

Avascular Necrosis (AVN) of Femoral Head



Avascular Necrosis (AVN) of Femoral Head

The 'ball and socket' of your hip joint is formed by the top end of your thigh bone (femoral head) and a hollow in your pelvic bone known as the acetabulum. Avascular necrosis (also known as osteonecrosis) is a condition in which the blood flow to your femoral head is blocked. You are constantly making new bone to replenish your ageing bone. A healthy flow of blood is required as it brings the nutrients and oxygen needed for this process. Without blood flow, your femoral head essentially dies and this in turn leads to tiny cracks in the cartilage and eventually collapse of the bone (Figure 1). As the disease progresses, you will develop osteoarthritis of your hip.

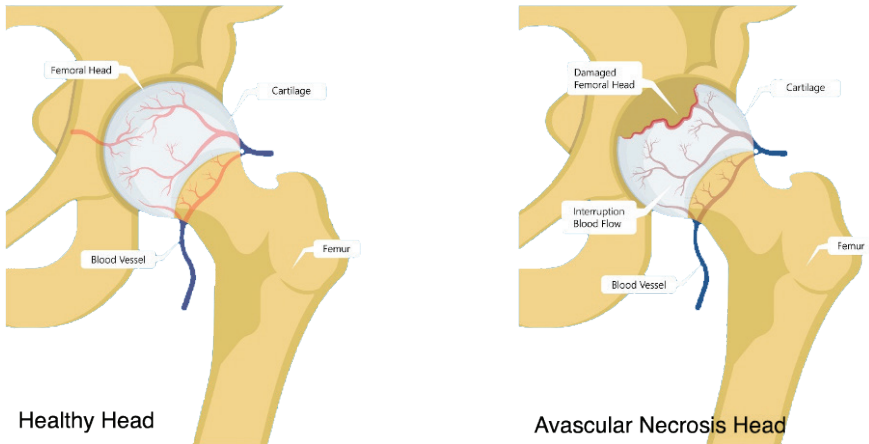


Figure 1

Front view of a left hip depicting the blood supply to a healthy hip joint (left), and the disrupted blood supply to a hip joint and the resultant damage to the femoral head (right).

Causes

This is a condition that tends to affect males more than females and of those between the ages of 40 to 65. Contributing factors include:

- ▣ **Alcohol**

Excessive alcohol intake remains one of the commonest causes in the UK. It is thought to increase fatty deposits in your blood vessels.

- ▣ **Corticosteroids**

Many conditions require patients to be on long-term steroid treatment, e.g.

asthma, inflammatory arthritis, systemic lupus erythematosus (SLE). The exact reasons as to how steroids cause AVN are not clearly understood.

- **Smoking**

This can lead to narrowing of your blood vessels and reduce the blood flow to your femoral head.

- **Injury**

Any injury that disrupts the blood flow to your femoral head can lead to AVN, e.g. fractures (break near your hip joint) or hip dislocations.

- **Medical conditions**

Diseases such as high cholesterol, sickle cell anaemia, Gaucher's disease, and decompression sickness can reduce blood flow to your femoral head.

Symptoms

AVN may lead to the following:

- **Pain** – this tends to begin as a dull ache in your groin. As the disease progresses, the ache may develop into a pain that makes it difficult for you to move your hip, stand or bear weight on the leg.
- **Stiffness** – this will become noticeable in the later stages of the disease. You may notice difficulties with activities that require you to bend your hip fully e.g. putting your sock or shoes on, trimming your toe-nails, or picking an item off the floor.
- **Mechanical symptoms** – this may be caused by injured cartilage or bone getting caught when you move your hip. This may range from a painless grinding sensation, to clicking that may be painful. This, in turn, may lead to your hip feeling unstable or giving way. This also tends to present in the later stages of the disease.

Diagnosis

The diagnosis of this condition is best made with an MRI in the early stages of the disease. As the disease progresses and osteoarthritis develops, an x-ray of your hip may be enough to confirm the diagnosis.

Treatment

Specific treatment will depend on a number of factors including your age, your overall health and your views on the treatment options.

- **Lifestyle modification**

If your alcohol intake is excessive, abstaining or reducing your intake may help. If you have high cholesterol levels, consider reducing this with diet and/or medication. If you are on steroid treatment, ensure minimal periods on high-dose therapy if possible. Avoid smoking as this may also affect the blood flow by narrowing the blood vessels.

- **Rest and activity modification**

Stop aggravating activity and consider alternative forms of exercises that are lower impact for your hip e.g. swimming, cycling. Consider increasing intensity of activity on a more graduated basis and carrying out warm-up stretches.

- **Ice Packs**

Apply several times daily for a period of 15 minutes each time around area of pain.

- **Anti-inflammatory medication**

If oral preparations do not help, consider topical formulations to rub onto the painful area. Anti-inflammatories may have adverse side-effects if you have certain medical conditions or take certain medications so please consult with your GP prior to commencing.

- **Weight loss**

(If appropriate) to minimise stress on your articular cartilage and the risks associated with any future surgical treatment.

- **Physiotherapy**

The aims of physiotherapy are to maintain your hip joint movements, improve muscle tone and strength. For detailed description, please visit [American Association of Hip and Knee Surgeons \(AAHKS\) Home Exercise Programme](#). These exercises are described for those preparing for surgery but are the same exercises that would be recommended if you are trying to manage your AVN/osteoarthritis without surgery.

- **Core decompression surgery**

This involves drilling hole(s) into your femoral head to relieve the pressure within the bone and create channels for new blood vessels to form. This can be augmented with addition of bone graft into the channel(s).

- **Osteotomy surgery**

This procedure involves breaking your bone and re-aligning it to reduce the weight going through the damaged area of your femoral head.

- **Hip replacement surgery**

If your symptoms do not settle despite the above measures, you may wish to consider the option of a hip replacement. For further information, please refer to [Mr Kosuge's Patient Information Booklet – Hip Replacement](#).

Outcome

AVN is a significant condition that can cause quality of life changing pain. The outcome of treatment is better if the disease is diagnosed early. If preventative factors are identified, it is important to address them.



CONSULTANT HIP & KNEE SURGEON
BMedSci FRCS (Trauma & Orthopaedics)

📍 RIVERS HOSPITAL
Private
High Wych Road
Sawbridgeworth
CM21 0HH

☎ 01279 602718

📍 THE PRINCESS ALEXANDRA HOSPITAL
NHS
Hamstel Road
Harlow
CM20 1QX

☎ 01279 827060

To arrange a private consultation with Mr Kosuge:
[Request an appointment \(online\)](#)

For further information, please visit:
🌐 www.denniskosuge.co.uk

Disclaimer Mr Kosuge has tried very hard to keep the information in this leaflet accurate and up-to-date, but he cannot guarantee this. This information is provided as an education resource and is not intended to serve as medical advice. For full details, please visit: www.denniskosuge.co.uk/disclaimer. If you are seeking orthopaedic advice, please feel free to arrange a consultation with Mr Kosuge.

© **All rights reserved.** No part of this leaflet may be reproduced or distributed in any form without prior written permission from the author, with the exception of non-commercial uses permitted by copyright law.