

# preventing injuries

**Article by Ryan Ojerio and Chuck Woodward: photo by Ryan Ojerio**

Rock climbing can be an incredibly effective workout, a joyful adventure, and an even a powerful spiritual experience, but it is not without significant risks. Mountains and boulders made of stone are quite unforgiving to the relatively soft human body, and the force of gravity is also rather unrelenting. Put the two together and you have the potential for severe injury.

Direct physical trauma can result from falling, the unpredictable nature of eroding rock, and even from a simple lack of concentration. When taking a fall, it is important that you are aware of the position of your body. You don't just relax into it carefree. Prepare for the inevitable stop to your fall. Whether on a rope or a boulder, you should always try to the limit the amount of help you need from your belayer or spotter in avoiding injury. Your ability to fall safely is the first line of defense in averting catastrophe.

For instance, when taking a lead fall you should always position yourself like a cat, your arms and feet out in front, to absorb the impact with the wall if you are going to swing into it. Taking a lead fall without preparing for the swing back can leave you with broken ankles or wrists.

When bouldering, don't just absentmindedly jump or even step off of the boulder. The most common injury in bouldering is a twisted, sprained, or broken ankle when stepping off the boulder from a height of less than 10 inches off the ground. Paying attention is the easiest way to decrease the probability of sustaining an injury.

If you are spotting or belaying, your attention is crucial to your climber's safety. Know the proper belaying and spotting techniques inside and out. Again, pay attention and communicate. Talk to the climber to keep them aware as conditions change during an ascent. Shout "ROCK!" when you kick loose a rock above your belayer or you drop something. Move the crash pad to follow where the climber will actually fall at any given moment. These simple steps greatly reduce the potential for accidents.

In addition to the risk of direct physical trauma, rock climbers may suffer injuries as a result of the excessive strain placed on the body while climbing. Overuse injuries to the upper body are particularly common. Unless they are treated during the early stages, damage to the connective tissues of the hand, forearm or shoulder can plague a climber for the rest of their life.

Understanding the factors that contribute to overuse injuries is essential to preventing them. All climber's should be able to answer the following questions:

**Q: How does your climbing style affect your risk of a chronic or acute injury?**

How you climb can drastically increase or reduce your odds of suffering an injury. Do you warm up and stretch adequately before and after climbing? Warm muscles and tendons are more elastic and less likely to rupture. Do you repeatedly work strenuous moves while bouldering or training finger strength?

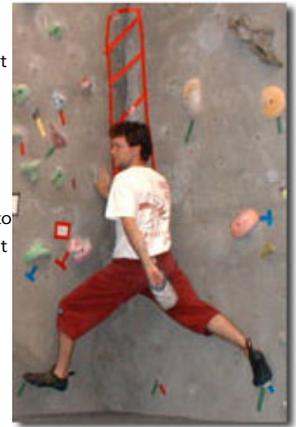
Consider spreading the stress around by putting variety into your climbing. Do you rest and recover in between climbing sessions? Giving your body time to repair micro-tears in the fibers or your muscles is the physiological process responsible for increasing your strength, and the repair of micro-tears in the fibers of your tendons decreases your chances of developing tendonitis. Even the most fit climbers should not climb three intense days in a row. When training, you should allow yourself a rest day following each workout day for the maximum benefit. And lastly, do you gradually build up the intensity of your climbing or anxiously jump on hard routes at the beginning of the season?

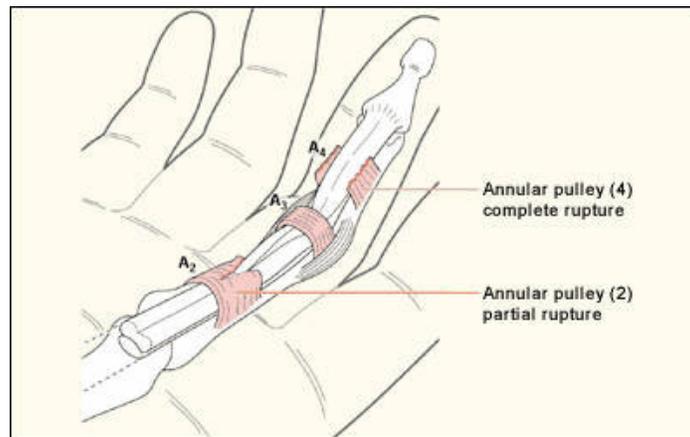
**Q: How do muscle imbalances increase the risk of injury?**

Muscle imbalances develop in climbers as they work on strengthening the pulling muscles while neglecting their opposing muscle groups. Consider the muscles that flex your fingers when gripping a ledge. They may become extremely strong during the course of a climbing season, whereas their antagonists, the flexor muscles that lie on the top of your forearm, remain relatively weak. Powerful contractions of the flexor muscles can stress the tendons in the extensor muscles resulting in tendonitis in the elbow. Similarly, tendonitis in the elbow may occur with an imbalance between the triceps and biceps. The 'hunchback' occurs from overdeveloping the shoulders and upper back in relation to the pectorals. Joint stability is also affected by imbalances, particularly the shoulder. Doing exercises such as push ups, dips, and reverse wrist curls will help even out imbalances in climbers who typically have over developed pulling muscles.

**Q: What are the high risk movements or body positions?**

High risk movements or body positions set the stage for injury by concentrating stress on particular part, or placing joints in unstable positions where a small error can push the joint out of its socket (dislocation). For example, one or two digit pockets put a huge amount of stress on the flexor tendons of those fingers potentially causing a ruptured tendon or leading to tendonitis. The crimp grip has a similar effect because of the hyperextension of the first knuckle and the extreme flexion of the second joint. Annular pulley rupture is often caused by the excessive force applied while crimping on small holds. (See the Anatomy diagram below).





**Q: What is the most effective treatment for various soft tissue injuries associated with rock climbing?**

If caught during the early phases, most overuse injuries respond well to treatment and you can return to climbing pain-free much sooner than if the injury is ignored. Severe cases of tendonitis, trigger finger, or acute injuries such as a dislocation or ruptured tendon may require steroid injection or surgery. The most important thing to do when you suspect an injury is to STOP CLIMBING! Antagonizing an injury and increasing the severity will extend the amount of time you are forced to accommodate it; from a few weeks to permanently. Testing injured parts or attempting to "climb through it" will only make things worse and shorten your climbing career. Here are some general guidelines for treating soft tissue injuries:

**PHASES OF REHABILITATION**

1. RICE (3 days-2 Weeks) Rest, Ice, Compression, Elevation and an anti-inflammatory medication such as ibuprofen will initially speed recovery by reducing swelling. Taper off with the anti-inflammatory after a few days though as inflammation later is caused by your bodies natural healing processes.
2. Range of Motion Exercises (3 days-6 Weeks) Working the joint through its range of motion without load will keep recovering tissues limber and gradually strengthen muscles and tendons.
3. Progressive Resistance Exercises (1-6 Weeks) Low intensity resistance exercises using a stretchy rubber strap will build strength progressively, preparing you for a return to normal activity.
4. Reintegrating the Injured Part (1-6 Weeks) Even though the joint may not hurt anymore, you should ease into a return to climbing by working easy routes at low intensity. Don't slip into a relapse during this critical phase.

Total time from Injury = 3 Weeks - 5 Months

\*These are just rough guidelines, only an experienced sports therapist or orthopedic doctor can recommend the right course of treatment. If possible ask around and try to find someone experienced in treating climbers.

**Q: Does finger taping help prevent injury or provide support for damaged tendons?**

The jury is still out on this one. Although many climbers tape their fingers, the only proven benefit is protecting the skin from abrasion. Furthermore, relying on tape to support your pulley tendons could prevent them from growing stronger as your body relies on the tape for support rather than strengthening the tendons. Sports therapists at the University of Oregon suggest using tape to support recovering tendons during the 4th phase of recovery, but gradually wean the finger off of the tape.