

TRAUMATIC MOUNTAIN BIKE INJURIES

Mountain bike injuries can be divided into two main groups. Acute injuries are normally traumatic and caused by a fall or collision with an object like a root or tree. These injuries are sudden, unpredictable and can result in sprains, fractures even concussion. Chronic overuse injuries are due to the repetitive nature and posture whilst riding. By nature of the type of injury chronic overuse injuries are more easily preventable with correct bike set up, training technique and physical therapy to manage any underlying alignment or muscle imbalances. Whereas acute injuries may not be as easily prevented, they too benefit from physical therapy in rehabilitation, promoting optimal healing without residual weakness or stiffness ensuring you can get back riding even stronger than before.

Thankfully, the majority of falls result in relatively minor cuts and grazes. Abrasions on the outside of the knees, hips and elbows are common. These may be painful but with some basic first aid they will heal.

More serious traumatic injuries from a fall, especially those that involve flying over the front of the handle bars include:

- Fractures, most often of the collar bone or scaphoid bone in the wrist
- Acromioclavicular joint separation
- Shoulder dislocation
- Contusion
- Concussion and/or neck injury
- Ligament sprains, often to the wrist (falling on an outstretched hand) and ankle (should your foot become trapped possibly with cleats and twisting the ankle).

1 FRACTURES

The collar bone or clavicle is one of the most frequently broken bones in the body and is a very common shoulder injury in mountain bikers. It usually occurs when you fall directly onto your shoulder or an out stretched hand where the force transmitted up the arm is often enough to cause this painful fracture. The fracture will present with pain, localised swelling, pain on shoulder movement or limited movement and possibly a visible bump. Management includes a sling to immobilise the arm for up to 6 weeks. In 5-10% of cases, surgery with a plate and screws is required if the bone is displaced. Rehabilitation with a physical therapist will be necessary to ensure full shoulder range of motion is returned, posture corrected and shoulder girdle strength restored.

A scaphoid fracture occurs in a similar way with a fall onto an outstretched hand. The scaphoid is a bone in the wrist and a fracture presents with localised pain at the base of the thumb, swelling and pain on using on pushing down on the wrist. Treatment involves a cast or thumb spica splint for 6-8 weeks followed by physical therapy. Only severe displaced fractures require surgery. Rehabilitation is essential to ensure full mobility of your wrist returns and to strengthen the hand and forearm muscles following immobilisation.

To avoid these injuries, try not to fall! Be aware that this is more likely to happen on a descent, because you are moving faster and your weight is shifted forward. Also make sure that your pedals are level with weight distributed evenly between left and right, because if you're unbalanced then you're more likely to go over the handlebars.

2 ACROMIOCLAVICULAR (AC) JOINT SPRAIN

The Acromioclavicular joint (AC joint) is part of the shoulder complex. It is on the front of the shoulder where the end of the clavicle (collar bone) attaches to the front of the scapular (shoulder blade) via strong ligaments. An AC joint sprain, sometimes called a shoulder separation refers to damage to these ligaments, commonly through a fall onto either the tip of the shoulder or onto an out-stretched hand.

Seeing as it is essentially a ligament sprain, depending on the grade of the sprain (the degree to which how many fibres in the ligament are torn) will depend on the recovery time, anywhere from 14 days to 12 weeks. It is very rare to have surgical repair, the majority of people require a sling to immobilise the shoulder to allow the ligament to heal, followed by physical therapy. Rehabilitation is crucial to restore full shoulder range of motion, as well as strengthen the muscles surrounding the shoulder thus providing support to the healing ligament.

3 SHOULDER DISLOCATION

The shoulder joint is the body's most mobile joint. It can turn in many directions. But, this advantage also makes the shoulder an easy joint to dislocate. A partial dislocation (subluxation) means the head of the upper arm bone (humerus) is partially out of the socket (glenoid). A complete dislocation means it is all the way out of the socket. Both partial and complete dislocations cause pain and instability in the shoulder. Sometimes a dislocation may tear ligaments or tendons in the shoulder or damage nerves.

The shoulder joint can dislocate forwards, backwards, or downwards. Shoulder reduction (placing the humerus

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back into the socket) is required by a medical professional, followed by immobilisation with a sling for a few weeks.

Shoulder rehabilitation is critical following dislocation, to reduce pain and restore movement, but more so to strengthen the surrounding muscles ensuring stability in the joint thus preventing a subsequent future dislocation.

4 CONTUSION

Contusion is a fancy word for a 'bad' bruise, which may result from a fall or impact. The impact doesn't break the skin but ruptures the blood capillaries beneath, resulting in a handsome-looking discoloration. Depending on where it is, it may be hard to walk or contract the affected muscle. First aid treatment consists of ice, bandaging for compression and elevation. Physical therapy is very helpful in reducing the inflammation, thus promoting faster healing rates and less long-term internal scarring.

5 CONCUSSION AND/OR NECK INJURY

Many mountain biking injuries occur to the head and upper extremities. A concussion can occur as a result of a blow to the head, either from a fall or from coming into contact with another person or object in a collision. Symptoms may range from dizziness to loss of consciousness. If you are conscious, try to keep warm and do not move until help arrives. Even if symptoms appear to be mild, you should see your doctor as soon as possible, as symptoms could become more serious later on. Any dizziness, headaches, blurred vision, excessive sleepiness, loss of appetite, nausea or pins and needles and numbness experienced within a few days of a fall or collision may be the result of a concussion and need to be examined immediately by a health professional. Having difficulty concentrating or coping with bright light is also a sign of a concussion. Rest from activity and sport, but also work or school is critical. This rest for the brain means no stimulation by television, tablets, phones, reading, games etc. Your symptoms will be closely monitored by your doctor or physical therapist and once they have resolved, a slow progressive return to work or school will commence followed by a gradual return to physical activity. Balance and co-ordination retraining with a physical therapist after a head injury is vital. A concussion can have serious long-term effects and should not be scoffed at even if suspected to be mild.

Neck injury often occurs at the same time as a concussion either due to the direct impact of the fall or as a whiplash effect from the head being flung around in a fall. Again, this could range from a mild strain to the neck joints with muscle spasm to vertebral fracture and a risk of nerve injury. Suspected severe injuries should be dealt with as an emergency with immobilisation of the neck, x-rays and MRI scans. Milder injuries can be dealt with by your physical therapist who can assess the degree of injury and treat accordingly. Hands-on therapy will include mobilising the joints and reducing the muscle spasm. Neck injuries, especially a whiplash, can have chronic effects on neck mobility, posture and persistent headaches – so thorough treatment and rehabilitation of the neck muscles is advised.

6 LIGAMENT SPRAIN

Ligaments are short tough bands (with just a bit of flexibility) made up of hundreds of individual fibres. They connect bones to bones and function as passive stabilisers of joints, allowing limited movement. Ligaments are damaged when a joint is stressed beyond its normal range. A sprain can be classified into different grades depending on the extent of ligament fibres torn. Whether it's an ankle, wrist or knee, treatment involves rest, ice and compression to reduce swelling. A period of bracing or use of a moon boot may be required initially. Physical therapy will include mobilising the joint once the ligaments have healed, as well as strengthening exercises. For an ankle specifically, balance exercises are crucial to help prevent a subsequent injury.

The information contained in this article is intended as general guidance and information only and should not be relied upon as a basis for planning individual medical care or as a substitute for specialist medical advice in each individual case. ©Co-Kinetic 2020

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