

## INTRODUCTION

Your knee consists of two halves each designed to carry more or less equal loads. The one half lies on the inside of the leg; the other on the outside. In a perfectly aligned lower limb, a straight line running through the middle of the hip to the middle of the ankle will also cross the middle of the knee. This is called the weight-bearing line of the leg. If a person has knock knees the alignment is out and the weight-bearing line will not run through the middle of the knee (black line), but through the outside half, resulting in excessive load on that part of the knee. With time this will result in abnormal wear of this part of the joint. This is similar to the wear of a car tyre when the alignment of the wheels is out.



One of the solutions to this localized wear in the joint is to realign the lower leg, a procedure known as an osteotomy. The principle of an osteotomy is to realign the leg so that the weight-bearing line will run through the inner half of the knee.

The exact alignment of the lower limbs is measured on a special long X-ray where the hips, knees and ankles can be seen on one view. From these special X-rays we can measure the degree of malalignment and plan how much we should realign the leg to change the weight-bearing from the damaged to the relatively normal part of the joint. The correction will be performed on the upper leg (femur) above the knee joint.

## PRE-OPERATIVE

You will be admitted to the hospital the day of the operation. For 6 hours before the operation you should not eat or drink anything. Total hospital stay is approximately 2 - 3 days. If you usually have a drink at night, please continue doing so while in hospital; it will speed up your recovery. The hospital however does not supply liquor; please bring your own.

## OPERATION

We will first do an arthroscopic examination on your joint under a general anaesthetic and if necessary correct any abnormality in the joint itself. This is followed by the insertion of a specific size of bone wedge in the upper leg just above the knee. This bone wedge is obtained from the bone bank. The bone is fixed with a plate and screws, giving a very stable fixation. The total anaesthetic time is approximately 1 hour.



## POST-OPERATIVE

No plaster cast or brace is needed. You can immediately start moving your knee; in fact we would encourage you to do this as much as possible. The drainage tubes in the leg are usually removed on the 1st day after the operation.

The physiotherapist will visit you daily following the operation. The rehabilitation exercises might seem simple and easy but it is of the utmost importance that they should be done regularly and correctly to ensure a quick and thorough recovery.

You may take some weight on the foot of the operated leg. As soon as you feel comfortable you can start walking using 2 crutches. The bandage around the leg is removed on the 3rd day after the operation and the wound is then covered with a small plaster strip. You can now shower. The stitches do not need to be removed as they are soluble and beneath the skin. You can remove the plaster strip after about a week.

## POSSIBLE COMPLICATIONS

Like all surgery, osteotomies are not without possible complications. The incidence of complications is low, less than 1%. In order to minimise the possibility of a blood clot heparin is given. Local complications such as bleeding and infections are possible. There is a slight possibility that the bone can take longer than expected to knit or even that it will not knit at all; necessitating further surgery and bone grafts.

The plate used for fixing the bone lies just beneath the skin and often causes irritation of the overlying soft tissue. It may also restrict the range of movement of the knee. It is therefore usually necessary to remove the plate 6 months after surgery. This is a small procedure and requires an overnight stay in hospital.

## FIRST FEW WEEKS AT HOME

It is very important to understand that your bone must knit in the area where the bone wedge was inserted. The bone will take at least 8 to 12 weeks to fuse and during this period it is very important that you should protect your leg.

You must place only part of your weight on the operated leg and use 2 crutches at all times. It is advised that you do not drive for the first 4 - 6 weeks after the operation.

Your follow-up consultation, at our rooms, will be approximately 6 weeks after the operation. We will take X-rays of the leg. If the bone healing is satisfactory, we will allow you to start carrying progressively more weight on the leg.

## LONGTERM

As bone fusion and healing is a slow process you must not expect to feel comfortable whilst walking for at least 3 to 6 months after the operation. You can expect a gradual improvement in your knee for up to a year after the operation.

You can gradually start doing more, always staying within your pain limit. You should eventually be able to walk pain-free, play golf and even tennis. We would not necessarily expect that you would be able to run pain-free. If you can this must be seen as a bonus. During normal walking the load through your knee joint is approximately 4 times your body weight. This increases to 8 times your body weight when running!

The results of osteotomies are in general very satisfactory. It is however important to realise that the one half of your knee joint is severely damaged and that with the operation we can only redistribute the load to a relatively normal part of the joint. With this in mind, do not expect a total return to normality. Often the plate and screws cause irritation, necessitating their removal. This is a relatively small procedure only requiring overnight hospitalisation.

