Femoral shaft fracture surgery (femoral nailing)

Brought to you in association with EIDO Healthcare and endorsed by the Royal College of Surgeons England.

Discovery has made every effort to ensure that we obtained the information in this brochure from a reputable source. We have adapted the content to reflect the South African market or healthcare environment.

You should not only depend on the information we have provided when you make any decisions about your treatment. The information is meant to act only as a guide to the treatment you are considering having. Please discuss any questions you may have about your treatment with your treating healthcare professional.
What is a femoral shaft fracture?
A femoral shaft fracture is a break of the femur. Femoral nailing is an operation to fix a broken femur using a metal rod. The metal rod is called a femoral nail (also called an intramedullary or interlocking nail) (see figure 1).

About this document
Your surgeon has recommended femoral nailing to treat your broken femur. However, it is your decision to go ahead with the operation or not. We understand this can be a stressful time as you deal with different emotions and sometimes have questions after seeing your surgeon. This document will give you a basic understanding about your operation. We tell you about the things you can do to help make the operation a success. It is also important to remember to tell your surgeon about any medicine you are on so he or she can manage this, if necessary. It will also tell you about what to expect after the operation – while in hospital and in the long term. Your surgeon remains the best person to speak to about any questions or concerns you may have about the operation.

How does a femoral shaft fracture happen?
Road accidents and sports injuries are the cause of most femoral shaft fractures. You can lose up to a litre of blood into the thigh muscle at the time of the injury. Sometimes the injury causes the bone to break through your skin. This is known as an open or compound fracture.

What are the benefits of surgery?
You will only need a short stay in hospital and you will be able to use your leg sooner. Surgery will also make sure your bone heals in a good position.

Are there any alternatives to femoral nailing?
A femoral shaft fracture can be treated in traction (using a heavy weight fixed to your leg to pull the bones into position until they heal). However, some fractures are difficult to hold in a good position without surgery. If you have an open fracture, you will almost certainly need an operation. Your surgeon can sometimes fix your femoral shaft fracture with an external fixator or a plate and screws. They will explain why they recommend femoral nailing for your fracture.

What will happen if I decide not to have the operation?
You will have your leg in traction. You may need to stay in hospital for a long time. This can lead to complications such as blood clots, chest infection and pressure sores.
After a number of weeks your leg may be put into a large plaster cast (called a hip spica) or a brace. The fracture will take about 3 to 6 months to heal. You will need physiotherapy to learn to walk again because your muscles will have become weak after spending such a long time in bed.

**What does the operation involve?**
The healthcare team will carry out a number of checks to make sure you have the operation you came in for and on the correct side. You can help by confirming to your surgeon and the healthcare team your name and the operation you are having.

Various anaesthetic techniques are possible. Your anaesthetist will discuss the options with you and recommend the best form of anaesthesia for you. You may also have injections of local anaesthetic to help with the pain after the operation. You may be given antibiotics during the operation to reduce the risk of infection. The operation usually takes an hour to 90 minutes.

Your surgeon will push the femoral nail down the inside of the bone, either through a cut on the side of your hip or on the front of your knee. The nail goes across the break and holds it in position. The nail is held in the bone by locking screws that pass through holes in the nail.

If you have an open fracture, your surgeon will clean your skin wound thoroughly during the operation to reduce the risk of infection. If your skin is badly damaged, you may also need one or more plastic surgery operations. Your surgeon will close your skin with stitches or clips.

**What should I do about my medicine?**
Let your doctor know about all the medicine you take and follow their advice. This includes all blood-thinning medicine as well as herbal and complementary remedies, dietary supplements, and medicine you can buy over the counter. Anti-inflammatory painkillers may prevent the fracture from healing properly, so it is better not to take these if possible.

**What can I do to help make the operation a success?**
If you smoke, stopping smoking may reduce your risk of developing complications and will improve your long-term health. Nicotine is known to stop fractures from healing.

Regular exercise should help you to recover and improve your long-term health. Before you start exercising, ask the healthcare team or your GP for advice.

You can reduce your risk of infection in a surgical wound by keeping warm around the time of the operation. Let the healthcare team know if you feel cold.

**What complications can happen?**
The healthcare team will try to make the operation as safe as possible but complications can happen. Some of these can be serious and can even cause death. You should ask your doctor if there is anything you do not understand. Your doctor may be able to tell you what the risk of a complication for you is.

1 **Complications of anaesthesia**
Your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.

2 **General complications of any operation**
   - Pain. The healthcare team will give you medicine to control the pain and it is important that you take it as you are told so you can move about as advised.
   - Bleeding during or after the operation.
   - Unsightly scarring of your skin, although the cuts needed are small.
   - Difficulty passing urine. You may need a catheter (tube) in your bladder for one to two days.
   - Infection of the surgical site (wound). It is usually safe to shower after two days but you should check with the healthcare team. Keep your wound dry and covered. Let the healthcare team know if you get a high temperature, notice pus in your wound, or if your wound becomes red, sore or painful. An infection usually settles with antibiotics but you may need another operation.
• Blood clot in your leg (deep-vein thrombosis – DVT) (risk: 1 in 3). This can cause pain, swelling or redness in your leg, or the veins near the surface of your leg to appear larger than normal. However, most blood clots are small and settle without causing any problems. The healthcare team will assess your risk. They will encourage you to get out of bed soon after the operation and may give you injections, medicine, or inflatable boots or special stockings to wear. Let the healthcare team know straightaway if you think you might have a DVT.
• Blood clot in your lung (pulmonary embolus), if a blood clot moves through your bloodstream to your lungs. Let the healthcare team know straightaway if you become short of breath, feel pain in your chest or upper back, or if you cough up blood. If you are at home, call an ambulance or go immediately to your nearest casualty unit.

3 Specific complications of this operation
• Nerve injury (risk: 1 in 11). When traction is used during the operation to pull the fracture into position, the pudendal nerve in your groin can be damaged. This can cause numbness in your groin. For men, it can sometimes cause problems having an erection. The nerve usually recovers in a few weeks.
• Compartment syndrome, where the thigh muscles swell and get tight (risk: 1 in 75). You may need another operation to make a cut on your leg to relieve the pressure.
• Fat embolism, where tiny particles of fat from bone marrow and blood block blood vessels in your lungs (risk: 1 in 25). Your lungs will stop working properly. You may need oxygen or, for some people, intensive-care treatment.
• Malunion, where the position of the femoral nail causes a slight twist in your leg (risk: 1 in 5). This does not usually cause any problems.
• Delayed union, where the fracture does not heal in a normal period of time (risk: 1 in 20). You may need another operation to remove one of the locking screws or to replace the femoral nail.
• Infection in the bone, which is a serious problem that interferes with healing (risk: 1 in 100). The risk is higher if you had an open fracture. If you get an infection, you will often need another operation.
• Breaking of the femoral nail or the locking screws after a few months (risk: 1 in 40). Only the locking screws are usually affected, which is rarely a problem. If the femoral nail breaks before the fracture has healed, you will need another operation to replace it.
• Heterotopic ossification, where small areas of bone form in the muscles near the top of the femur (risk: 1 in 4). This does not usually cause any problems.

How soon will I recover?

• In hospital
After the operation you will be transferred to the recovery area and then to the ward. At first, you will need to keep your leg raised. You will be given painkillers to help relieve any pain. The physiotherapist will help you to start walking using crutches. They will give you exercises to prevent your joints from becoming stiff. Your surgeon will tell you how much weight you can put on your leg.
Keep your wound dry for four to five days, and use a waterproof dressing when you have a bath or shower.
The healthcare team will tell you if you need to have any stitches or clips removed, or dressings changed.
You should be able to go home after three to five days. However, your doctor may recommend that you stay a little longer.
If you are worried about anything, in hospital or at home, contact the healthcare team. They should be able to reassure you or identify and treat any complications.

• Returning to normal activities
To reduce the risk of a blood clot, make sure you follow carefully the instructions of the healthcare team if you have been given medicine or need to wear special stockings.
You will need to have X-rays to check that the fracture is healing properly. Once the fracture is healing well, your surgeon will let you put more weight on your leg. It usually takes 3 to 6 months for a femoral shaft fracture to heal. The healthcare team will tell you when you can return to normal activities.
Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, ask the healthcare team or your GP for advice.
Do not drive until your doctor tells you that you can.

• **The future**

Most people make a good recovery and return to their normal activities. It is usual to get occasional aching at the site of the fracture, particularly if the weather is cold. Nobody knows the reason for this and it also happens to people who are treated using traction.

If you get aching because of the femoral nail itself (risk: 1 in 7), you may decide to have another operation to remove the femoral nail. You will need to wait up to 18 months after your first operation before the bone is strong enough. If you do have the nail removed, there is a risk that you will have another fracture in the same place. Use crutches for a few weeks after the nail is removed to reduce this risk.

Sometimes the heads of the locking screws that are at the top or bottom end of the femur cause discomfort (risk: 1 in 10). If this is a problem, you can have a small operation to remove them.

**Summary**

Femoral nailing is almost always the best treatment for a femoral shaft fracture. Compared with treatment by traction, you will spend a much shorter time in hospital and will get back to your normal activities sooner.

Surgery is usually safe and effective but complications can happen. You need to know about them to help you to make an informed decision about surgery. Knowing about them will also help to detect and treat any problems early.

**Keep this information leaflet. Use it to help you if you need to talk to the healthcare team.**

**Acknowledgements**

Author: Mr Stephen Milner DM FRCS (Tr. & Orth.)
Illustrations: Medical Illustration Copyright © Medical-Artist.com

This document is intended for information purposes only and should not replace advice that your relevant healthcare professional would give you.

You can access references online at www.aboutmyhealth.org. Use reference OS12.