Salter-Harris I Fracture of the Distal Fibula

What is a Salter-Harris I fracture of the distal fibula?
The distal fibula is the prominent bone on the outside of the ankle. In a growing child, there is a growth plate at the distal fibula. Growth plates are made up of cartilage, which is softer and more vulnerable to injury than mature bone. A Salter-Harris I fracture goes through the plane of the growth plate, without injuring the surrounding mature bone. It is the mildest type of fracture that can occur to a growth plate.

How does this injury occur?
A Salter-Harris I fracture of the distal fibula typically occurs when a child “rolls” or “twists” the ankle. This injury is most likely to occur in basketball, football, soccer and volleyball. A Salter Harris I fracture of the distal fibula can be easily confused with an ankle sprain. In an adult, twisting the ankle most often results in a sprain of the ankle ligaments. However, in a growing child, the growth plate is much weaker than the surrounding ligaments, which means the same twisting injury is more likely to cause a growth plate fracture than an ankle sprain.

What are the signs and symptoms?
There will be pain on the outside of the ankle. Sometimes there is swelling and bruising. Your child may have difficulty walking immediately after the injury, and may walk with a limp. Often he or she is unable to continue running or playing sports.

How is it diagnosed?
Your doctor will examine your child’s ankle. There will be tenderness over the growth plate and no tenderness over the ankle ligaments. X-rays may show some swelling or widening of the growth plate, but more commonly the X-rays are normal. Because a Salter-Harris I fracture is a mild injury to the growth plate, X-rays do not always show evidence of the fracture. Your child’s history and clinical examination by your child’s physician are the keys to making an accurate diagnosis of a Salter-Harris I fracture.

How is it treated?
Your doctor may prescribe a short-leg walking cast or air stirrup. Applying ice for 10-15 minutes several times a day can decrease the pain and promote healing. If the pain is severe, crutches may be necessary for the first few days until weight bearing is more comfortable. Rest from high impact activities (running and jumping) is required for this fracture to heal. Healing usually takes about 4-6 weeks, at which time it will be safe for your child to return to sports and activities. It is very rare for a Salter-Harris I fracture to cause problems with growth of the distal fibula (less than 1% of fractures).