

spondylolysis/spondylolisthesis

what is spondylolysis/spondylolisthesis?

Spondylolysis in athletes is typically an overuse stress reaction on the bone. This leads to a crack in the back (posterior elements) of the spine called the pars interarticularis. It can be on one side of the spine or both sides and is usually in the lower back (lumbar spine). If both sides have complete breaks, it can cause a condition known as spondylolisthesis. Spondylolisthesis occurs when the pars defect has allowed a forward slippage of one of the vertebral body on another vertebral body. Spondylolysis and spondylolisthesis are often seen in athletes who participate in sports that require forceful hyperextension (excessive bending backwards) of the lower back.

who is at risk?

- Children/adolescents during their preteen and teenage years.
- Children/adolescents who participate in activities that require hyperextension and excessive rotation of the lower back (i.e. football, soccer, gymnastics, dance, baseball pitchers, high jumpers, hockey, volleyball and discus/hammer throwers).
- Children/adolescents during rapid growth spurts.
- Children/adolescents who have a family history of spondylolysis/spondylolisthesis.

what are the symptoms?

- The child/adolescent will complain of non-specific lower back pain with or without leg pain.
- The child/adolescent will report pain on one side of the spine or on both sides of the spine.
- The child/adolescent will report an increase in pain with running activities and activities requiring hyperextension of the back.

what are the treatment options?

Conservative/non-surgical treatment:

- Rest from aggravating activities or “relative” rest.
- Ice the area after activity and when painful for 10 to 20 minutes up to once an hour.
- Core/trunk stabilization with strengthening to the abdominals and back muscles in a pain-free range.
- Muscle stretching to improve flexibility of back extensors and hamstrings (back of legs).
 - Stretching should be done both before and after activity.
 - Stretching should be in a pain-free range.
- A lumbar brace that limits the extension of the spine can be beneficial.
- If the condition does not improve, a referral to physical therapy to address pain, swelling, range of motion, flexibility, strength, gait, bracing and a return to sport training program will usually improve symptoms.

Surgical treatment:

- Rarely required. More than 97 percent of patients require no surgery.

what is the time frame for returning to activity/sport?

- Grade I (less than 25 percent slippage): often asymptomatic and continues with sport activities.
- Grade II (greater than 25 percent slippage): return to sport when pain-free with extension and rotation movements.
- Grade III (greater than 50 percent slippage): recommended to avoid high speed and contact sports.
- Grade IV (greater than 75 percent slippage): recommended to avoid high speed and contact sports.

what are the long-term side effects?

Most patients do not require surgery and they often continue with their activities. It is recommended that core strengthening and flexibility remain a part of the patient’s ongoing routine to minimize symptoms.



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