



## ROCK CLIMBING

**R**ock climbing will debut in the 2020 Olympics with more and more youth participating in the sport each year. There are three disciplines within competition climbing: 1) bouldering, 2) sport climbing, and 3) speed climbing. Bouldering is climbing without ropes on short walls with pads below for protection. This discipline tends to focus on powerful movements. Sport climbing is climbing with ropes on longer walls that focuses on endurance. Speed climbing involves climbers racing side-by-side with the intention of getting to the top of the wall first. The combination of more youth entering the sport, spotlight on competition climbing, open growth plates, and year-round training has led to an alarming increase in injuries in youth rock climbers.

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### What types of injuries are most common in rock climbing?

#### Finger

##### *Growth plate injuries to the finger*

The most common injury among youth climbers are stress fractures to the growth plates of the long finger. Research has reported a 600% increase in stress fractures just over the past decade. Adolescent rock climbers are most at risk for this injury during their growth spurt years (around ages 11–14 in girls and around ages 12–16 in boys), although these injuries can occur up until age eighteen.

These stress injuries are often ignored until the pain increases in severity. Growth plate injuries to the fingers often evolve over time. The first sign of this injury often involves swelling over the knuckle of the finger and pain particularly with crimping (holds that are tiny edges). If left untreated or if the climber continues to climb through the pain, the pain will often increase in severity leading to achy pain during the entire climbing session or during daily activities. This may lead to growth disturbances, decreased range of motion, or permanent long-term complications.

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### Shoulder

#### *Rotator cuff tendonitis*

Rotator cuff tendonitis, or inflammation of the tendons of the rotator cuff, are common among youth climbers. This injury is typically associated with overhead athletes, particularly with repetitive overhead movements. The athlete may have pain raising his/her arm above the shoulder or pain with arm rotation. Rotator cuff tendonitis is the mildest version of a rotator cuff injury.

#### *Dislocation*

A partial dislocation (subluxation), of the shoulder is also a common injury in climbing. One of the common causes of a shoulder subluxation is years of repetitive use of the shoulder. When partially dislocated, the shoulder can move downward, backwards, or forwards out of its socket. With a partial dislocation, the shoulder will typically pop back into normal position on its own. If there is a complete dislocation of the shoulder, the athlete should not attempt to pop the shoulder back into its socket without going to a health care professional as it could damage internal structures of the joint.

### Elbow

#### *Elbow tendinosis, aka "climber's elbow"*

Elbow tendinosis, or "climber's elbow," is common among climbers, particularly on the inner side of the elbow. Elbow tendinosis involves microtears of the tendon over time often caused from climbing too hard, too often, without enough rest. Another common cause of this injury is from muscle imbalances in the forearm. The pain often is gradual, recurrent, and appears either during or after climbing.

### Ankle

#### *Ankle sprains*

Ankle sprains are particularly common in the discipline of bouldering. Climbers often climb anywhere from 10–20 feet off the ground and it is important to have a safe landing with pads below for protection. Additionally, spotters are especially important in bouldering to help make sure that the climbers fall safely on the pads. It is important to make sure to have good pad placement and to ensure all spaces between pads are covered, as well.

### What are the common causes for rock climbing injuries?

- Overuse/repetitive movements
- Climbing year-round
- Open growth plates especially during rapid growth spurt

### How can youth climbing injuries be prevented?

- No double dyno campus board training (a specific training tool in climbing) until age 18 (or until growth plates have closed).
- Limit bouldering with excessive crimping .
- Avoid adding weight to the body during campus board training, hang board training, or pull-ups.
- Track the athlete's height and weight every three months from the ages of 9 to 18 to see when the athlete is growing the most to note when the athlete would be most at risk for growth plate injuries.
- Avoid specializing in one discipline year round.

### How are youth climbing injuries treated?

- If the athlete is feeling consistent finger pain for more than 24 hours or recurrent pain for more than a week, the athlete should stop climbing and go to a health care professional.
- If the injury is caught in the early stages, the youth climber may only need to take a few months (or less) of time off from climbing. Imaging may be performed to determine if there is a fracture or injury to ligaments or tendons. A hand ultrasound or MRI may be performed and the athlete may be put in a splint if the injury involves the finger.
- If the injury has progressed into the later stages, the youth climber may need to take more time off from climbing, so it is important to catch these injuries early.
- The athlete may also be placed into physical therapy during his/her rehab.

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### Expert Consultants

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### References

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