

# Panner's Disease of the Elbow

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## Introduction

Panner's disease affects the dominant elbow of children, mainly boys, between the ages of five and 10. For unknown reasons, normal growth in the outer edge of the elbow is disrupted, which causes the small area of bone to flatten out. The child begins to complain of pain during activity. The pain eases with rest. Over a period of one to two years, the bone slowly rebuilds itself. During this time, symptoms gradually disappear, although the elbow may never fully straighten out.

Panner's disease is similar to osteochondritis dissecans, a condition that occurs after the skeleton is done growing. Both conditions are most common among certain young athletes, especially baseball pitchers and gymnasts.

This guide will help you understand

- what part of the elbow is involved
- how this problem develops
- what treatment options are available

Related Document: [A Patient's Guide to Adolescent Osteochondritis Dissecans of the Elbow](#)

## Causes

How does this problem develop?

This unique condition is part of a category of bone development disorders known as the osteochondroses. (Osteo means bone, and chondro means cartilage.) In normal development, specialized bone growth centers (called growth plates) change over time from cartilage to bone. The cartilage cells within the growth plates actually change into bone cells. As this occurs, the growth centers expand and unite. This is how bones grow in length and width. Bone growth centers are located throughout the body. Panner's disease involves disruption of the growth plate of the capitellum.

Scientists are not exactly sure how the growth plate within the capitellum is disrupted. Some think the problem is hereditary (handed down in the genes). Others believe that small strains add up over time, such as from repeatedly throwing a ball.

Another possible cause is that the tiny blood supply to the humeroradial joint is somehow blocked. During development, only the ends of a few small blood vessels enter the back of the humeroradial joint. If this scarce blood supply is damaged, there is no back-up. The cells within the growth plate of the capitellum die, causing the knob of bone to collapse.

Regardless of how the problem starts, the next stage in Panner's disease is cell death within the growth plate of the capitellum. The death of these cells comes from avascular necrosis. (Avascular means without blood, and necrosis means death.) When necrosis occurs, the bony knob of the capitellum begins to flatten out. It flattens out because the newly formed bone begins to be absorbed by the body.

Then, over a period of one to two years, new blood vessels enter the area, and new cells begin to form within the growth plate. These cells help gradually rebuild the original shape of the capitellum.

Panner's disease affects the growth plate of the capitellum in children under the age of 11. As mentioned earlier, a separate but similar condition that affects the capitellum of older children and adolescents. This separate condition is called osteochondritis dissecans (OCD). In older children, OCD of the capitellum doesn't involve the growth plate. Instead, the problem affects the smooth covering of the capitellum called the articular cartilage. OCD also affects the bone just below the articular cartilage, called the subchondral bone.

Related Document: [A Patient's Guide to Adolescent Osteochondritis Dissecans of the Elbow](#)