

## Traction Apophysitis

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### Background

#### Apophysis

= a normal developmental outgrowth of a bone which arises from a separate ossification centre, and fuses to the bone later in development.

An apophysis usually forms an important insertion point for a tendon or ligament.

- Apophysitis occurs when the pull of a strong tendon causes damage to the unfused apophysis to which it is attached.
- Can lead to local tiny avulsion fractures resulting in swelling and tenderness at the point of insertion of the tendon.
- Occurs in adolescents, usually 7 to 15 years.
- Usually follows overuse.
- Commonest sites:
  - Insertion of the patella tendon into the tibial tubercle below the kneecap (Osgood Schlatters disease)
  - Insertion of the achilles tendon into the heel bone (Severs disease)
  - The bottom of the kneecap (Sinding-Larsen-Johansson syndrome).

### General management

Symptomatic treatment with rest and NSAIDs (ibuprofen / naproxen / diclofenac) for all conditions

Refer to Physio and back to GP for follow-up.

### Assessment

Presents as pain at the points where tendons attach to bones. The pain will often be present during or after sport.

Severs disease can be due to running, and in the knee due to repetitive loading such as jumping activity (common in footballers).

The pain can have a pattern of coming and going with activity, and can vary in severity. This means some children will be able to play through the pain but some will have to stop during the activity.

Pain can be unilateral or bilateral.

**Osgood-Schlatter's Disease (Figure 1 & 2):** Anterior knee pain after exercise is characteristic. Tibial tuberosity is prominent and tender. Pain may be reproduced by attempted extension against resistance.

An X-ray will show an enlarged and sometimes fragmented tibial tuberosity

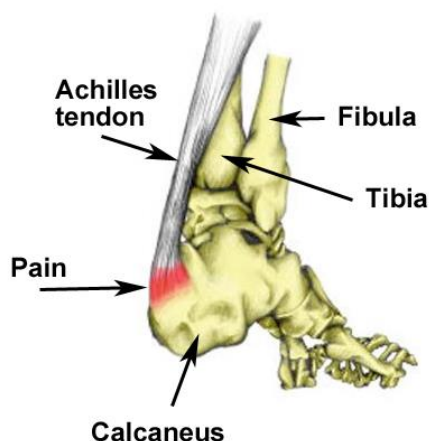


**Sever's Disease (Figure 3):** External appearance of the heel is almost always normal. Oedema and erythema are absent. The main diagnostic tool is pain on medial- lateral compression of the calcaneus in the area of growth plate, so called squeeze test.

Foot radiographs are usually normal or may reveal a fragmented sclerotic calcaneal apophysis. The diagnosis is primarily clinical.

### Severs Disease

Figure 3



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**Sinding-Larsen-Johansson Disease (Figure 4):** Localised tenderness to lower pole of the patella. Slight swelling, warmth and tenderness below kneecap. Patients are typically active boys aged 10 to 13 years but can also affect active girls a couple of years younger. It is worse with exercise, stair climbing, squatting, kneeling, jumping and running. It may be unilateral or bilateral and usually relieved by rest.

Knee X-ray can show calcification or ossification at the junction between the patella and the patella ligament

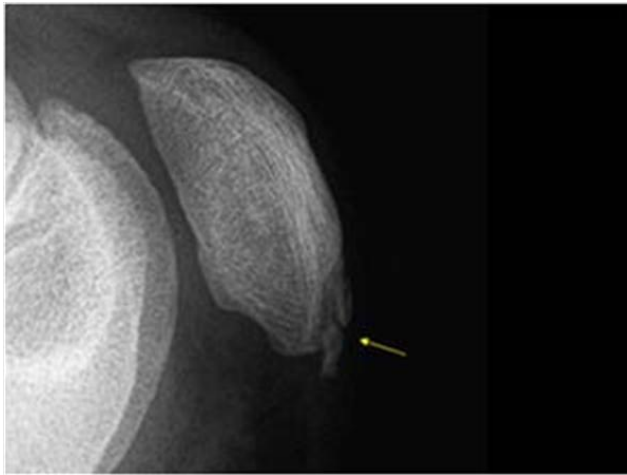


Figure 4