussions, and traumatic injuries of that sort from playing. We leave those to the football players.

Since most drummer/percussionist injuries deal with soft tissue, we will discuss in more depth the most common soft tissues involved, and then shine a little light on how they are commonly treated.

COMMON TYPES OF DRUMMER/PERCUSSIONIST INJURIES

MUSCLE SPASM: When a muscle goes into sudden, involuntary contraction.

TENDONITIS: When a tendon gets injured by tearing, fraying, or irritation.

BURSITIS: When a bursa gets over-worked, begins to break down, or gets inflamed.

NERVE IMPINGEMENT: When something puts pressure on a nerve causing a decrease in its ability to function.

MUSCLE INJURIES

Common injuries in this category:

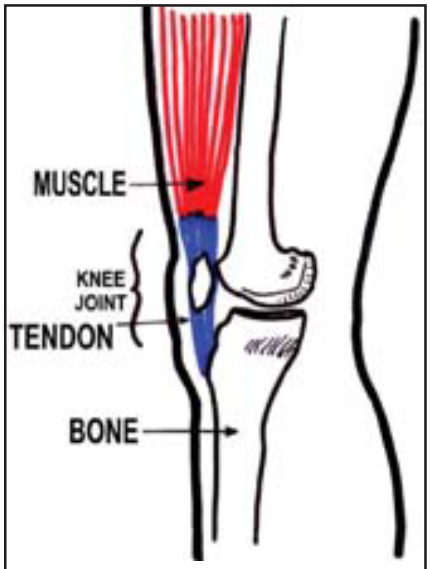
Muscle spasms: Knife-like pain anywhere in the body in a muscle belly.

Fibromyalgia: Pain to move, touch, or stretch, etc. anywhere in the muscles of the body.

Piriformis syndrome: Tight painful, restricted movement in hip and/or buttock possibly going down the same-side leg.

Torticollis: Painful restricted movement in the neck that may travel down the arm.

Tension headaches: Headaches that increase with pressure on various muscles.



Muscles attach to tendons, and then tendons attach to bones. Often, when a muscle is injured, the tendon is also affected, and visa versa.

Muscles are usually the first soft tissue to be injured, because they provide the force that moves the body. They do the work.

When the muscle works, it uses up energy. When too much energy is depleted, the muscle becomes fatigued. You know you have fatigued an area when it shakes as you try to hold it still. It will also become weaker and less coordinated.

A muscle's usual response to fatigue (overuse) or injury is to tighten up and go into spasm (constant contraction of the fibers). It does this to act much the same as a splint, and reduce movement of the area in order to protect it from further damage. This process actually protects you from you.

However, this "splint" effect causes pressure around the blood vessels, which reduces the flow of nutrition to the injured area. Since blood is necessary to heal injury, the healing process is slowed in the proportion to the reduced circulation.

Muscles are one of the fastest soft tissues to heal quickly because they have a great amount of blood circulation. More blood circulation to an area generally means faster and better healing because there are more materials to work with. Greater amounts of damage means a bigger repair job, and a bigger job requires more materials and time.

They will usually heal fully four to six weeks following a typical injury (you feel better much sooner than that). However, the amount of damage done to the area, and the amount of time the injury has been there, will play an important role in how fast and how well it will heal.

In addition, the longer an injury has been there, the more difficult it is to reverse it. With time, scar tissue begins to form, and fibrous tissue develops between the muscle fibers that are stuck in contraction. Basically, if something in the body is not moving, the body glues it in that position with tissue.

In order to heal the injury, the fibrous tissue (adhesions) need to be broken in order to once again allow proper movement of the muscle. As you can imagine, this is usually a painful process to varying degrees (see "How to do Basic Massage"), but it must be done for full healing.

TENDON INJURIES

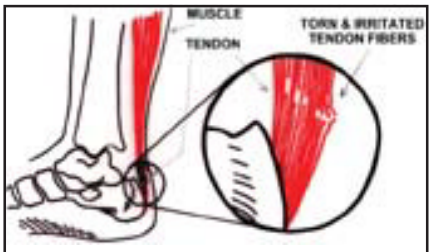
Common injuries in this category:

Stenosing Tenosynovitis: Pain on thumb side of the wrist and forearm.

Policis tendonitis: Pain and swelling when moving the thumb.

Lateral epicondylitis (tennis elbow): pain on the outside of the elbow.

Achilles' tendonitis: Needle-type pain on the back upper heel.



The muscles of the lower leg combine into one common tendon and attach to the heel. One large injury, or repetitive misuse causes pain, swelling, and/or tearing of the tendon fibers. This is called Achilles tendonitis (circled area shows the location of pain).

Tendons and ligaments are not as flexible as muscles, and they heal slower. Constant pressure and force on the tendon is a common cause of tendonitis. Tendonitis simply means that the constant pull on the tendons can cause them to develop small tears in the fibers. When this happens, the tendon gets irritated, swollen, and painful. This can occur anywhere tendons exist in the body.

Irritation to an area leads to muscles tightening involuntarily (spasm) to protect the area. However, muscle spasm puts stress on the tendons that attach the muscle to the bone because the tight muscle is less elastic, causing more pull on the tendon. This irritates the tendon.

Allow me to illustrate: If you were bungee jumping, the cord would represent the muscle, and where it attaches to your leg would be the tendon. Imagine if you jumped off of a bridge and came to the end of the bungee but it didn't stretch. See what I mean about pulling on the tendon?

Since we use our hands and feet so much in playing drums/percussion, the muscles that operate those areas tend to put more pressure and wear on the tendons around the wrist, hands, and feet. It is very common for players to have tendonitis that develops from overuse of an area with chronically tight muscles.

Tendons typically take around twelve weeks to heal. During this process, the initial action should be to take the pressure off of the tendon by loosening up the attached muscle. If the injury is minor, the player can see if the injury will relieve by trying some basic massage techniques on the injured area, but this is best done with moderate to deep massage of the muscle by a massage therapist experienced with musician and athlete injuries.

Usually this is a painful process, and the person rendering the treatment should have the experience necessary to know where to work, and how much pressure to apply. In addition, the longer the injury has been there the longer it will need to be treated in order to heal. Most people do not have the patience necessary to take the process from start to finish.

Once the pressure is off of the tendons, they will need time to rest with minimal or no playing. In a severe case, after about two to four weeks of total rest you can begin playing at about fifty percent of normal intensity and time. If the injury begins to hurt during the playing, back off and try it again the next day.

With each day, you should be able to play longer and with more intensity. Gradually, you will reach your maximum level. It is important that you do not play with pain because it will take longer to heal, and further damage may occur.

LIGAMENT INJURIES

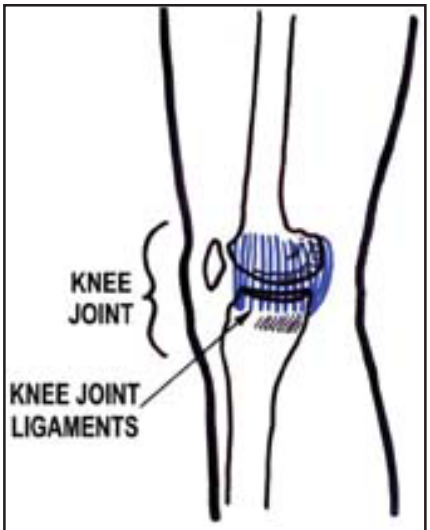
Common injuries in this category:

Facet syndrome: Lower back pain, worse when bending backwards.

Coccydynia: Extreme pain at the bottom of the tailbone (coccyx), worse when sitting.

Ligaments surround joints attaching bone to bone while allowing movement. They are strong, fibrous tissues that are pliable, and some believe that they are slightly elastic. They keep the joints snug in their movement rather than loose and shifting. Muscles protect the joint the most. They prevent the joint from going too far in its movement, and they tighten to secure it when moving or stable.

The ligaments play an important role in keeping the bones lined up at the joint. When a ligament is injured or weakened to any degree, the joint is more suscep-



Ligaments stabilize two bones that meet to form a joint. They keep the joint snug unless they are injured in some way.

tible to injury.

Generally, ligaments take longer to heal than muscles. However, due to their location and function, they are less apt to get injured from overuse or improper use than muscles or tendons.

They are usually injured when a joint is moved beyond its normal range, or when the muscles supporting the joint are weak and force the ligaments to do more than their share of securing the joint. By far, this happens most when muscles are fatigued and the ligament takes the full force of the movement, causing small tears to varying degrees. You know when this happens because it hurts immediately.

Rarely does a drummer/percussionist encounter a situation that puts enough stress to a joint to force it further than its normal range. This is usually a sudden, unexpected move, mostly encountered when moving equipment or marching and such.

Tearing of ligament tissues sends an alert to the brain, and the body responds by causing the muscles around the area to contract in an effort to stop movement of the joint. Further movement of the joint could cause more stress on an already damaged ligament. Every damaged fiber is one less to add stability and strength to the area, making the soft tissue more at risk for injury.

Ligaments typically take around twelve weeks to heal. During this process, the joint should be stabilized (usually with a brace of some sort) in order to keep the ligaments from being moved and further damaged.

The player can help increase the circulation and restore strength to the muscles that protect the joint by trying some basic massage techniques. Rarely is a ligament injured without a surrounding muscle also being injured.

After the ligaments begin to heal in the first week or two, you can begin using the joint (playing) at about fifty percent of normal intensity and time. If the injury begins to hurt during the playing, back off and try it again the next day. You should find that each day you can play longer and with more intensity.

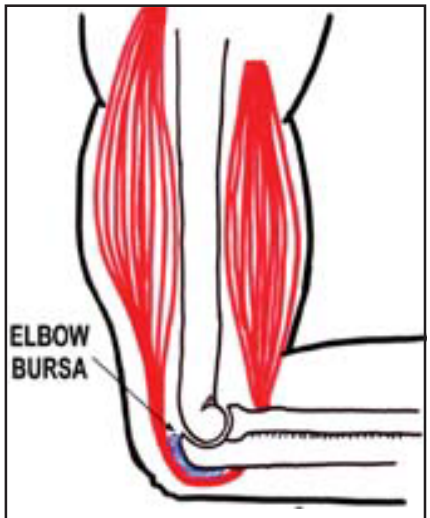
It is important that you do not push the ligament to do more than it can do, or further damage will occur. Gradually, you will reach your maximum level. If you push the playing even though it hurts, the healing will take longer and your chances of full recovery without residual pain will be greatly decreased.

BURSAE INJURIES

Common injuries in this category:

Elbow bursitis: Swelling and/or pain at the tip of the elbow when moving and/or touching it.

Shoulder Bursitis: Burning, stabling pain in the shoulder that increases with movement.



This figure shows an elbow bursa. Bursae are bags filled with lubricant positioned between two moving objects in the body in order to provide smooth movement without friction.

Retrocalcaneal bursitis: Pain and swelling on the back of the heel.

Ischio-gluteal bursitis: Extreme, unrelenting pain in the buttock, worse when sitting.

Bursae are a different type of animal than the previously discussed soft tissues. They are various sized sacks of lubricating fluid that are situated between moving parts within the body in order to reduce wear, heat, and friction that would cause injury.

They are very slick and very durable, but they can be injured from a direct hit and/or constant motion of the area. The chances of a bursa being irritated is increased with pressure on the bursa, speed of movement, and/or the duration of the movement. Therefore, suddenly using heavier sticks or playing at faster speeds than you are used to can bring it on.

Bursae are located between two areas that rub together. They reduce the friction. They are found around the shoulder, knee, hip, etc. where most movement occurs. Misuse of the area as described above can cause irritation of the bursae resulting in inflammation (bursitis). If you have pain in a joint during movement, bursitis is one possibility.

Once a bursa is irritated, the best thing to do is leave it alone and let it cool down. The average doctor will counsel the patient with bursitis to not move the area for two to four weeks. With a little imagination, you can usually get around that. Career players cannot afford to stop a movement that makes their living.

In most cases, altering the playing situation in some way allows the musician to continue playing, and at the same time lets the injury heal. A change in technique, repositioning of the instrument, decreased intensity of playing by working with a sound man, etc. may be all that is needed to allow this to happen.

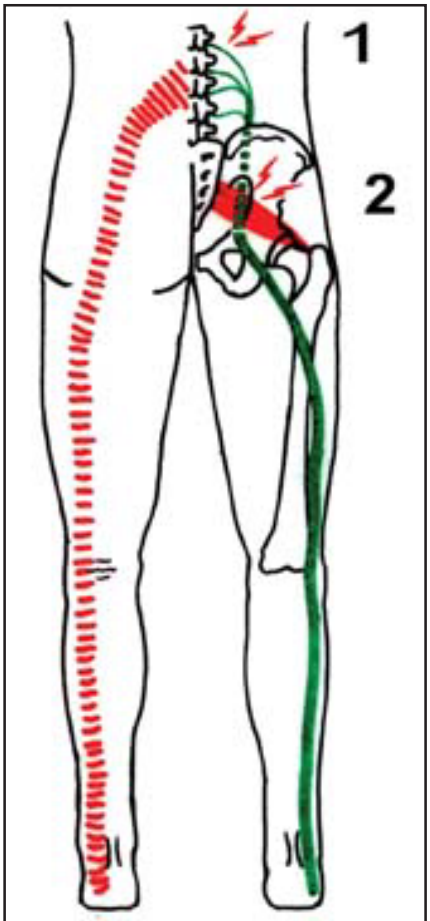
NERVE IMPINGEMENT INJURIES

Common injuries in this category:

Carpal tunnel syndrome: Numb, tingling, or achy feeling in the hand and/or wrist; gets worse over time.

Intervertebral disc syndrome: Moderate to severe pain (usually neck or lower back) that typically continues down the arm(s) or leg(s).

Median nerve entrapment: Tin-



This illustration demonstrates two of the common causes of sciatica. (1) Bulging or herniated lower back discs, and (2) pressure on the nerve from a spastic muscle (usually the Piriformis muscle). Sciatica can be down the leg as far as the toes in the pattern shown on the left (nerve in solid green line, and pain pattern in red dashes).

gling, pins-and-needles, and/or numbness of the first three fingers.

Claudication: Pain, ache, cramp, tenderness in the leg when in use.

Sciatica: Tingling, burning, pain, and possible weakness down one or both legs.

The final type of injury I would like to address occurs when something puts pressure on a nerve causing what we call an "impingement" injury. Any pressure on a nerve causes a decrease in its ability to function, and is accompanied by the nerve complaining in some way (usually pain, tingle, burning, numbness, etc.). A good example of nerve impingement is when you strike your "funny bone" (the ulnar nerve) and a tingle or shock shoots down the arm.

A longer-lasting nerve impingement sensation feels like getting a "dead arm" when you sleep on it too long. The arm usually starts with feeling numb, then when you get off the arm you feel tingling, pins-and-needles, and sometimes burning or aching. With time, it slowly returns to normal.

A nerve can be pushed on by many things in the body, but the most common for drummers/percussionists are: tight muscles, swelling of the nerve and/or surrounding irritated tissues (tunnels, retinacula, etc.), and even pressure on the area from inefficient playing techniques.

continued on page 71

HOW ARE SOFT TISSUE INJURIES COMMONLY TREATED?

1. Rest, **I**ce, **C**ompression, **E**levation (**RICE**). The ice should be applied for fifteen minutes (never more) directly to the skin over the injured area, followed by fifteen minutes with no ice. This can be repeated three times per day for the first one to two days. The amount of activity allowed, and the length of time before doing full activity, is dictated by the pain. When you feel pain, you should back off and start again when the pain subsides.

2. Begin using the injured area (playing) at about fifty percent of normal intensity and time. If the injury begins to hurt during the playing, back off and try it again the next day. You should find that each day you can play longer and with more intensity and less pain. If this doesn't occur, see your doctor.

3. Find out the movements or behaviors that caused the injury, or it will continue to happen over and over. Any movement that causes you pain while playing indicates that you are doing something wrong. Evaluate your technique, and correct it so that it doesn't hurt anymore. A good instructor can help.

HOW TO DO BASIC MASSAGE

NOTE: This section is designed to teach the reader how to do a BASIC massage. It in no way gives the reader enough information to have the skills or knowledge of a professional. It gives beginner information that will enable one to do useful soft-tissue work in a relatively safe way. Massage and soft-tissue work is best done by an experienced professional certified massage therapist (CMT), or doctor of chiropractic (D.C.) with soft-tissue work experience.

The benefits to the body of a good massage are not very well known to the general public. Likewise, the ability to give an effective soft-tissue massage is highly underestimated. Massage is an art form requiring talent and practice, not to mention a good knowledge of the anatomy beneath the skin. It is important to know where the muscles are and the direction their fibers go. In addition, knowing the muscles that perform various functions that are hurting allows one to more effectively relieve that pain.

Massage is a very simple thing to physically do, but at the same time, difficult to be effective at. It involves all of the senses. In particular, being able to feel what is under the skin is of great importance. The subtle changes that happen during the massage indicate what should be done next. They also show where and how hard to push. Only through focus and constant practice can one become a great masseuse.

IMPORTANT: If the area to be massaged has been injured, consult your physician before working on it.

Begin by finding the area of pain. Lightly rub the areas around it to feel all of the spots that might be involved. Once you have found them, begin doing a general massage of the area by rubbing lengthwise along the muscle fibers, starting at one end of the muscle, and moving to the other end slowly (one inch per second, moving towards the heart in most cases), with moderate pressure. It is best to use some kind of lotion in order to guide along the skin smoothly to "iron out" the muscle fibers.

While working the muscle, try to determine if the knots and sore spots are smoothing out. If they are, continue massaging along the muscle fibers, starting at the left side, and moving to the right approximately a half inch after each stroke. Once you have moved to the right edge of the muscle, go back to the left side and start again doing the same thing; repeat this three to five times. Each time you make a sweep over the muscle, the pain should decrease slightly, and the bumps should smooth out and flatten.

If the bumps are too hard and refuse to give way after doing this each day for two

For larger muscle areas such as the legs and back, use the palms and outer edge of the hands (top). For smaller areas, it is convenient to use the thumbs to massage the muscles (bottom). It is important to move along the skin slowly and smoothly (using lotion helps), ironing out the painful bumps of muscle spasm. Above shows the pattern and direction you should massage.

The longer a trigger point or spasm has been there, the more difficult it is to remove it. Static pressure on a specific knot is one way of singling out the problem area and focusing on its removal. Once it is gone, you can do general massage to relax the entire muscle.

to three days, you can use a more aggressive technique that specifically works on the trigger points and spasms.

Here's how it works: Massage along the muscle area as above, and if you hit a trigger point, immediate pain will cause the patient to jump. The trigger point will be round shaped about the size of a marble (they are various sizes). Spasms are very different. They usually feel like a rope or cable within the muscle going with the fibers. It is usually not painful unless you apply hard pressure to it.

If it is a spasm, single it out, and work on it as above, going along the fiber bottom to top, and left to right. However, you will need to apply more pressure than usual on this area in order to get it to "release" or relax.

While you are doing this, the hands will probably slide off of the spasm, usually causing pain. It is important that you stay on top of it as you move along the fibers. I call this "surfing out the spasm." Repeat the left-to-right process three to five times; it should begin releasing within three to five treatments if you are doing it each day. As it releases, you will feel less pain during the massage, and the spasm will slowly melt, becoming softer each time. If you are really paying attention to your body, you will probably notice more strength, coordination, and endurance in that muscle.

When you find a trigger point, the pain will make the person jump (thus the term "trigger point"). Massage around it, and mark in your mind its parameters. It will feel like a marble (of various sizes) within the muscle.

Begin moving in a left-to-right pattern along the muscle fibers as mentioned before, staying on the trigger point only. This is usually a very painful process, so less pressure is required. It is important that you move very slowly while working out the trigger point— a half inch per second or less. This gives it a chance to release while you are working it. Gradually, the area will become less painful, and the trigger point should deflate over three to five treatments.

Stubborn trigger points respond well to static pressure. This technique requires more training to be really effective, so it may take a while for you to become good at it. Find the trigger point, and place both thumbs on top of it. Slowly increase pressure on the area, being careful not to roll off. It will usually be painful, but the pain should only reach a level that the patient can tolerate without fighting back (tightening up). They should be able to allow the muscle to relax during this process, or it will not be as effective. If they are tightening up, you will need to reduce pressure to the trigger point until the muscle stops fighting back.

Hold the pressure on the trigger point for twenty to thirty seconds. During this time, it will usually deflate, and at the same time the pain will fade. The key to this technique is being able to put the right amount of pressure on the trigger point. Too much, and it will just fight you back to protect itself. Too little, and it will just laugh at you without releasing. As it starts to deflate, you can increase the pressure slightly to accelerate the process.

This can be repeated two to three times if needed, but if it is not responding, you will need to do general massage as described above for a day or two, and then try it again. If you cannot get it to release, or the soreness doesn't go away after a day or two, see your chiropractor or massage therapist.

Remember that muscle spasms and trigger points appear because you are doing something that irritates the body—something it wasn't designed to do, or wasn't ready to do as much of. Unless you change the thing you are doing to cause the problem, it will constantly return, and you will be chasing muscle spasms and trigger points the rest of your life. Fix the problem, and remove the spasms and trigger points. If they return, call a doctor who works with musicians, and have the problem corrected properly.

Nerves can also be affected if their blood supply is reduced, but for this article it is less of a concern.

A number of muscles are positioned close to a nerve. If they go into spasm, they can cause pressure to the nearby nerve. This irritates the nerve and it cries out in one of the above-mentioned sensations. It will continue to do this until the pressure is removed, then it will gradually return to normal. The amount of time it takes to return to normal increases with the amount of pressure that was on it, and the amount of time it was there. If left long enough, chances for full recovery can decrease.

It is important to consult a doctor in order to remove the cause of the pressure to the nerve. After that, your ability to play will improve as the normal feeling and function comes back to the nerve. This injury is more complex, and should be monitored by a doctor.

FINDING A DOCTOR

Once a soft tissue is injured, the best thing to do is leave it alone for a period of time and let it cool down (until the pain subsides). Most doctors will counsel the patient with a soft-tissue injury to not move the area for two to four weeks.

In most cases, musicians cannot just stop moving for that amount of time, so they just suffer until it gets so bad that they cannot move anymore. Many times this can ruin a job for them, and even affect their career. They put off seeing a doctor for fear that they will be told to stop playing—something they don't feel they can do.

In most cases of soft tissue injury, the musician can continue to play at a lower level and also have the injury heal. Not all injuries require total rest. It is important to consult a doctor that has experience with performers and athletes.

It is optimal if you can find a doctor that actually plays drums/percussion, because such a person understand the demands and movements of playing well enough to provide alternative ways to play without causing further injury to the area.

GETTING RID OF PAIN FOR GOOD!

As a final note, it is very important to find out the movements or behaviors that caused the injury. Almost without fail, when the treatment is complete and the musician is fully healed, they ask "Will this injury return?" My reply is, "If you continue to do the thing that caused the injury in the first place, it will happen again. But if you change the pattern that initially caused the injury, it will never bother you again."

Behaviors are the main cause of injury, so we must find the behavior and change it. On the positive side, pain shows us weaknesses in our technique, and if we improve that weakness we will play better and longer.

All illustrations and photographs by Dr. "Dutch" Workman. References available upon request from the author.

Darin "Dutch" Workman is a doctor of chiropractic practicing in Kingwood (Houston), Texas. He works with performing and sports related injuries. He has also received his Bachelor of Human Biology degree, and is a Certified Chiropractic Sports Physician. He has authored numerous injury and prevention articles and presented many workshops over the years, and is currently finishing a book on ergonomics, and prevention and treatment of drumming injuries. Workman is Chair of the PAS Health and Wellness committee, and is a member of the Performing Arts Medical Association (PAMA). As a drummer/percussionist of over twenty-five years, he continues to be active in performing and teaching. He can be reached by e-mail at druminjuries@juno.com. PN