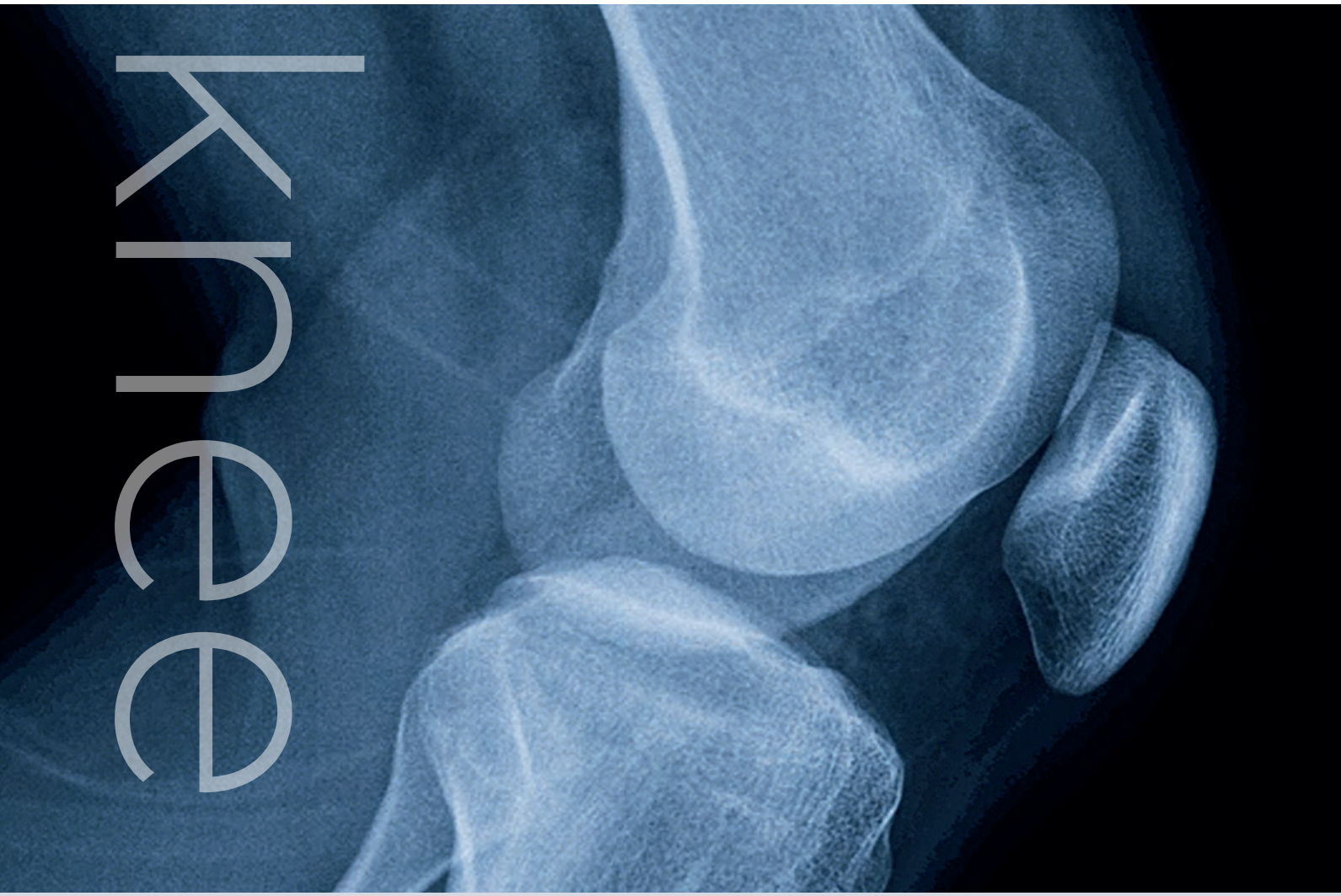
NHS Grampian



Department of Orthopaedics

Patient Advice and Information

Enhancing your recovery after **knee** joint replacement surgery

knee



knee

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The information contained within this booklet can be provided in different languages, or on audiotape and in large print. We can also arrange an interpreter. Please contact us giving us notice of any special requirements.

1 Introduction

This booklet explains some of what you can expect before, during and following your knee joint replacement surgery.

It suggests how you can best prepare for your surgery and recommends some things to think about after your surgery.

By following the Enhanced Recovery Programme you may be ready to go home from day one onwards if you meet discharge criteria.

The information is intended as guidance and we strongly encourage you to read it before you attend your pre-assessment appointment. Some treatment andadvice will vary according to individual needs.

Please ask your GP or any member of the hospital staff if there is anything you are unsure about.

2 Enhanced Recovery Programme and joint replacement surgery

What is the Enhanced Recovery Programme?

The term 'enhanced recovery' is used to describe an approach to performing joint replacement surgery and promoting recovery. The evidence shows that taking a planned and structured approach delivers better outcomes and a better experience for patients requiring surgery.

Aims

- To ensure that you know what to expect and are ready for your surgery
- To minimise the stress of surgery on the body
- To ensure a safe and quick recovery after your surgery.

Why do people need joint replacement surgery?

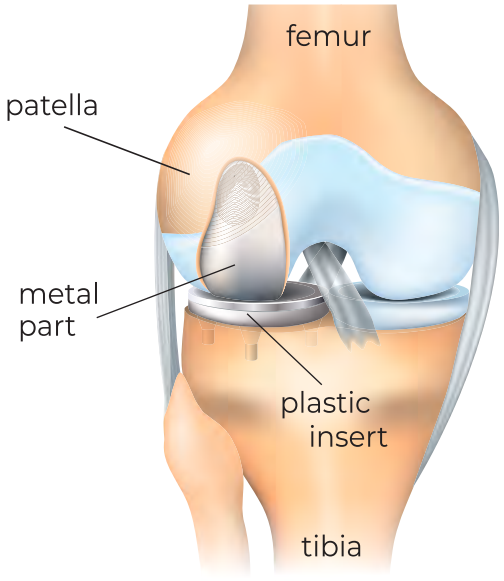
Your joint may need to be replaced for a number of reasons, the most common being arthritis.

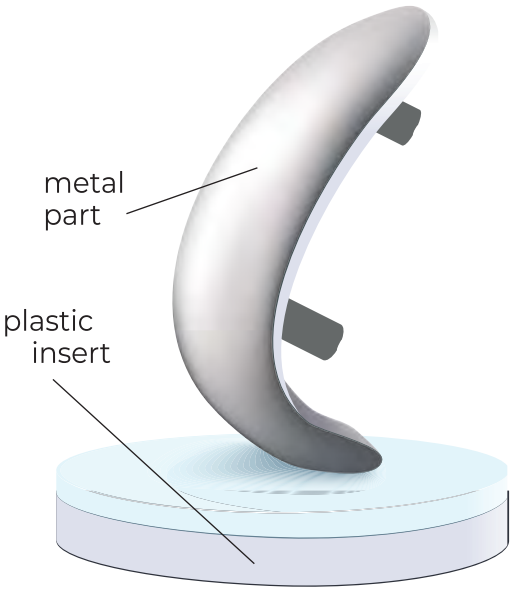
The problems this can cause include:

- Ongoing issues with severe pain
- Difficulty with walking and negotiating stairs
- Not able to sleep well
- Stiffness.

What happens during joint replacement surgery?

Your surgeon will remove the worn and damaged parts of the joint and replace it with an artificial joint.





Knee joint

The knee is the largest joint in the body and is a hinge joint.

The worn parts of the joint are removed and replaced with three components. A metal part on the ends of the upper bone (**femur**) and lower bone (**tibia**) and a plastic insert which allows the joint to bend. Sometimes an additional plastic button is used to resurface the underside of the kneecap (**patella**), if it is particularly worn.

Partial knee replacement

In some specific cases, a partial knee replacement can be performed. Partial knee replacement resurfaces only the inner or outer half of the knee (the inner half, nearest your other leg is most common).

This operation can be done through a slightly smaller cut than a total knee operation. A partial replacement usually means you can move your knee more easily than after a total replacement.

Usually has a quicker recovery, but long term results are not as good compared with a total knee replacement.

Enhanced Recovery Programme and joint replacement surgery

Whether you are suitable for this type of surgery is dependent on your age, medical condition and the x-ray of your knee.

Potential risks and complications

Joint replacement surgery is a major operation. While most replacements are carried out without any problems, all operations carry some risks and the potential for complications. These include infection, dislocation, blood clots, swollen limbs, delayed wound healing and difference in leg length.

Further information on the potential risks and complications are fully detailed in section 9. It is really is important that you consider everything before you agree to having your surgery.

If there is anything you are worried about or do not understand, please speak to your surgeon or any other member of the hospital team. They will be very happy to discuss any concerns or questions you may have.

3 Planning for your surgery

Joint replacement surgery requires careful preparation to ensure the best results.

A big part of the success of the Enhanced Recovery Programme is down to you taking responsibility before and after your surgery.

Your hospital stay is just a small part of the overall programme.

GENERAL HEALTH

Weight loss

The surgical and anaesthetic risks are considerably higher in obese patients. Patients with a body mass index (BMI) of above thirty, should consult the GP and attempt to lose weight in order to give themselves the best chance of avoiding complications. Patients with a BMI of forty and above will often not be considered for surgery until their weight has come down to a safer level.

Smoking

If you are a smoker your general health is at risk. Smoking also causes some additional risks and complications for your surgery such as:

- Increased risk of developing a chest infection or pneumonia
- Increased time for your wound to heal
- Increased risk of getting an infection
- Increased risk of developing a blood clot after your operation, known as a deep venous thrombosis (DVT) or pulmonary embolism (PE).

As a minimum stop smoking for at least four weeks prior to and following your replacement surgery. If you would like support to stop smoking contact NHS Grampian Smoking Advice Service 'Quit your way' on **08085 203020**. Alternatively contact your GP, visit your local community pharmacist or visit:

www.nhsinform.scot/healthy-living/stopping-smoking

Eat well

A well-nourished body is really important to support the healing process. Eating well will reduce your chance of inflammation, infection and help you to recover. Eat regular meals and drink plenty of water.

Try and eat a wide variety of foods, and include:

- Plenty of fruit and vegetables
- Plenty of wholegrain bread, wholegrain cereals, pasta, potatoes and rice
- Beans, lentils and other pulses
- Fish, especially oily fish – mackerel, salmon, sardines, pilchards etc
- Some milk and dairy foods
- Meat, eggs, chicken and nuts.

Some foods are of lower nutritional value, for example sweet and sugary drinks, cakes, biscuits, sweets, chocolate, crisps and takeaway meals.

Being overweight increases the stress on your joints, it is therefore even more important to eat a good nourishing diet and do any recommended exercises.

If you need help with your diet please speak to your GP or practice nurse who will be able to provide advice in the first instance.

Walking

Try and keep as mobile as possible. Walking regularly as pain allows.

Exercise

If you feel able it would be beneficial to start any of the exercises in this booklet prior to surgery as pain allows.

Get organised

Most people will be in hospital for only a short time and will be able to return direct to their own home.

After your surgery you will need to adapt the way you carry out some every-day tasks. To start with you may need some help from others.

There are a few simple things you can do which will make your life a bit easier when you get home from hospital.

Pets

If you have a pet(s) make sure you have arrangements in place. It is also important to remember that after your surgery it is not easy to bend down.

Getting back to work

If you work, you should have an initial discussion with your employer and GP before your surgery and consider anything that will help your return to work. It may be necessary to go back on a part-time basis initially or have a phased return.

Driving

Following your total knee replacement surgery you will be unable to return to driving for at least the first six weeks after your surgery. For some people this will mean making alternative arrangements for getting around.

If you think you might struggle with anything please let staff know before your surgery to make sure suitable arrangements are in place.

Have your home ready for returning home after your operation

Throughout your home and particularly in your kitchen, put things that you use regularly at a height where you don't have to bend or stretch too much to reach. Do not stand on chairs to reach things!

Remove any loose rugs or anything else that you might trip over or slip on. Keep extension cords or cables well away from where you will be walking.

When you go home you will need to use walking aids. Remove anything which will get in your way of moving easily from room-to-room.

Check that you have suitable clothing and foot wear that is comfortable and safe. If you are not sure ask your occupational therapist.

Have good lighting on and make sure it is easy for you to switch a light on at night time.

Some patients have said they found having a small backpack to carry lightweight items around the house (such as up and downstairs) was helpful.

Think about putting a chair in the bathroom.

Make sure you have a stock of food in the house and other things that you will need on a daily basis. Have food that is quick and easy to prepare and that you will want to eat.

Remember, you will be tired and less mobile when you first get home.

Ensure any necessary arrangements are in place for when you are in hospital and for returning home.

4 Pre-operative information

BEFORE YOUR OPERATION

Consenting for your surgery

A member of the orthopaedic team will go through the process of consenting for your surgery with you.

This will happen at either your outpatient appointment, pre-operative assessment clinic (sometimes referred to as pre-admission clinic) or on admission to the hospital ward.

You should be informed about all aspects of your replacement surgery including any potential risks and complications (section 9). You will then be required to sign a consent form.

Pre-operative assessment clinic

The purpose of the pre-operative assessment appointment is to ensure your fitness for surgery and anaesthetic. At the clinic you will be seen by a nurse who will take your medical history (Including any current ongoing medical conditions) and medical assessment. The assessment includes:

- Routine measurements and tests (e.g. your height, weight, blood pressure, pulse etc.) Checking what medications you are currently taking and whether you need to stop taking anything prior to your admission to hospital
- Checking to see if you have any existing medications e.g. diabetes, hypertension, asthma, Chronic obstructive pulmonary disease (COPD), please ensure that you are managing your condition. Your surgery may be delayed if your medical condition(s) are poorly controlled
- Taking a full set of swabs. This is to ensure that you are not a carrier of, or have, Methicillin-resistant Staphylococcus aureus (MRSA). You will not come in for your surgery if there is any risk of MRSA being introduced to the ward.

When you attend the clinic let us know if you have any:

- Dates when you are not likely to be available for your surgery (planned holidays, work commitments etc.)
- Changes to your health or social circumstances
- Changes to your medications from when your GP referred you to the hospital
- Changes in your skin such as cuts, ulcers, abscesses, insect bites or rashes
- Signs of infection - including dental problems.

Infections

All infections must be cleared up before your surgery can take place.This includes tooth abscess, in-growing toe nail, or urine infections.

If you have a dental infection, please inform your dentist that you are waiting for joint replacement surgery.

Even minor cuts or broken areas of skin can cause bacteria to circulate through your body and cause infection. When you attend the hospital pre-assessment clinic, please inform staff if you have any symptoms of infection.

Planning for going home after surgery

It will be explained to you that our aim is to support people to be ready for discharge from hospital **from the day after surgery onwards.** Being aware of this will help you plan your transport and other arrangements for going home.

You need to make your own transport arrangements to and from hospital. An ambulance will only be arranged if there are special circumstances in which an ambulance transport is required.

If you have any concerns about this speak to a member of staff at the pre-operative assessment clinic.

Please also refer to sections 3 and 7.

At the clinic you will also meet your surgeon. They will provide you with a bit more detail and answer any questions that you might have.

Orthopaedic Joint School

At the pre-operative assessment clinic you will have the opportunity to attend a joint school education session presented by the ward Physiotherapist and Occupational Therapist (OT). This takes place at 12.30 daily in the waiting area. This is a mandatory appointment and failure to attend could result in your surgery being cancelled.

We strongly encourage you to have read all of this booklet before you attend the joint school and write down any questions you might have. You can use the space at the back of this book to make notes.

Your physiotherapist will discuss your pre-operative exercise programme. It is important to be as fit as possible before undergoing your surgery as it will help your recovery.

Your occupational therapist will discuss preparing for your return home following surgery and provide advice regarding return to daily activities.

You need to keep on doing your exercises up until the day before your surgery. The Daily Exercise Programme for knee replacement is set out in Section 11.

Hospital appointment letter

A few weeks before your operation, you will receive a letter from the hospital confirming the date and time of your admission. Please keep your letter in a safe place but also make a note of the arrangements in your diary and/or in this booklet.

If there is a problem with the date, or anything comes up making it not possible for you to come in for your surgery, please let the hospital know as soon as possible. The number to contact will be provided in your letter or contact the hospital switchboard (section 13).

Medications

You should continue to take any regular medication unless advised otherwise by your GP, surgeon or nursing staff.

Your anaesthetist and anaesthetic options

Your anaesthetist is responsible for your well-being before, during and immediately after your operation.

They will review any information needed to assess your general health. This will include your medical history, test results, allergies and current medications.

There are two main types of anaesthetic available to you; spinal anaesthetic or general anaesthetic. Your anaesthetist will help you choose which option is most suitable for you.

Spinal anaesthetic

This involves an injection of local anaesthetic into your lower back. The injection makes your legs completely numb and they will feel heavy. Your anaesthetist will check the anaesthetic is working beforemthe operation starts. You will not be able to see the operation. You can choose to have some light sedation to help the time pass more quickly. Alternatively you can ask for a deeper sedation during your procedure so you cannot hear anything during the operation.

Most people have a spinal anaesthetic because compared to a general anaesthetic, they are associated with losing less blood, less risk of being sick afterwards, significantly improved pain control and a lower risk of chest infections and clots in your legs. This is the preferred option for rapid recovery after surgery.

General anaesthetic

General anaesthetic is where you will be unconscious for your operation. You will get an anaesthetic by injection, and when you wake from your operation, pain will often need to be controlled by strong painkillers such as morphine.

A general anaesthetic may have some unpleasant side effects such as nausea and vomiting, drowsiness, disorientation and sore throat.

COUNT-DOWN TO YOUR SURGERY

Three weeks before your surgery

No shaving or waxing legs, under arms or bikini lines for three weeks prior to your surgery. Continue with your exercise programme.

One week before your surgery

Think about what you will need to pack for your hospital stay. We have provided you with a check-list which can be found in section 12 of this booklet. Check that you are organised for coming into hospital and for returning home after your surgery. Continue with your exercise programme.

If you have had diarrhoea, nausea and vomiting forty eight hours before you are due to come in for your surgery, or if you have a cold or flu-like symptoms please contact the ward who will be able to provide you with advice.

One day before your surgery

In order to help medical staff to observe your skin and finger nail bed colour during your operation, please don't wear make-up, nail varnish, acrylic or gel nails on the day of your surgery. It is a good idea to remove anything the day before your surgery. Please also remove all piercings. Continue with your exercise programme.

Day of your surgery

Please have a bath/shower/wash on the morning of your surgery. **Do not** use any talcum powders, body lotions, perfumes or makeup after you have washed.

Eating and drinking before your surgery

On the run up to your surgery it is important that you continue to eat and drink as normal. However, you will need to stop for a period of time before your surgery. Please follow the instructions on the next page.

If your surgery is in the **morning**:

Have a meal in the evening before your surgery. No fluids should be taken after 06.30am (see box on the next page).

If your surgery is in the **afternoon**:

Have a light breakfast before 06.30am. No fluids should be taken after 11.30am (see box below). The nursing staff or your anaesthetist will confirm fasting times on your admission to hospital.

Time of operation	Allowed food until:	Allowed clear fluids until:
If your operation is in the morning	02.30am	06.30
If your operation is in the afternoon	06.30 on the day of surgery (light breakfast)	11.30
		Clear fluids include: Water, black tea/coffee, weak diluting juice and flavoured water (non fizzy)

5 Coming into hospital for your surgery

You will be asked to come to hospital on the day of your operation. In certain circumstances you may be asked to come to hospital the day before surgery. Please follow any instructions in your appointment letter.

On the morning of your surgery you will be given an identity bracelet to wear and nursing staff will welcome you to the ward and answer any questions.

A doctor will check your consent form and mark the leg to be operated on. Your anaesthetist (if you have not already met them in the preoperative assessment clinic) will go over your anaesthetic options.

What to expect immediately before your surgery

You will be given pain medication and you will be asked to empty your bladder before you go to theatre.

Once in the anaesthetic room monitoring devices will be attached to your chest, arm and finger. This allows the anaesthetic team to monitor your heart, blood pressure, pulse and oxygen level during surgery.

You will have a cannula (small straw like tube) inserted into the back of one of your hands. This allows the anaesthetist to give you fluids if required.

If you are having a spinal anaesthetic, your anaesthetist will ask you to either sit on the trolley or lie on your side. They will check that the anaesthetic is working fully before giving you a sedative through your cannula. The sedative can be used to keep you comfortable and relaxed during your operation.

If you have brought a personal music player, you may listen to music during the operation if you wish.

What to expect after your surgery

Immediately after your surgery

You will be taken from theatre to the nearby recovery unit where you will stay for a short period of time being looked after by a team of specialist nurses. You may be given extra oxygen and fluids at this point. The anaesthetist will also be on hand to make sure you have a safe recovery.

In order to reduce risks of forming clots, you may have pumps on your legs to help circulation.

When you return to the ward nursing staff will monitor you closely.Your wound dressing, blood pressure, temperature and pain levels (see page 21) will all be checked regularly.

A small number of patients find it difficult to pass urine following their surgery. When this happen a catheter may be inserted for a short period of time to relieve this.

It is important that you eat and drink soon after your surgery. Your body needs lots of nourishment to help your wound heal, reduce the risks of infection and to help your general recovery.

When you are able you will be encouraged to mobilise with the physiotherapy staff or nursing staff with a walking frame. This can be from two hours following return to the ward. You may find you have little memory of the operation taking place.

Controlling your pain after your surgery

Prevention or early treatment of pain is far more effective than trying to treat established or severe pain. If you are in pain let any member of staff know. No matter how busy you think staff might be, helping you to manage your pain will always be a priority

You will be given a number of different types of painkillers to keep your discomfort to a minimum. Some medication will be given to you regularly – please take all your medication even if you do not feel any pain.

It is really important that your pain is well-controlled so that you can start mobilising and undertake your exercises.

The use of ice packs will also help manage pain. Please request these from the nursing staff as required.

How is your pain assessed?

After your operation your pain will be assessed regularly. Your pain will be measured by asking you to describe where the pain fits on a scale of 0-4.

Pain score

Prevention, or early treatment of pain is far more effective than trying to treat established or severe pain.

NO PAIN	**0**	MILD PAIN	**1**	MODERATE PAIN	**2**
SEVERE PAIN	**3**	EXCRUCIATING PAIN			**4**

The days following your surgery

The doctors and nurses will continue to monitor your progress. This includes being taken to the x-ray department to have an x-ray of your new joint. Your cannula will be taken out once your blood pressure and fluid intake are adequate.

Occupational therapist

Your Occupational therapist will provide guidance regarding your return to daily activities such as getting dressed. They will also check you are managing to get in and out of bed and on and off the toilet and chair.

For further information and advice for managing day to day activities after your surgery (see section 7.

Physiotherapist (Physio)

Your physiotherapist will start you on your post-surgery exercise regime. Each exercise is designed to help you improve your range of movement of and to strengthen your new joint.

The daily exercise programme for knee replacement surgery can be found in section 11.

You are advised to continue with all recommended exercises independently three to four times per day for at least three months post-surgery.

While you are in hospital the physiotherapist will also teach you to walk with elbow crutches or sticks. You may be shown exercises to help reduce the risks of getting a deep vein thrombosis (DVT) alongside some deep breathing exercises.

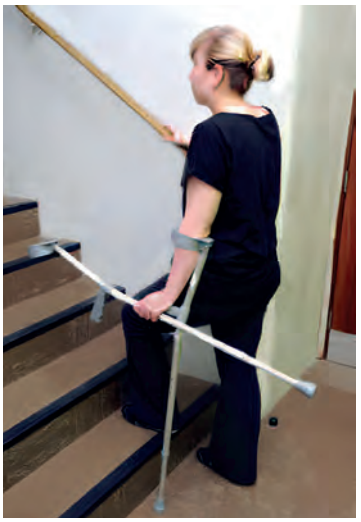
Managing steps and stairs

Before you go home the physiotherapists will check that you are able to safely negotiate steps and stairs depending on individual requirements. This is important even if you do not have steps or stairs at home in case you come across some when you are outdoors or in other buildings.

Going up stairs

Put your hand on the hand rail then step up with your un-operated leg. Then step up with your operated leg, and finally, move your stick up onto the next step.

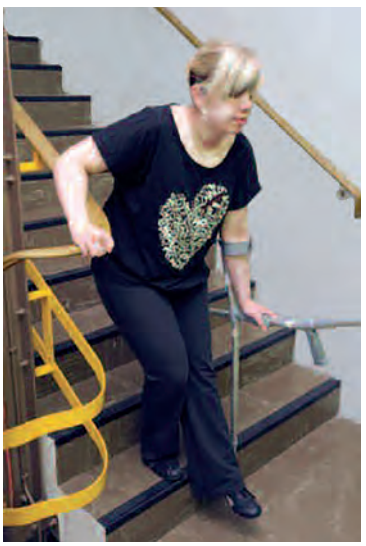
- hand on rail
- un-operated leg
- operated leg
- stick/crutch



Going down stairs

Put your hand on the hand rail, stick on the step below, then your operated leg, and finally bring your un-operated leg down.

- hand on rail
- stick/crutch (to check depth of the step and provide you with support)
- operated leg
- un-operated leg



6 Going home from hospital and follow up arrangements

Discharge plans should have been discussed fully with you by staff at the Pre-Operative Assessment Clinic. These will be confirmed with you by staff on the ward.

Occasionally, some people may require further rehabilitation and may need to go to a community hospital before going home. If necessary the nursing staff will discuss this with you on the ward.

You will be safe to go home when you are able to answer yes to the following discharge criteria questions:

- Have you a clean and dry wound?
- Are you independent and mobile with your walking aid?
- Can you manage your exercise programme?
- Are able to wash and dress?
- Are able to go to the toilet and get in and out of bed on your own?
- Are safe on stairs and steps?
- Are you organised at home including with any required equipment?
- Do your family/carers/friend or neighbours know you are going home and are they able to collect you?

Day of discharge

On the day you are due to be discharged, a nurse on the ward will give you a copy of the letter already sent to your GP and your prescription for any drugs (e.g. painkillers) and any post-operative instructions. Please ask for a sick note for your employer if required.

Follow up arrangements

Your discharge letter will be sent electronically to your GP so they are aware that your surgery has taken place.

When you leave hospital you will only be given a supply of painkillers to last for a few days. You will need to contact your GP surgery to get a follow on prescription. Make sure you do this before you run out of any supplies.

You will have dissolvable sutures or clips in your wound. If you have clips, you will be advised to make arrangements for your practice nurse or district nurse to remove these. They are usually removed 10-12 days after surgery.

Outpatient physiotherapy is not routinely required, but will be arranged by the hospital physiotherapist if necessary.

Outpatient appointments

Your outpatient follow up appointment with a member of your consultant surgical team is usually six to twelve weeks after your surgery. This will be arranged automatically for you.

This appointment is an opportunity to ask any new questions you may have. It's a good idea to write down your questions as they crop up so you don't forget them. There is space for you to do this at the back of this booklet and remember to take the booklet in with you to your appointment.

You will get a further follow-up appointment after six months or one year depending on your progress.

7 Managing at home

Now you are home what next?

The following pages aim to provide you with some general information and advice to help you manage at home and safeguard your new knee joint. Always follow any specific guidance given to you by your surgeon.

Whatever you are doing, remember to take your time and don't take risks.

Getting on and off furniture

A chair with arms will make it easier for you to sit down and get up. It may also be easier if the chair is not too low.

Your occupational therapist will advise if a raised toilet seat is necessary.

Washing/bathing/showering

You must keep your wound dry until it has healed. This will normally be ten to fourteen days following your surgery. You may shower with a waterproof dressing on until your wound has healed.

You should follow any advice given to you by the occupational therapist and discuss any concerns you have with them. Initially you are advised to shower, as you are able, or strip wash at a sink or basin. Always use a rubber mat or non-skid adhesive on the bottom of the bath or shower. You may find it helpful to have a chair in your bathroom to rest on.

Getting dressed

Be organised, collect all the clothes you are going to wear and put them close to you before you start to dress.

It is a good idea to sit on a chair or on the side of your bed to get dressed. Loose comfortable easy to fasten clothing is recommended. Wear comfortable flat shoes with plenty of room as your foot may swell up during the day. Shoes with backs are advised.

Shopping

You may want to think about having your shopping delivered when you first return home or ask family, friends or neighbours to help out.

Cooking

If you were able to prepare your own meals before your operation then you should be able to manage when you return home. You may find that you are more tired than normal, so think about ways you can make your life a little easier and less tiring.

Ideally, sit down to prepare your meals and remember to collect anything you need before you start to cook.

Place frequently used cooking supplies and utensils where they can be easily reached so that you don't have to bend, stretch or walk about too much.

Do not attempt to lift hot dishes out of the oven as this will require you to use both hands. If it is an option use the top of your cooker, grill or microwave for the first three months or so.

If you have a kitchen table position it, if possible, so it is easy to access from the work surface. As you will be mobilising with walking aids this will make it easier to transfer items. If you don't have a table and are alone at meal times the occupational therapist will discuss alternative ways to transport items.

Do not go down on your knees to clean floors or pick things up.

Housework

Avoid any heavy housework such as hoovering or moving furniture for twelve weeks after your operation. Do not attempt to strip bedding by yourself or carry anything heavy.

Laundry

You should be able to manage light items but do not attempt bulky items such as bath towels and bed linen.

Sleeping

You can sleep in any position but it is recommended that you sleep on your back. If you do sleep on your side put a pillow between your legs.

Preparing to get into the front of the car as a passenger

By the time you leave hospital, you should be able to travel as a passenger in the front of an ordinary saloon car. Please discuss with your occupational therapist if you have any concerns.

Before attempting to get into the front passenger seat ask someone to:

- Push the front seat all the way back and if possible recline it slightly
- If possible have the car positioned away from the kerb so you are getting in/out at road level.

Preparing to get into the front of the car as a passenger

By the time you leave hospital, you should be able to travel as a passenger in the front of an ordinary saloon car. Please discuss with your occupational therapist if you have any concerns.

Before attempting to get into the front passenger seat ask someone to:

- Push the front seat all the way back and if possible recline it slightly
- If possible have the car positioned away from the kerb so you are getting in/out at road level.

Getting into the front of the car

Back up to the car until you feel it touches the back of your legs. Reach back for a secure surface within the car, for example the dashboard or the car seat, and lower yourself down sliding your operated forwards as you sit	
Slide across towards the driver's seat to give yourself more room to get your legs into the car.	
Turn towards the dashboard, leaning back as you gently lift both legs together into the car.	

To get out of the car follow the same procedure in reverse.

8 This is your future

A total joint replacement is performed to give you a better quality of life, but you must take responsibility for looking after your new joint.

Most people are keen to return to normal as soon as possible, however, it is important that you **DO NOT** do too much too soon.

You should plan to gradually build up your strength.

It is normal to feel tired after surgery. Taking regular short rests on your bed will help you gain strength and allow you to complete your exercise programme. Remember to eat well.

Some ideas for goals are summarised (Section 12). These are just indicators. Everyone is different and will recover at different rates.

Your daily home exercise programme

It is really important that you continue to follow your exercise programme for at least three months (section 11). Once completed you should continue to exercise regularly.

This will help to maintain your fitness and strengthen the muscles that support your joints.

Becoming mobile again

It is essential that you use your walking aid(s) to support you to start getting more mobile. This will stop your new joint from becoming stiff and also make it stronger.

You should aim to increase how far you walk each day.

You may discard your walking aids when you feel comfortable and are no longer limping but not before six weeks.

Some people also prefer to continue to use two crutches/sticks for walking outdoors, over rough ground or longer distances.

When progressing to one walking stick/crutch, use on the opposite side to the operated leg.

It is normal to have good days and bad days. So even when you feel you don't need to use any aids we recommend you keep them for a month or so.

Stairs

You should continue to negotiate stairs as taught to you by the physiotherapist until you are no longer using an aid. After this you can start to climb stairs normally. Typically this might be after three months but everyone is different.

Gardening/heavy work

Avoid any heavy work for the first three months then check with your surgeon.

Public transport

You can make some journeys by train, coach and bus but we recommend that you check that you have lots of leg-room for comfort.

Remember, travel arrangements do not always go to plan, so think about how you would manage if there were delays. Always plan some contingencies. Long journeys of any sort are not recommended in the first six weeks.

Due to the risk of blood clots, long-haul flights (over four hours).

Should be avoided until after three months from your surgery. This should be discussed with your surgeon.

Returning to work

Most patients can return to work two to three months following surgery. However this will vary depending on the physical nature of your job. Please ask your surgeon if you need more information specific to your occupation.

If you are employed you will need to provide a sick note for your employer after seven days absence from work. If you need one, please ask when you are in hospital. If you forget, your GP should be able to provide one.

Driving

DO NOT drive for at least the first six weeks. After this you may return to driving but only if you can do an emergency stop and can reach the pedals without discomfort.

Before you get back to driving, have a run through (without the engine being on) and try out all the controls and a mock emergency stop.

It is always best to check with your insurance company before you start driving again.

Sports and activities

Static cycling, exercise bikes, golfing or swimming can be started after six weeks. Things to look out for include:

- If static cycling or exercise bike, take care getting on and off your bike
- If golfing, avoid a full swing until after three months
- If swimming, avoid breast-stroke
- You should be able to get back to normal cycling from around twelve weeks.

High impact activities such as running, tennis, squash etc. may put too much pressure on your new joint and are not recommended.

High risk activities such as skiing are also discouraged because of the risk of dislocation and fractures.

Sexual positions

Sexual intercourse may be resumed with care when you feel comfortable. Unless you have been advised otherwise you should do what feels right for you.

9 Potential risks and complications

As with all major surgery there is a risk of dying, however, it is highly unlikely with joint replacements. There are however, a number of potential risks and complications.

Infections

This is a potentially devastating complication in association with artificial joints. If infection occurs in a replacement joint it will require further surgery, sometimes multiple operations. It usually requires long stays in hospital (weeks or even months) with antibiotics through a drip and can occasionally require permanent removal of the joint or even amputation.

Many precautions are taken to try and minimise the incidence of infection. This includes thorough washing prior to surgery, antibiotics given during and after surgery as well as using a dedicated theatre for joint replacement surgery.

The incidence of infection is very low-less than 1% - but it is important to contact us directly if you have any concerns about your wound.

Common signs and symptoms of infection soon after your surgery are:

- Redness around the site of your wound with increased swelling
- Wound discharge or leakage
- Increase in pain in your hip or wound
- Increased body temperature (above 38°c).

Infection can also occur in later years and if so further surgery maybe required.

Blood clots/ pulmonary embolism

A blood clot in the veins of the leg or pelvis is called a thrombosis. It is relatively common to develop a thrombosis of the leg after replacement surgery. Notably blood clots can form in either leg not just the leg where you have had your surgery. Common signs include:

- Swelling in your thigh, calf or ankle that does not go down when you raise your leg up
- Pain, tenderness and heat in your calf muscle.

In a very small percentage of cases, the clot may leave the leg veins and travel to the lungs. This is called a ‘pulmonary embolism’. This is an emergency situation and if suspected you should call 999 immediately.

Signs which might indicate pulmonary embolism include:

- Sudden chest pain Shortness of breath
- Sweating Confusion
- Feeling faint or unwell.

Blood loss

Sometimes patients may lose a large amount of blood during their operation. If this happens you may require a blood transfusion. Like all medical interventions, a transfusion will only be used if really necessary.

Limb swelling

Swelling of the foot and ankle is very common following joint replacement surgery and may persist for many months. You may have little or no swelling when you get up in the morning but find that the swelling increases as the day passes.

Some warmth around the joint is often noted. This is due to increased blood flow through the tissues during healing.

Nerve damage

This is rare but can give rise to pain in the leg or weakness of some muscles. This can cause your foot to drop, making walking difficult.

This is often temporary and will improve over weeks or months but can also be permanent.

Numbness and scarring

Occasionally, slight numbness around the scar or part of the leg can happen, but is not anything to worry about.

Difference in leg length

Your surgeon will try to ensure your legs are the same length after your surgery. However, if the damage to your bone is too extensive this may not be possible. If this is the case, a small heel raise for your shoe can be provided.

Loosening of the new joint

Most joint replacements last between ten to twenty years. After fifteen years around one in four (25%) will appear loose on x-ray and 5-10% will become painful and require to be re-done.

10 Frequently asked questions with answers

How long will my new joint last?

Most replacements will last for ten to twenty years.

Will I recover and feel better?

Yes but remember it can take up to a year to fully recover. You may find that you have to adapt the way you do some things for a while.

I don’t feel like eating. Is this common?

After surgery you may lose your appetite. This is normal and small meals taken regularly will help.

I have got some swelling after my operation. Is this normal?

Yes, and it may last for several months. Healing tissue tends to be more swollen than normal tissue. You may find that you have little or no swelling when you get up in the morning but it increases as the day passes.

What can I do about any swelling?

When sitting/lying do your circulatory exercises (ankle pumps and knee push-downs, as per section 11). This will also help to reduce the risk of clots. When you are sitting your operated leg should be elevated on a stool. Your foot must be higher than your hip in order to help the swelling drain. You can use an ice-pack (packet of frozen peas) to help reduce the swelling.

Wrap them in a damp cloth and apply to the swollen area.

You should only leave this on for a maximum of twenty minutes and no more than every two hours as ice can burn your skin.

Do I need to follow my exercise programme?

Yes! This is a really important part of your recovery. If you have any concerns, ask your physiotherapist for advice.

What should I do if I think there is a problem with my wound?

If there is any wound discharge or leakage, or increasing redness beyond the suture line, contact your local specialist nurse advice line. If in any doubt, go to your local A&E Department and provide them with the details of when you had your surgery.

Why is my scar warm?

While your wound may have healed on the outside, recovery on the inside can take up to up six months. This can cause heat on the surface.

Why do I stiffen up?

Your new joint will stiffen if you have been sitting for a period of time.

This is due to the swelling of the tissues but should ease off once you get moving. Try not to sit for long periods (e.g. more than one hour at a time).

My bowel movements have become irregular. Is this normal?

This is quite common and should resolve itself in a few days. For instance painkillers can often cause constipation.

I have a numb patch. Is this common?

Yes. This is due to small superficial nerves being disrupted during surgery. This may or may not be permanent.

My joint clicks. Is this normal?

This is normal and should improve as healing continues.

How far should I walk?

Everyone is different and it will depend on how much you used to walkbefore your surgery. After you have walked, you should feel tired but not exhausted. If you are suffering from pain for a long time after you have walked then you have done too much. Our advice is to gradually build up the distance and remember wherever you go, you have to get back.

When should I stop using my crutches or sticks?

If you are still limping, continue to use an aid as it means your muscles are not strong enough yet. Most people use a walking aid for six weeks but again everyone is different.

Will I set the security alarms off at the airport?

This can happen. If it does explain to the security staff about your joint replacement. If you have metal walking sticks or crutches they will need to be x-rayed.

What is bone donation?

During your operation the surgeon has to remove some of your bone. In the past this bone was discarded. But now can be 'banked' to benefit other patients such as correcting spinal deformities in children and certain hip operations.

Do I have to donate my bone?

No - it is entirely voluntary.

If I want to donate my bone what do I need to do?

The Bone Bank Coordinator will ask you a series of health, travel and lifestyle questions and answer queries you may have. Once you have been talked through the process for giving consent you will be asked to provide written consent.

11 Daily exercises programme - knee replacement

It is important that you are as fit and strong as possible before having your knee replacement surgery as it will help your recovery.

Follow the post-surgery exercise programme. You should start after you have been to the pre-operative assessment clinic. You need to keep on doing your exercises up until the day before your surgery.

You should do each exercise ten times and then move onto the next one. Aim to complete the programme four times each day. It should take you around twenty minutes. Stop any exercise if it gets too painful and build up to the suggested numbers more gradually.

Part 1 – up until week 6

The following exercises will help you to fully recover from your knee replacement surgery. They will support you to get your range of movement and strength back.

You should do each exercise ten times and then move onto the next one. Aim to complete the programme four times each day. It should take you around twenty minutes. Stop any exercise if it gets too painful and build up to the suggested numbers more gradually.

You can also follow a video of all the exercises via 'No delays' link that will be sent to you by email prior to your surgery if you have this available.

1 – Deep breathing

Breath in through your nose, feel your rib cage expand. Hold for the count of 5, then exhale through your mouth.
Repeat 3 times every hour



2 - Ankle pumps

Move your ankle up and down briskly.
Repeat 10 times every hour



3 - Knee push-downs

Press the back of your knee down into the bed, tightening the muscle on the front of your thigh for the count of 5 then relax.
Repeat 10 times every hour



4 - Buttock squeezes

Squeeze your buttocks together for the count of 5 then relax.
Repeat 10 times every hour



5 - Knee bends

Lie on a couch or bed, with a glide sheet under your leg.
Slide your heel toward your bottom, try not to let your knee turn out.
Repeat 10 times, 4 times a day



6 - Inner range quads

Lie on the bed with a rolled up towel under the knee of your affected leg.
Press the back of your knee into the towel and straighten your leg.
Your heel should lift up off the bed.
Hold for the count of 5.
Make sure you keep the back of your knee in contact with the rolled towel at all times.
Repeat 10 times, 4 times a day



7 - Straight leg raise

Lie on a couch or bed, tighten your thigh muscle by pushing the back of your knee into the bed.
Pull your toes back towards you.
Keep your leg straight, lift up 6-8 inches and hold for the count of 5. Lower slowly.
Repeat 10 times, 4 times a day



8 - Knee extension

Sit on a chair with arm rests.
Sit with back against chair.
Straighten your leg out holding for the count of 5.
Slowly relax the knee placing the foot back on the floor.
Repeat 10 times, 4 times a day



9 – Assisted Knee Bends

Sit on a chair with arm rests.
Sit withback against chair.
Bend your affected knee as far as possible.
Hook your other leg over the top to gently help move the leg back further.
Hold for the count of 5.
Repeat 10 times, 4 times a day



10 -Hamstring stretches

Lying on a bed or sitting in a chair.
Place a rolled up towel underneath the heel of your affected leg.
Make sure the back of your knee is not supported.
Allow the knee to relax and stretch. Stay in this position for 10 minutes if able.
Repeat 10 times, 4 times a day



11 - Small knee bends

Stand holding onto a firm surface (e.g. kitchen worktop or back of a chair).
Stand with feet, hip distance apart.
Gently bend knees to approx. 30°.
Hold for the count of 5, then straighten up again.
Repeat 10 times, 4 times a day



12 - Knee bends on step

Lift your operated leg up onto a step, use support as required.
Transfer your weight forwards.
Bend the knee as far as you are able.
Hold for the count of 5, then relax.
Aim to increase the amount of bend on each repetition.
Repeat 10 times, four times a day



13 – Lower leg curls

Standing holding onto a firm surface.
Slowly bend your affected knee behind you as far as you are able.
Hold for the count of 5.
Slowly lower foot back to the floor.
Remember to stand straight and keep your knees together.
Repeat 10 times, four times a day



12 Useful Information

Check list of items to bring into hospital

Daywear You will be encouraged to dress after your operation. We recommend loose fitting clothing and underwear such as tracksuit bottoms, loose trousers, shorts, skirts, socks or stockings. Avoid tights.	☐
Nightwear You will need to bring in suitable nightwear (and a dressing gown if you wish) for your hospital stay which will usually be around 2 to 4 days). Ear-plugs and an eye mask may help you sleep.	☐
Footwear Your foot may swell after your operation so comfortable flat walking shoes or slippers.	☐
Toiletries Towels will be provided. Please bring in any toiletries that you feel you will need while you are in hospital.	☐
Medications Bring in with you all your usual medications in their original containers. This allows staff to check the dosage instructions and identify them as belonging to you.	☐
Aids Bring in any aids you use - sticks, crutches, wheelchair. Make sure you label them with your name	☐
Handwipes Bring a container of moist hand wipes to ensure you can keep your hands clean.	☐
Music, reading material etc We recommend you take some reading material, personal radio or music player (with headphones), I-pod, I-pad, Kindles etc. to keep you entertained. You can listen to your music during your operation if you wish.	☐
Mobile Phone You may bring your mobile phone into hospital. Please respect the instructions on your ward stating where they may be used without disturbing others.	☐
Bring this booklet with you!	☐

Valuables - You should avoid bringing jewellery, valuables or a large quantity of money into hospital. If you do we would strongly recommend that you give them to the nurse on the ward, who will give you a receipt and put them in a safe.

Some goals to think about after your surgery

Here are some goals that you might find useful to aim for. Remember you are a unique individual and will recover at your own pace.

Weeks one to three

1. Continue with your exercise programme four times daily
2. Continue to walk using your aid unless otherwise instructed
3. Aim to increase the distance you walk each day
4. If you have stairs, aim to be using them regularly. See section 5 for a reminder on how to negotiate stairs and steps
5. Gradually resume household activities, as your pain allows.

Weeks four to six

1. Continue with your home exercise programme four times daily
2. By this time you should be more independent
3. Continue to use your walking aid as required
4. Continue to increase the distance you are walking each day
5. Resume household activities but still no heavy lifting.

Weeks six to twelve

1. Continue with your home exercise programme four times daily
2. You should be walking without an aid indoors
3. You should be able to return to all normal household activities
4. Return to sports such as cycling, swimming
5. Consider going back to work.

13 Information about the Hospital

The orthopaedic unit

Elective orthopaedic surgery for NHS Grampian patients is undertaken at three hospitals –

Woodend Hospital in Aberdeen

Dr Gray's Hospital in Elgin

Stracathro Hospital in Angus.

NHS Grampian has a team of more than 25 consultant orthopaedic surgeons. They are supported by a team of anaesthetic consultants who have specialist skills in orthopaedic surgery.

Other important members of the team include nursing staff, nurse practitioners, assistant surgical practitioners, physiotherapists, occupational therapists, domestic staff, ward receptionists, junior doctors and the acute pain service.

Smoking

All NHS Grampian hospitals and grounds are smoke free.

Reducing the risk of infection

Staff take infection control and prevention very seriously but everyone has a part to play.



Patients

All patients who come into hospital are at greater risk of acquiring and spreading infection. The following will help to reduce some of the risks:

- Do not touch any wounds, dressings or drips that may have been applied as part of your care
- Bring a container of moist hand wipes to hospital to ensure you can clean your hands, for example, before you eat a meal
- Always wear something on your feet when you are walking around the ward/hospital
- Keep the top of your locker and bed table free from clutter. This makes it easier for it to be cleaned
- Always wash your hands after using the toilet
- If you visit the bathroom or toilet and are concerned that it does not look clean, report this immediately to the nurse in charge of the ward
- Your bed area should be cleaned regularly. If you or your visitors see something that has been missed report it to the nurse in charge.





Staff

Members of staff should wash their hands before and after examining patients using soap and water or the hand gel that will belocated at the foot of your bed. This is an integral aspect of our infection control policy and we would welcome you to ask staff if they have washed their hands.

Visitors

Visitors also have an important role to play. They should seek advice from the ward staff if they are planning to visit and are suffering from any infections, colds and viruses, vomiting or diarrhoea. This will greatly reduce the risk to vulnerable patients.

Visitors should follow any instructions before and after visiting on the ward. These can be found at the front entrance to the ward and outside each room.

Hospital visiting arrangements

Only close relatives or friends are advised to visit you on the day of your operation and only for a short period of time. We operate open visiting and welcome visitors as patient's request.

Please also be aware that you may have to be seen by the physiotherapist or occupational therapist during part of the visiting times. This is an essential part of your rehabilitation.

Help at meal times

If you require or prefer assistance at meal times from a friend, partner or family member, please discuss this with the nursing staff.

Getting to hospital

Woodend Hospital, Aberdeen, AB15 6XS.

Woodend Hospital is situated approximately 1.5 miles from Aberdeen Royal Infirmary, close to the Lang Stracht (A944). There are regular bus services to the hospital from the city centre and elsewhere. Patients are admitted to the Orthopaedic Unit and are cared for in DOSA and wards 9 and 10. Limited free car parking spaces are available.

Dr Gray's Hospital, Elgin, IV30 1SN.

Dr Gray's Hospital is situated in the west end of Elgin, at the end of the High Street. The main access to the hospital is located on the A96 Aberdeen to Inverness road.

Stracathro Hospital, Angus, DD9 7QA.

Stracathro Hospital is situated just off the A90 dual carriageway approximately half-way between Aberdeen and Dundee.

Orthopaedic patients are cared for in the Surgical Unit. Limited free car parking spaces are available.

Mobile phones

You may bring your phone into hospital but please respect other patients in the room by not disturbing them.

Further information

Further information about Woodend Hospital and Dr Gray's Hospital can be found by visiting: **www.nhsgrampian.org**

Further information about Stracathro Hospital can be found by visiting: **www.nhstayside.scot.nhs.uk/GoingToHospital/OurPremisesAZ/StracathroHospital/index.htm**



Feedback and Complaints

NHS Grampian endeavours to provide a high quality of care for all patients. If you are unhappy with any aspect of the service you receive please speak to the person in charge of the area, who will try to resolve the problem as quickly as possible.

We are also keen to hear about positive experiences as this also helps us to learn and improve.

We accept that sometimes things can go wrong and the aim of the NHS complaints procedure is to give you a quick and thorough response to your complaint by those who know most about your care. If for any reason you would prefer not to speak to a member of staff, you can either complete a Feedback Card which can be found in wards and clinics, or contact a member of the Feedback Service:

Post: NHS Grampian Feedback Service
Summerfield House
2 Eday Road
Aberdeen AB15 6RE

Telephone **0345 337 6338** Email: **nhsgrampian.feedback@nhs.scot**

Patient Opinion

Care Opinion is an independent, not-for-profit organisation, which runs the patient opinion website, where you can share your experience of NHS Grampian. **www.careopinion.org.uk**

Patient Advice and Support Service (PASS)

PASS is an independent service which is part of Scottish Citizens Advice Bureau (CAB). It aims to provide free confidential information, advice about services provided by NHS. **www.cas.org.uk/patientadvice**

Useful contact details

Woodend Hospital

Main Switchboard **0345 456 6000** Ward 9 **01224 556671** Ward 10 **01224 556678**

Dr Gray's Hospital

Main Switchboard **0345 456 6000** Ward 6 **01343 567553**

Stracathro Hospital

Main Switchboard **01356 647291** Surgical Ward **01356 665088**

If you wish to contact any other department, or are not sure who to speak to, then get in touch with the Hospital switchboard.

For medical emergencies always call 999.

Please ask your GP or any member of the healthcare team if there is anything you are unsure about. This booklet is to support any conversations you want to have with staff.

14 Goals for home and exercises on discharge

Goals for Discharge

You will be discharged home when you have met the criteria below as appropriate to your individual needs.

Please tick as goals achieved.

GOAL	✓
Wound dry and clean	
Post-op x-ray	
Independent with transfers	
Independent with walking aids	
Safe on stairs	
Independent with daily activities	
Adequate joint mobility	
Independent with Home Exercise Program	

Six Week Exercise Diary for Knee Replacement Patients

Exercise Diary – Week 1 and Week 2



Deep breathing Wk 1 only

	Week One							Week Two						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



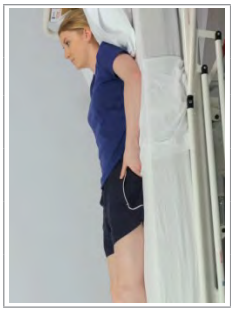
Ankle pumps Wk 1 only

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
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SESSION 2														
SESSION 3														
SESSION 4														



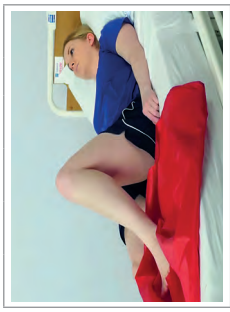
Knee push downs Wk 1 only

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



Buttock squeezes Wk 1 only

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



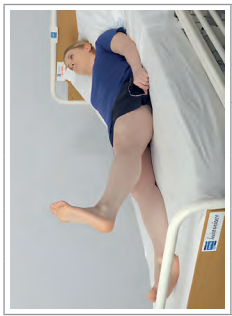
Knee bends

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



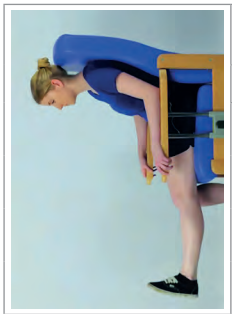
Inner range quads

	Week One							Week Two						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



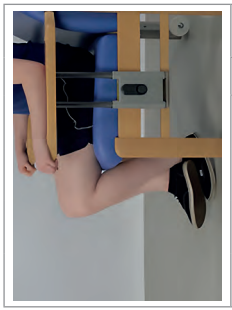
Straight leg raise

	Week One							Week Two						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



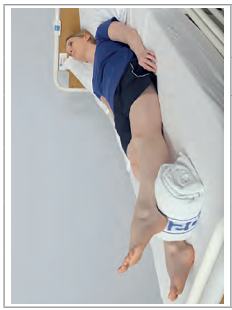
Knee extension

	Week One							Week Two						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



Assisted knee bends

	Week One							Week Two						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



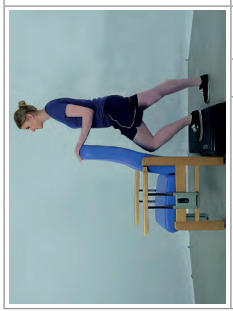
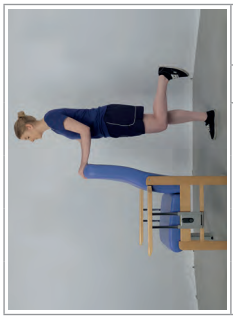
Hamstring stretches

	Week One							Week Two						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														

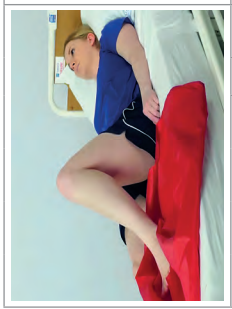
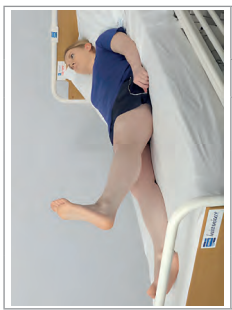


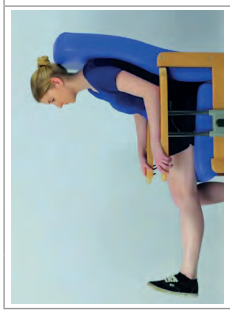
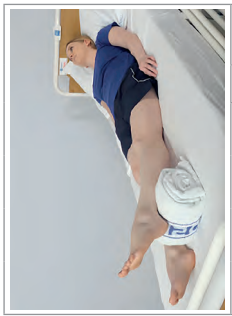
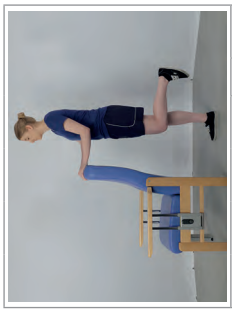
Small knee bends

	Week One							Week Two						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														

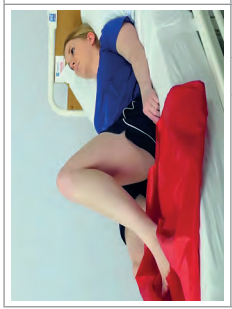
	Week One							Week Two						
	**Knee bends on step**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Lower leg curls**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														

Exercise Diary – Week 3 and Week 4

	Week Three							Week Four						
	**Knee bends**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Inner range quads**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Straight leg raise**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														

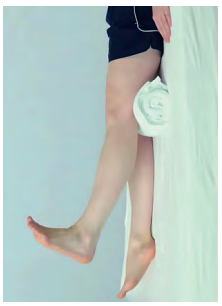
	Week Three							Week Four						
	**Knee extension**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Assisted knee bends**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Hamstring stretches**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Small knee bends**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Knee bends on step**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														
	**Lower leg curls**													
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														

Exercise Diary – Week 5 and Week 6



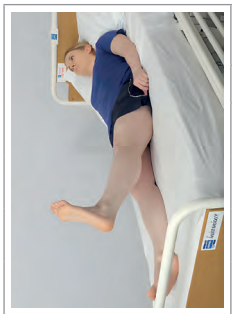
Knee bends

	Week Five							Week Six						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



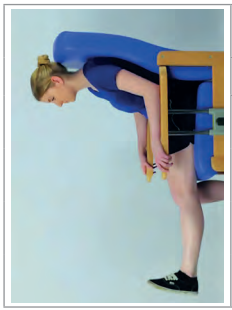
Inner range quads

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



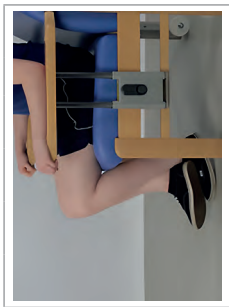
Straight leg raise

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



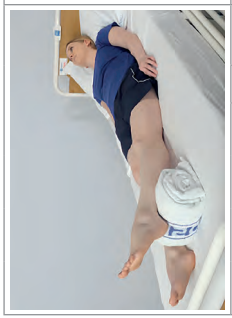
Knee extension

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



Assisted knee bends

Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



Hamstring stretches

	Week Five							Week Six						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



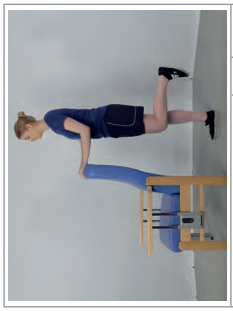
Small knee bends

	Week Five							Week Six						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



Knee bends on step

	Week Five							Week Six						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														



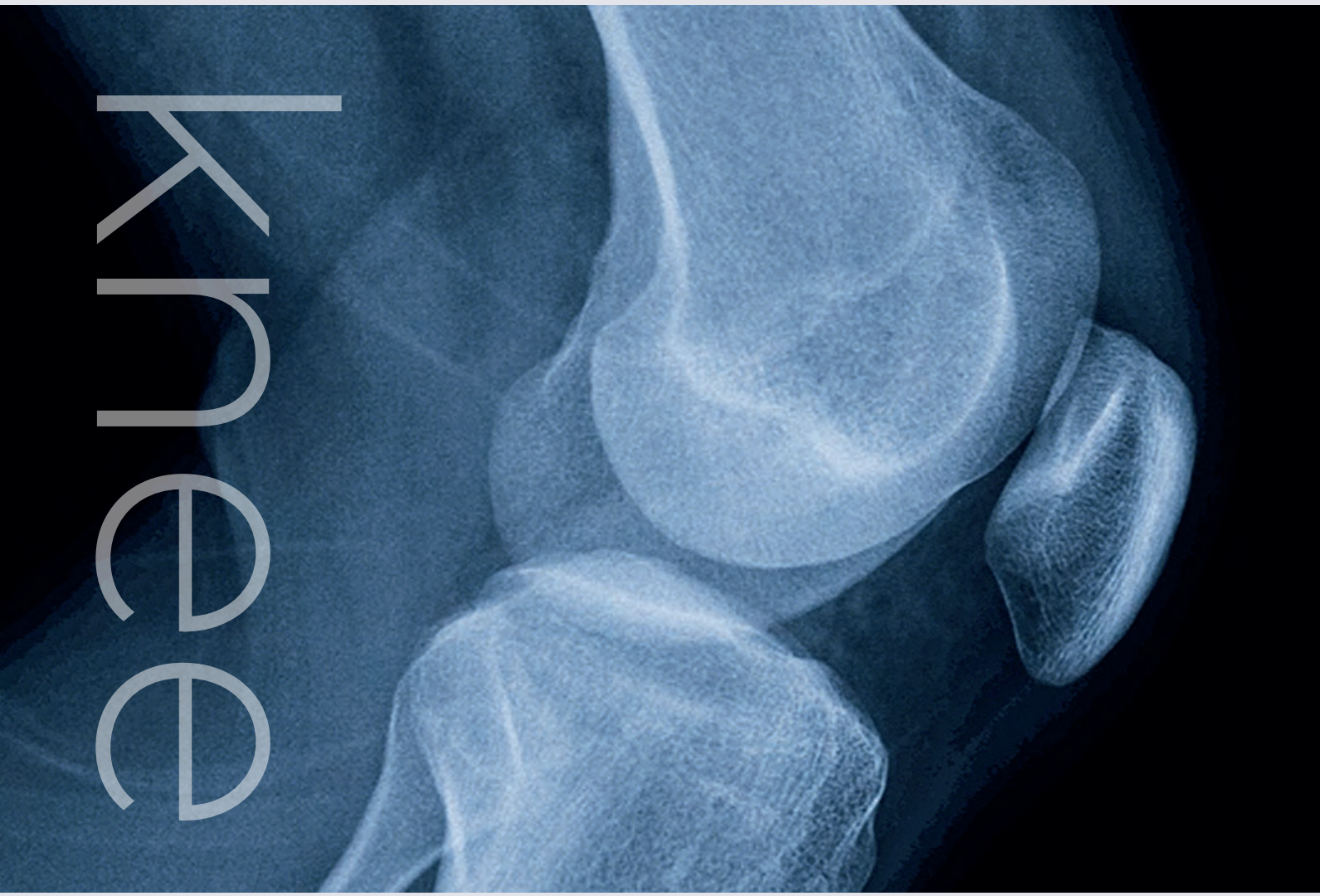
Lower leg curls

	Week Five							Week Six						
Day	1	2	3	4	5	6	7	1	2	3	4	5	6	7
SESSION 1														
SESSION 2														
SESSION 3														
SESSION 4														

16 Notes

Many patients have questions and comments they wish to make. You may find it useful to write these down in case you forget to ask.





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