

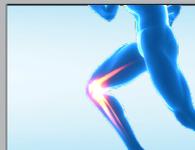
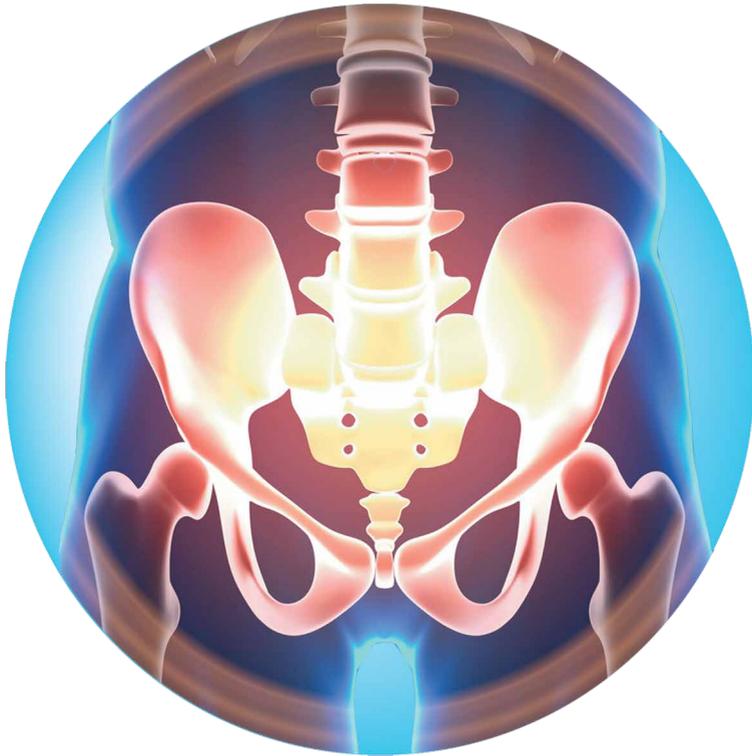


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Anterior Inferior Iliac Spine Avulsion Fracture FAQs



What is the Anterior Inferior Iliac Spine?

The Anterior Inferior Iliac Spine (AIIS) is a piece of bone just above the hip joint, which is the attachment of part of the rectus femoris muscle, one of the quadriceps muscles of the front of the thigh.

What is an AIIS avulsion fracture?

The term 'avulsed' means 'pulled off'. The powerful contraction of rectus femoris muscle pulls off the bony origin of the muscle through the unfused growth plate.

Commonly, this occurs kicking a football.

AIIS avulsion fractures are relatively unusual injuries, most common in teenage athletes^{1,2}. In teenage, the muscles are relatively powerful, and the bone is relatively weak. The AIIS forms from one of the small growth centres separate from the main pelvic bones, and the growth plate between the AIIS and the ilium bone of the pelvis is a weak point until the two bones fuse together at skeletal maturity in late teenage.

How is an AIIS avulsion fracture diagnosed?

Diagnosis is by typical history of sudden pain in the groin on kicking, tenderness of the AIIS, and the X-ray appearance (Fig. 1).



Fig. 1 X-ray shows right AIIS avulsion (arrowheads) and normal left AIIS (arrows) in a teen soccer player.

Fracture may follow 'apophysitis' ('inflammation' of the AIIS) and in this case is probably best understood as completion of a stress fracture.

Sometimes an athlete fractures both sides ³.

Sometimes the fractures are mistaken for cancers ⁴.

How is an AIIS avulsion fracture treated?

Usually the fracture heals within 2 months, with rest from sport.

Operative treatment probably allows quicker recovery and return to training, however there are no proper trials.

There are a few reports of painful non-union of pelvic apophyseal fractures requiring delayed operative treatment.

Non-operative treatment is recommended for:

1. Minimally displaced fractures
2. Individuals who are not under time-pressure to return to sport

Operative treatment is recommended for:

1. Fractures displaced by 2cm or more – because of the risk of painful non-union and muscle weakness, and of impingement on the femur by the displaced AIIS (sub-spinous FAI) ⁵
2. Athletes who wish to return to full function as quickly as possible
3. Patients who have sub-spinous femoro-acetabular impingement after healing of the AIIS fracture ⁵ (Fig. 2 & 3)

Non-operative treatment consists of:

1. Rest
2. Pain killers
3. Physiotherapy

4. Gentle strengthening from about 6 weeks post-injury

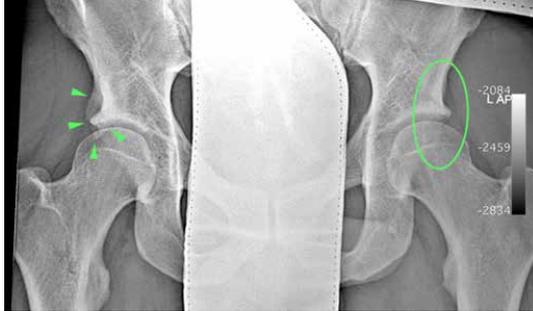


Fig. 2 X-ray of a 28-year-old soccer player shows a very large and prominent AIIS on the right (arrows) and normal appearance on the left (circled).



Fig. 3 The end of the prominent AIIS was removed because it was impinging (jamming the hip) – the removed piece of bone is about 2.5cm (1 inch) long.

What about school sport?

Students should refrain from normal sport until their pain has settled and they have fully recovered their strength and endurance – this usually takes at least six weeks. During this time they should do their physiotherapy stretches and strengthening exercises in place of their usual Physical Education sessions.

References

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