

## Juvenile Stress Fractures may take time to heal

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NEW YORK (Reuters Health) - The resolution of stress fractures in children and adolescents, while rare, can be protracted because of delays in diagnosis and inappropriate initial treatment, German and Austrian researchers report.

Dr. Philip Kasten, of Heidelberg University, and colleagues studied 25 children who sustained 27 stress fractures affecting bones with an open growth plate, the area of tissue growing toward the end of the long bones.

Growth plates close and are replaced by solid bone -- usually sometime during adolescence. The study patients ranged in age from 3 to 17 years, with the average age being 12.9 years. The average follow-up was 4.8 years

The risk factors for stress fracture in this population were essentially the same as those seen in adults, the researchers report in the *International Journal of Sports Medicine*.

The most common site of stress fracture (13 fractures) was the tibia (shin-bone), followed by fractures to the metatarsals, the relatively long bones in the center of the foot.

Of the 27 fractures, 26 were treated conservatively while the remaining fracture was treated with surgery. The average duration of therapy was 8.9 weeks.

Full recovery was documented in 17 cases within 3 months after the initial diagnosis. However, in 9 cases, some symptoms persisted for 1 year after diagnosis.

The investigators observed a significant correlation between a full recovery after 3 months and a "visible fracture line on magnetic resonance tomography in contrast to a stress reaction with merely increased signal intensity."

They also noted a significant correlation between a mistaken in the initial diagnosis and delayed diagnosis (defined as more than 2 weeks after the first office visit) and patient outcome 12 months after diagnosis."

Partly because of this, they conclude that a "strikingly high" proportion of patients had a prolonged course.

The chances of complete healing appeared to be better when stress fractures had a visible fracture line on MRI, as opposed to just swelling.

If there is the possibility that a patient has a stress fracture, the authors advise investigation using imaging studies, such as MRI.

SOURCE: *International Journal of Sports Medicine*, March 2006.