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# Preventing Sports Injuries

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# Preventing Sports Injuries

## **Abstract**

"It may be beneficial to participate in a variety of athletic activities during the year, however it is important to take rest periods between athletic seasons."

Posting about strength and conditioning for athletes from *In All Things* - an online hub committed to the claim that the life, death, and resurrection of Jesus Christ has implications for the entire world.

<http://inallthings.org/preventing-sports-injuries/>

## **Keywords**

In All Things, sports injuries, overuse injuries, risk, muscle strength

## **Disciplines**

Sports Medicine

## **Comments**

*In All Things* is a publication of the [Andreas Center for Reformed Scholarship and Service at Dordt College](#).

# Preventing Sports Injuries

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 [inallthings.org/preventing-sports-injuries/](https://inallthings.org/preventing-sports-injuries/)

Chris Fagerness

Opportunities for youth athletics have grown exponentially throughout the last few decades in the United States as well as throughout the globe. There also appears to be an upward trend of opportunities for kids to pursue athletics all year round with rise in clubs, travel teams etc. With these opportunities present there also seems to be a positive correlation in the amount of injuries associated with athletics. Specifically damaging are the amount of overuse injuries associated with youth sports. What can be done to help identify at risk athletes and prevent these types of injuries from occurring?

Risk factors for developing overuse injuries can be grouped in two categories: intrinsic and extrinsic factors. Intrinsic factors are factors that are within the body. They would include stage of growth, previous injuries, anatomical features, and menstrual dysfunction. Extrinsic factors are outside factors that can predispose someone to injury such as training volume, specialization, and strength and conditioning.

## **Intrinsic Factors**

*Stage of growth:* Research has shown that during the pre-adolescent and adolescent growth spurt athletes are more susceptible to overuse injuries. Studies demonstrate that the growth cartilage present at key sites in bone growth areas of skeletally immature athletes during a rapid phase of growth are less resistant to tensile, shear, and compressive forces than either mature bone or more immature prepubescent bone. Also factors such as lower lean muscle mass, increases in joint mobility, as well as imbalances in strength and growth of muscles and bones can play a role as well.

*Previous injuries:* Multiple research studies have found that the biggest predictor of future injury is previous injury. It is important that pain and dysfunction should not be ignored and that medical care should be sought in a timely manner and that a proper rehabilitation plan be followed until the athlete can return to athletics without pain or dysfunction present.

*Anatomical features:* How we were created can predispose athletes to overuse injuries. Abnormalities such as how our knees track, whether our arches are flat or curved and also our spine can have an impact on the forces that athletics place on the body and predispose someone to overuse injuries.

*Menstrual Dysfunction:* Amenorrhea is a medical term meaning the absence of 1 or more menstrual cycles in a given year. Research has found that female athletes who have amenorrhea have an increased risk of stress fractures due to decreased bone mineral density. There is a link between calorie availability and amenorrhea so it is very important that athletes are consuming enough calories to coincide with their energy expenditure.

## **Extrinsic Factors**

*Volume:* Research has found that higher training volumes have consistently been linked to increase the risk of overuse injury in multiple sports. In high school aged athletes research has shown that there is a relationship between hours of training and risk of injury. It seems that when athletes reach 16 hours of training per week or more they are at a significantly higher risk for overuse injury that requires medical care.

*Specialization/Scheduling:* Research has shown that students who participate in the same sport all year may have a higher risk of injury. One study in particular found a 42% increase of self-reported overuse injuries in high school students than those who participated in 3 or less different sport activities. It is also important to note that athletes who participate in two or more sports that involve the same body part are more likely to be injured as well. In youth

baseball, research has shown that those athletes who pitch than 100 innings per year are 3.5 times more likely to be injured. Other research shows that athletes who pitch more than 8 months a year are more likely to have a shoulder or elbow surgery. It is imperative that athletes take scheduled rest breaks from particular activity every year and it may be beneficial for athletes to participate in multiple sports during a year.

*Strength and conditioning:* There has been much research that links properly supervised and developed strength and conditioning training with decrease injury rates. There has however been a misconception that strength training is not appropriate for pediatric athletes, this has since been proven otherwise. It has been shown that a general strength, endurance, and flexibility program be emphasized before athletes get into sport specific training. Specific warm up programs that target balance, technique, and strength have not only been beneficial to help reduce acute injuries, specifically ACL tear, but also has been shown to help reduce overuse injuries as well.

**Tips to follow to help reduce risk for overuse injuries:**

1. Get an annual physical conducted by a physician. They can help identify athletes who have intrinsic factors that may put them at risk for injury.
2. If previously injured it is important to follow up with correct medical personnel and rehabilitate properly.
3. Stick to volume protocols. Athletes should participate in no more than 16 hours of high intensity athletic activity per week.
4. It may be beneficial to participate in a variety of athletic activities during the year, however it is important to take rest periods between athletic seasons.
5. Work on general physical fitness and strength prior to engaging in aggressive sport specific activities. This has been shown to help reduce injuries of both an acute nature but also an overuse nature.