Ankle Sprains and Strains

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Introduction
In parkour, ankle sprains and strains are among the most common of all injuries. Every experienced traceur has or will suffer an ankle injury at some point in their training.

Background Information
In order to understand how to prevent and rehabilitate ankle injuries, it is important to first learn some basic information regarding ankle anatomy and injuries.

• Muscles and tendons are the first line of defense against ankle injuries and ligaments are secondary. Therefore, if you sprained your ankle (damage to the ligaments), you FIRST strained your ankle (damaged to the muscles). As a result, sprains and strains are usually paired together.

• You have four basic muscle groups that protect your ankles. Their function is to move the foot up and out (dorsiflexion and eversion), up and in (dorsiflexion and inversion), down and in (plantar flexion and inversion), and down and out (plantar flexion and eversion).

• The most commonly injured muscle is the muscle that controls plantar flexion and eversion (down and out). Imagine rolling your ankle, how does it look? Most of the time, an ankle injury involves rolling the ankle with the foot turned in and the outside/lateral side of your foot hitting the ground. This is called the inversion sprain.

• The foot is your core. It is your base. Your ankles need to be strong or else your entire kinetic chain can become screwed up. The kinetic chain is a term used to describe a common pattern of joint motion and muscle activation to perform a certain task or series of tasks ie. Squats, jumping etc.
There are two types of sprains or strains, acute and chronic. An acute sprain or strain is when you just hurt yourself recently and is associated with a sudden onset of pain and inflammation. As you have probably heard before, acute injuries call for RICE (Rest, Ice, Compress, Elevate). The other type of injury is chronic. Chronic sprains or strains are long-term, degenerative, and repeated occurrences. This article will focus more on chronic sprain/strains as it is too often ignored and by personal opinion, far more important.

**Acute Sprains and Strains**

**Basic Information**

Sprains can seriously set back any athlete and proper management is important for healing and recovery. For the sake of the article, we will consider any sprain/strain within 1-3 weeks of the initial injury, acute. In addition, though technically grey, we will consider only the first incident of injury as truly acute. Any repeated sprain/strain to a previously injured joint can be considered chronic, though principals of chronic and acute sprain/strains will overlap.

**Categories of Sprains:**

- **Grade 1:** A minor tear or stretch of a ligament. No permanent damage. Minor swelling and pain. Expect 3-6 weeks of recovery.

- **Grade 2:** A partial tear of about 50% of the ligament. Some instability. Moderate swelling, severe pain. A popping feeling, or audible tearing/popping sound. Expect 3-4 months of recovery. No full recovery.

- **Grade 3:** Complete rupture of ligament. Instability, severe swelling, severe pain at initial injury, sudden loss of pain after injury. Loud pop. Chance of involved fracture. No full recovery, surgery may be needed.

**Prevention**

Prevention of an Acute sprain/strain is something of a misnomer. Acute sprains are unexpected, unplanned, and as we mentioned, the first incident. The only prevention of your first sprain/strain comes from proper safety guidelines (checking surfaces, conditioning, intelligent choices) covered elsewhere on the website. One thing that I will mention is that if you can’t land on your toes, (never let your heels hit in a landing), then you shouldn’t be doing the jump. Some will recommend taping, but in my opinion I feel that taping will actually negatively affect performance before an acute injury. Look forward to another article on the proper use of taping!

**Care/Rehabilitation**
When you injure an ankle or see someone who has injured their ankle, there are some important things to ask.

- **Did you hear or feel a pop at the time of injury?** If there was a pop, the sprain was a grade two or three injury. Read below for more information.
- **How severe is the pain?** If the pain has put the person in serious agony, then it is likely a grade two or three injury. Use your common sense for deciphering if the person is in serious agony.
- **How long did the pain last?** If the pain persists for a long period of time, that is a good sign. If the pain disappears immediately, you are in trouble. Read below for more information.
- **Can you stand on it?** Being able to weight bear may eliminate the possibility of a fracture.
- **How much swelling is there?** Swelling is usually proportional to the severity of injury.
- **Have you sprained your ankle in the past?** If you have, it is more likely to happen again. But like as explained before, it does not have to be that way.

If there is a possibility of a grade two or three injury, the injured athlete should go to a doctor or hospital for care and to screen for a fracture. If it is a minor grade one or two injury, follow these RICE steps:

- **Rest** – While this is true, you DO want to be weight bearing as soon as possible. Put weight on it if you can, but control the swelling.
- **Ice** – Ice the injury for three sets of twenty minutes at a time. Wait twenty minutes in between sets. An even better idea is alternating heat and ice, but make sure to end with ice. The protocol of alternating heat and ice is the same as ice alone, except that the rest in between sets is replaced by heat.
- **Compress** – Add compression to the area. A brace or tightly wrapped towel or bandage is sufficient.
- **Elevate** – Elevation helps to drain the area of metabolic waste to promote healing. Lift and rest the ankle above the level of the heart.

Some other good guidelines to follow:

- **Diet** – Always drink a lot of water. Consume EFAs (essential fatty acids) to promote healing and control inflammation. EFAs can be found in fish and can be taken as a supplement in the form of fish oil capsules. Other supportive supplements/herbs are turmeric, arnica, and boswellia. Avoid pro-inflammatory foods including fried foods, sugar (processed wheat, rice, noodles, ice cream, chocolate, candy, soda pop), and caffeine.
- **Passive motion** – Take your hand and move your ankle around as comfort allows. Having stagnant fluids is a terrible thing for an acute injury because your body needs to cleanse the area of metabolic waste. Proper lymphatic drainage is promoted with proper motion.
Chiropractic care – See a chiropractor, the sooner the better. It is likely that the injury negatively affected the bony alignment of your joints. Having this fixed will decrease ankle irritation and allow for quicker recovery. This is often powerful enough to get you out on your feet again the very same day. See article on choosing a proper Chiropractor.

Many people will suggest the use of NSAIDs, over the counter drugs to help control inflammation. I am opposed to such common use of NSAIDs, but if you feel it is necessary, taking an aspirin can help. Keep in mind that more people die of NSAIDs by some reports than car accidents and even if you don’t die from an NSAID, the toxicity and stress to your liver and kidney are very high, and may lead to long term problems.

**Chronic Sprains and Strains**

**Basic Information**

Chronic sprain/strains will be considered any repeated sprain/strain to a joint. These may be sprain/strains that you thought had healed, and re-injure, or are simply something that the traceur has to take special care in landing/movements for fear of injuring themselves. The common phrase is “I always hurt this ankle”.

**Prevention**

Prevention of a chronic sprain/strain is the same as the Care/Rehabilitation section.

**Care/Rehabilitation**

First, we will assume that you have taken the steps of an acute sprain/strain during the ankles acute phase. Your next step is to read below, and follow the steps of care for the chronically injured ankle.

Chronic ankle injuries occur when you injure your ankle and never fully recover from it; it always hurts or does not feel the same. Another way chronic ankle injuries occur is when you reinjure the ankle over and over. This second case is the most common. People who sprain their ankles do it again and again. Why does this happen?

A widely accepted answer is that after you injure a ligament, the ligament NEVER fully recovers. Therefore, it is easier to hurt the ligament with less force and you will repeatedly injure the ankle.

**This is WRONG.**

This is a lie that is commonly given to athletes after sprains. This answer suggests that once you sprain an ankle, you can never fully recover and you will easily reinjure the ankle for the rest of your life. But, in the best lies, there is truth. It is true that your
ligaments will never be as strong as before, but it is a lie that you will continually sprain that ankle for the rest of your life.

Remember the first point in the background information section? The first line of defense is the muscle. The reason for chronic ankle sprains is that you never fixed the STRAIN to the MUSCLE. The muscle was damaged because it was torn in the movement. Fortunately, the muscle heals fast, unlike the ligament, and it can heal to nearly 100%. Ligaments, when it comes down to it, are overrated. They are much stronger than needed, and in certain cases, an athlete can have a complete rupture of the ligament and still perform at a high level IF they have strong muscles.

While ligaments are not very plastic (meaning moldable and adaptable), muscles are. When you exercise, you are breaking the muscle down and then it heals quickly to become stronger. A strain is when you tore it too much and the muscle is actually injured.

So, forget all that crap about never being able to escape the worry of chronic sprains. You can. But to do that, you need to do these things, a lot:

- Exercise - Titanium ankles, toe lifts, heel lifts, one legged squats. (covered elsewhere on the website)
- Proprioceptive exercises - Wobble boards, balance boards, and bosu balls. There are several therapies based on these tools. Use your imagination. Stand with both legs and do any of the above exercises, do it with one leg, do it while juggling balls.
- Proper motion - FULL passive range of motion, stretches, chiropractic care.
- General care –
  - Take it easy, let yourself heal. One of the biggest reasons people never recover from an ankle injury is they never give themselves time.
  - Ice after training. Every time, even if you didn’t hurt yourself.
  - Change your diet, follow the same guidelines as in the acute sprain/strain, especially in avoiding sugar.
  - Massage to muscles,
  - avoiding over-fatigue and reinjury through safety.

You may be thinking that “it can’t be that simple”, it is. Conditioning is both the cure for chronic sprain/strains AND the prevention. Every traceur should be doing all of these exercises because of the nature of the discipline, even if you have never hurt yourself. Do not think that since you have never had an ankle sprain, you do not need to do anything.

Now, in the situation that you still have problems, even despite these guidelines, you may have something more than a simple sprain/strain. See a qualified professional, in the following order: Doctor of Chiropractic, Physical Therapist (through referral), Medical Doctor (again refer to the “Why Should I See a Chiropractor and How Do I Choose One?” article).
Safe Training!

--Dr. Kenneth “PKChiro” Kao, D.C