

Scoliosis Screening for Teenage Athletes

By Julia Anderson, Student Physical Therapist

Scoliosis is an abnormal curvature of the spine that is common during the growth spurt in teenagers. Girls are more prone to scoliosis than boys, and research indicates a higher incidence in teen athletes. Scoliosis is more prominent in the these sports:

- Figure skating
- Gymnastics
- Dance
- Tennis
- Skiing
- Javelin throwing

Girls involved in gymnastics and dance may be particularly prone to scoliosis due to loosening in the joints, a delay in puberty onset which can lead to weakened bones, and stresses on the growing spine. Other sports place an uneven load on the spine.

Since teen athletes are more susceptible to scoliosis, it is important to be screened. Without screening, chances are slim that scoliosis will be diagnosed at an early age. If scoliosis is left untreated, the curvature of the spine can progress and develop into posture problems that place uneven stresses on the back, hips, shoulders, neck and legs. These stresses can lead to pain and possible arthritis in the spine later in life.

The American Academy of Pediatrics recommends screening adolescents at ages 10, 12, 14 and 16. The commonly

less than 20 degrees, moderate if the curve is between 20 and 40 degrees and severe if greater than 40 degrees.



used screen is the Forward Bend Test. This test requires the athlete to bend forward, dangling the arms with feet together and knees straight. If scoliosis is detected, the examiner may observe an unbalanced ribcage with one side being higher than the other or other deformities. The examiner will also check for equal leg length and look for neurological problems by testing reflexes, sensation and muscle function.

The severity of the scoliosis is determined by measuring the degree of the curve. Scoliosis is mild if the curve is

Treatment for scoliosis depends on the degree of the curve. Most teens with mild scoliosis require no treatment, but should have their condition monitored every six months to determine if the curve increases. If the scoliosis is moderate, a brace may be used to stop progression. A brace will not reverse an existing curve. Most braces must be worn 18 and 23 hours a day, depending on the degree of the curve and

the type of brace. Surgery may be recommended for children with a severe curve. Surgery for scoliosis involves fusing the bones of the spine together and using other instruments to support the fusion, like metal rods, hooks and plates.

Moderate exercise is not harmful. In fact, exercise and stretching can help in maintaining healthy supportive muscles in the spine. Many teens with scoliosis are encouraged to participate in athletics. You should always check with your physician before beginning any exercise routine.

For more information about scoliosis screenings, call the Sports Rehab department at 1-800-200-TEAM.

Compartment Syndrome

By Julia Anderson, Student Physical Therapist

Compartments are enclosed areas of the body that are separated by thick layers of tissue called fascia. They can be found in the hand, forearm, upper arm, abdomen, buttock and leg. Compartments contain muscle tissue, nerves and blood vessels. The fascia separating the compartments does not expand, so any swelling in a compartment will lead to increased pressure in that enclosed area. If the pressure becomes high enough, blood flow to the compartment will be blocked. This is called compartment syndrome.

When tissues are deprived of oxygen from blood, this can lead to tissue death in nerves and muscles. The most common compartments are the front of the lower leg and the palm side of the forearm. Compartment syndrome can be caused by a variety of things, including:

- Fracture of bones or crush injuries
- Bleeding
- Burns
- Casts being too tight
- Intense exercise
- Swelling of the muscle itself
- Leaking of IV fluids or injections into the compartment
- Repeated use of a muscle group
- Seizure involving the muscles in the compartment
- Snakebites

The signs of compartment syndrome include increasingly severe, constant pain in the affected muscle that does not respond to elevation or pain medications. The level of pain seems higher than what would be expected with the severity of the injury. There



also may be decreased pulses below the affected area, intense pain with stretching the muscle, difficulty in making the muscle move, numbness in the skin, pale skin, as well as tenderness and swelling of the muscle.

Many of the above signs are used to make a diagnosis of compartment syndrome. Inserting a needle attached to a pressure meter into the compartment makes an absolute diagnosis. If the pressure is greater than a benchmark number, a diagnosis of compartment syndrome is made.

The most common compartments are the front of the lower leg and the palm side of the forearm

Treatment involves elevating the limb above heart level and removal of a cast if one is present. Most cases of compartment syndrome require a fasciotomy, which is a surgery where a long incision is made in the fascia to release the pressure in the compartment. The wounds are left open and covered with sterile gauze, and finally closed with a second surgery 48 to 72 hours later.

The prognosis for compartment syndrome is good if the diagnosis is made early. The sooner treatment begins, the more likely an athlete is to return to play. If there is a delay in diagnosis, there may be permanent nerve damage and tissue loss from the decreased blood flow to the compartment. If there is extensive loss of tissue, amputation may be required.

For more information on compartment syndrome, call the Sports Rehab department at 1-800-200-TEAM.