



# Orthopaedic prehabilitation

– prepare for your joint surgery or treatment

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Version 1

## ➤ About this leaflet

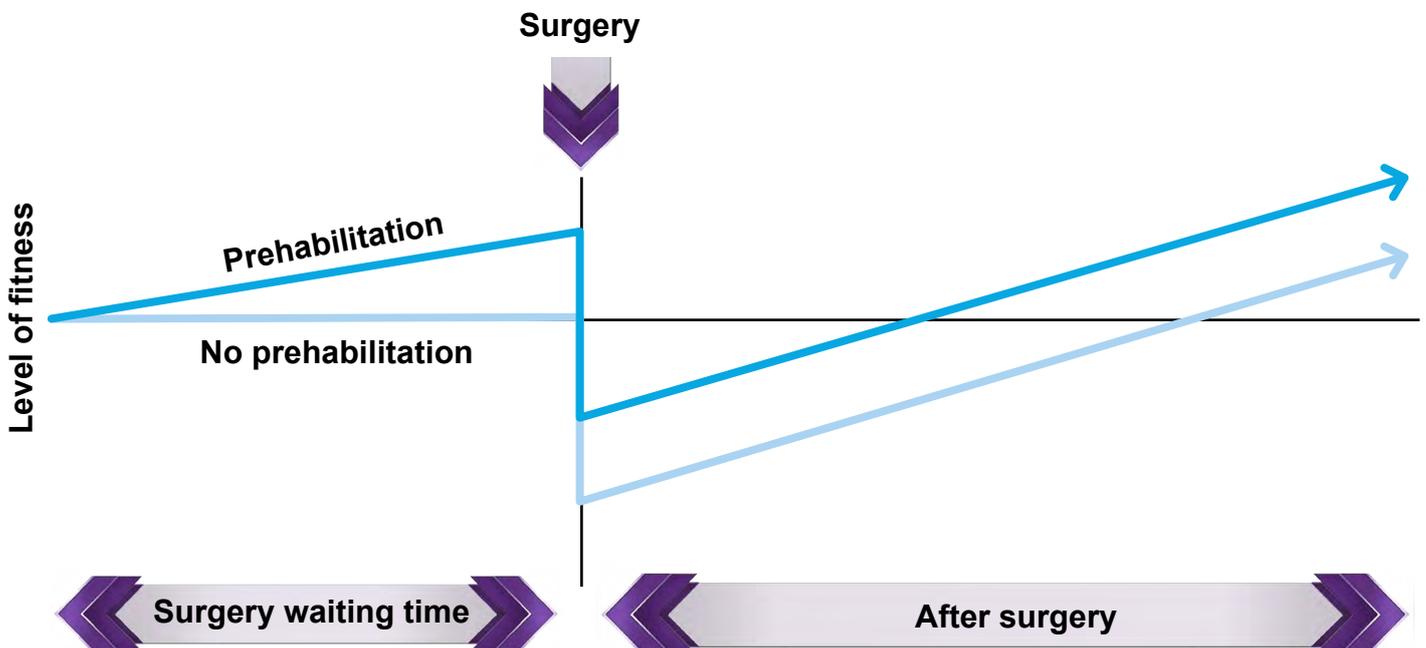
The purpose of this leaflet is to provide patients with information about safe levels of activity and how to improve their health and levels of fitness before treatment or surgery.

You may have been given a date for surgery or are waiting to hear if surgery is required. The information is applicable in both of these cases.

## ➤ What is prehabilitation and why is it important?

Prehabilitation is designed to optimise an individual's overall general health and level of fitness to enable them to withstand the effects of surgery and introduces steps you can take to help you prepare for your upcoming procedure. The actions you take now can help you recover quicker, reduce the risk of complications and reduce the time you spend in hospital. Many people are happy to know they can do something to improve their health in the lead up to surgery.

Small changes can make a big difference. The benefits of prehabilitation can be seen in as little as 7-10 days. Prehabilitation means your journey to recovery starts before your surgery has even begun through physical, nutritional and psychological support.

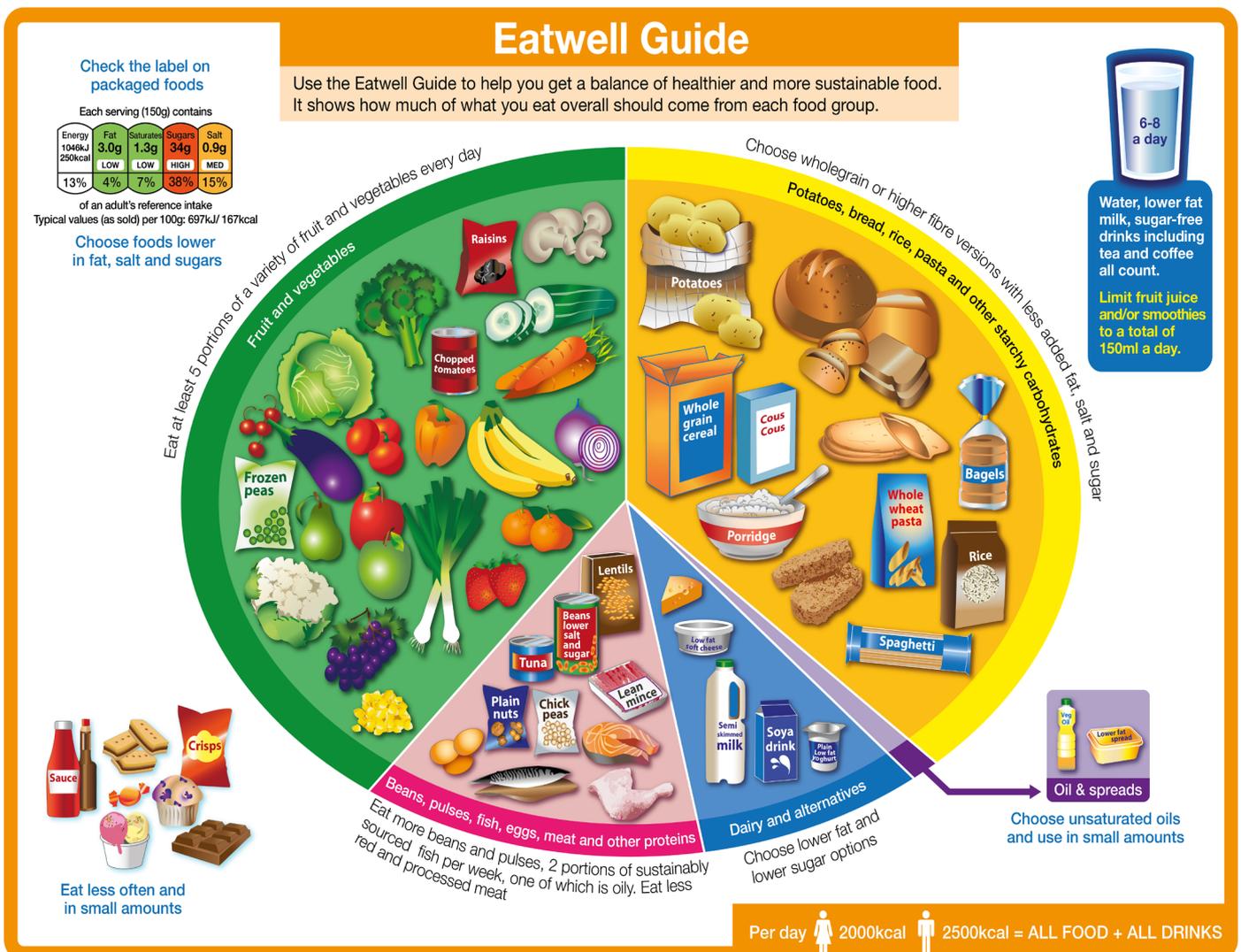


## ➤ Benefits of prehabilitation

- Reduce length of stay in hospital
- Reduce complications after surgery
- Improve physical function
- Improve overall fitness
- Improve emotional wellbeing
- Improve nutritional health
- Provide a sense of control and purpose
- Enhance quality of life
- Promote long-term positive health behavior

## ➤ Eat well

Eating a balanced diet is an important part of maintaining good health to help prepare for your surgery. The Eatwell Guide shows you how much of what you eat should come from each food group.



Source: Public Health England in association with the Welsh Government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

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### **Fruit and vegetables:**

Aim to eat at least 5 portions of a variety of fruit and vegetables each day.

### **Bread, rice, pasta or other starchy carbohydrates:**

Starchy food should make up just over a third of the food we eat. Choose higher fibre wholegrain varieties, such as wholewheat pasta and brown rice, or simply leave skins on potatoes.

### **Milk and dairy products:**

Good sources of protein and vitamins. They are an important source of calcium too. Try to choose low fat varieties to limit your intake of saturated fat.

### **Meat, fish, eggs and beans:**

These foods are good sources of protein, vitamins and minerals. Pulses, such as beans, peas and lentils are good alternatives to meat because they are lower in fat and higher in fibre and protein too. Choose lean, low fat, cuts of meat and mince, and eat less red and processed meat like bacon, ham and sausages. Aim for at least 2 portions of fish every week, 1 of which should be oily, such as salmon or mackerel.

### **Choose unsaturated oils and spreads, and eat in small amounts:**

Unsaturated fats are healthier fats and include vegetable, rapeseed, olive and sunflower oils. Remember all types of fat are high in energy, but should be eaten sparingly.

**Information source:** <https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/>

### **Obesity:**

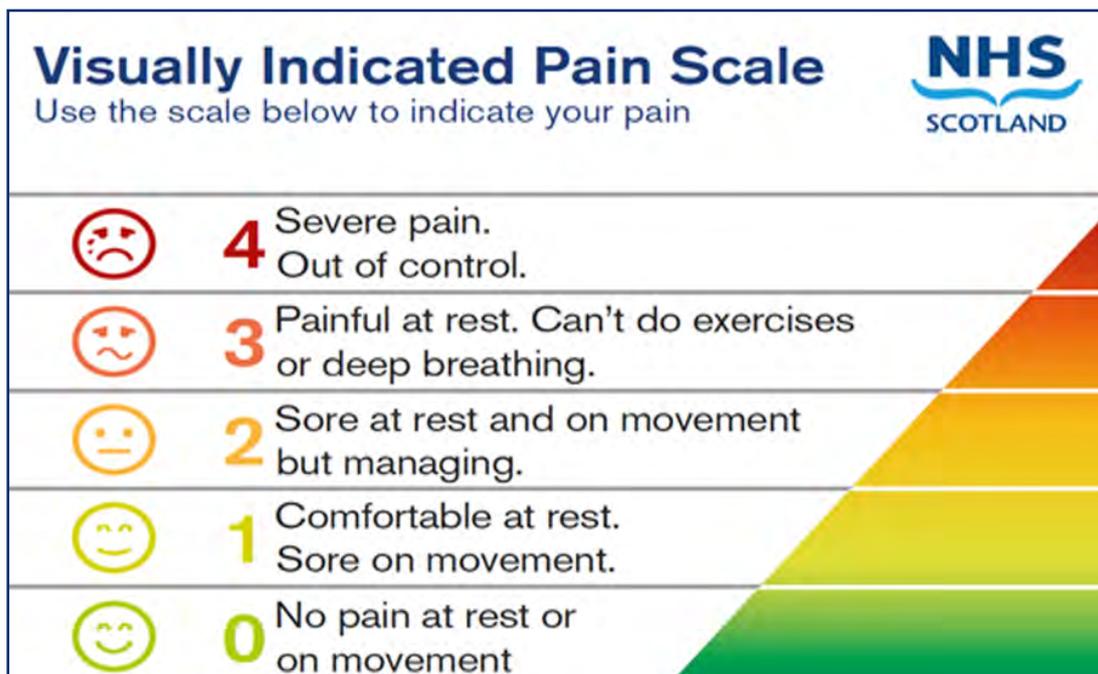
Obesity is a major risk factor for joint pain and osteoarthritis, and also significantly increases the risk of surgical complications, including residual pain, blood clots, infection, early implant failure, and medical complications, for example stroke or heart attack. Body Mass Index (BMI) is used to measure obesity and you will have your BMI calculated as part of your assessment.

In line with most hospitals in Scotland, patients with a high BMI (over 35), may be asked to lose weight before surgery in order to reduce the risk of complications and optimise the chance of a successful outcome. If you have a high BMI, your operation may therefore be delayed or cancelled if your BMI is over 40 in accordance with our hospital guideline.

## **Information about pain control post-op**

This information is available in the TKR booklet you have been provided with at your consultant appointment. This is a pain scale and associated information you will be asked to use after your operation to assist members of the team to care for you.





- You are **not** expected to be pain free.
- The aim is for your pain to be manageable, to allow you to complete your physiotherapy exercises.
- As well as having regular pain relief, there is additional pain medication available. **You will need to ask for this!**
- You are expected to have a pain score of 1-2.
- When you feel your pain rising from a 2 to a 3 you should request pain relief.
- If your pain relief is ineffective you must inform your nurse.

## Physical activity

Evidence shows that it is safe to stay active in the time leading up to surgery. You should try and do 30 minutes of activity every day. If you cannot manage this in one go, try breaking the activity into smaller manageable periods, for example, 10-15 minutes activity in the morning and then 10-15 minutes in the afternoon.

Physical activity doesn't have to mean a lot of hard work or expense, it could just be going out for a walk, gardening, or using your stairs at home. Avoid sitting for prolonged periods of time. You should aim to be working to level 0-2 on the VAS pain scale.

You may notice changes to your breathing when exercising. This can show if you are exercising to an appropriate level. As a general rule you should aim to be a little breathless, but still be able to hold a conversation with someone.

If you are too puffed out to be able to do this you must stop, catch your breath and then carry on. You should aim to be working to level 3-6 on the Rate of Perceived Exertion (RPE) scale.

# Physical activity for adults and older adults

Benefits health	Reduces your chance of	Type II Diabetes	-40%
Improves sleep		Cardiovascular disease	-35%
Maintains healthy weight		Falls, depression etc.	-30%
Manages stress		Joint and back pain	-25%
Improves quality of life		Cancers (colon and breast)	-20%

Some is good, more is better

Make a start today: it's never too late

Every minute counts

## Be active

at least **150** minutes moderate intensity per week  
Increased breathing able to talk

OR

at least **75** minutes vigorous intensity per week  
breathing fast difficulty talking

or a combination of both



to keep muscles, bones and joints strong

## Build strength

on at least **2** days a week



**Minimise sedentary time**  
 Break up periods of inactivity



Bowls Tai Chi

Dance

**Improve balance**  
 2 days a week

For older adults, to reduce the chance of frailty and falls

# Rated Perceived Exertion (RPE) Scale

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**0 At rest (no exertion at all)**

**0.5 Very easy (very, very light)**

**1 Easy (very light)**

**2 Not difficult (fairly light)**

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**3**

**4 A little hard**

**5**

**6 Hard**

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**7**

**8 Very hard**

**9**

**10 Extremely hard**

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## Knee exercises

It is important to be as fit as possible before undergoing a total knee replacement. This will make your recovery much faster. 9 exercises are shown below that you should start doing now and continue until your surgery. These exercises can be found in the TKR booklet you have been provided with at your consultant appointment. You should be able to do them in 15-20 minutes, and it is recommended that you do all of them 4 times a day. It is not harmful for you to do more. Consider this as a minimum amount of exercise prior to your surgery.

Scan the QR code to view our YouTube video.  
This will guide you through the exercises.



You will be asked to continue these exercises after your operation for at least 6 weeks. The exercises increase your flexibility and strength which will aid your recovery. If you find these exercises difficult, build up to the suggested number **gradually**.



### Exercise 1

#### Ankle pumps

Move ankle up and down as far as you can go  
Repeat 10-15 times.



### Exercise 2

#### Static quads (knee push-downs)

Press knee into bed, tightening muscle on front of the thigh.  
Do not hold your breath.  
Hold for 5 seconds.  
Repeat 10-15 times.



### Exercise 3

#### Inner range quads

Lie on a couch or bed with a roll under the operated leg.  
Lift foot, straightening the knee.  
Do not raise thigh off roll.  
Hold for 5 seconds.  
Repeat 10-15 times.



**Exercise 4**  
**Straight leg raise**

Lie on your back.  
Lift operated leg up 6 inches.  
Keep knee straight and toes pointed up.  
Then return to start position.  
Hold for 5 seconds.  
Repeat 10-15 times.



**Exercise 5**  
**Heel slides (heel slides up and down)**

Lie on your back with the board under your operated leg.  
Slide heel towards your bottom bending your knee as far as you can.  
Repeat 10-15 times.



**Exercise 6**  
**Armchair push-ups**

This exercise will help strengthen your arms for walking with a walking frame and then walking sticks.  
Sit in an armchair.  
Place hands on the armrest, straighten arms, raising your bottom up off chair seat.  
Keep your feet on the floor.  
Repeat 10-15 times.



**Exercise 7**  
**Extension stretch**

If you have difficulty straightening your knee, put a firm roll under your ankle and put your foot up on a stool or chair.  
Your knee should be unsupported.  
Press the knee back as much as you can, you will feel a stretch at the back of your knee.  
Repeat 10-15 times.



### Exercise 8

#### Knee extension - bend and straighten

Sitting on a chair or bed, bend your operated knee underneath you as far as you can.

Then straighten out.

Repeat 10-15 times.



### Exercise 9

#### Seated knee flexion

Sit in a chair.

Cross good (unoperated) leg over the operated.

Bend the operated leg as much as possible then give a gentle push with the other.

Hold for 10 seconds.

Repeat 10-15 times.

## > Daily diary

Please record the number of steps you have achieved for each day using a pedometer/ phone/ smart watch, record completion of your exercise programme and any other specific programme / plan you have been advised on.

Week 1	Day	M	T	W	T	F	S	S
	Daily step count							
	Exercise programme							

Week 2	Day	M	T	W	T	F	S	S
	Daily step count							
	Exercise programme							

Week 3	Day	M	T	W	T	F	S	S
	Daily step count							
	Exercise programme							

Week 4	Day	M	T	W	T	F	S	S
	Daily step count							
	Exercise programme							

Week 5	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							

Week 6	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							

Week 7	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							

Week 8	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							

Week 9	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							

Week 10	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							

Week 11	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							

Week 12	<b>Day</b>	<b>M</b>	<b>T</b>	<b>W</b>	<b>T</b>	<b>F</b>	<b>S</b>	<b>S</b>
	Daily step count							
	Exercise programme							



## Dental and oral hygiene

Good dental and oral hygiene reduces the risk of lung complications after surgery and improves your overall general health. You should aim to:

- Brush your teeth for 2 minutes, at least twice a day
- Use a fluoride mouthwash
- Use dental floss

For more information on recommendations for dental and oral hygiene including teeth cleaning guide, please refer to the NHS Inform website: [www.nhsinform.scot](http://www.nhsinform.scot)

## Your lifestyle and wellbeing

As well as eating well, it is also important to consider your lifestyle in relation to smoking and alcohol.

### Stopping smoking

Giving up smoking is one of the most important steps in getting healthy before your operation. If you continue to smoke right up to the time of your operation, this will increase your risk of complications and affect your progress.

To get help stopping smoking:

- Speak to your local pharmacist
- Call Smokeline on 0800 84 84 84

### Alcohol

You should also limit the amount of alcohol you drink. Do not exceed national recommendations, which are currently 14 units per week for both men and women.

					
<b>2.2 units</b>	<b>1.5 units</b>	<b>2.2 units</b>	<b>3.1 units</b>	<b>9.8 units</b>	<b>1 unit</b>
1 pint of beer/lager/ cider (4% ABV)	330ml bottle of beer/later/ cider (4.5% ABV)	175ml glass of wine (12.5% ABV)	250ml glass of wine (12.5% ABV)	750ml bottle of wine (13% ABV)	25ml measure of spirits (40% ABV)

For more information on healthy lifestyle choices, visit: [www.nhsinform.scot](http://www.nhsinform.scot)

## ➤ What does the programme involve?

The Physiotherapist will complete an initial assessment where you will be asked some questions to establish your current level of fitness. They will create a home exercise programme based on your initial assessment which will be made up of strengthening/ balance and aerobic exercise as appropriate. Your physiotherapist will be in contact with you to support your prehabilitation and to help progress as appropriate. They may ask you to attend follow up sessions these may be in person appointments or via telephone/ video consultation depending on your local health board (travel time). The physiotherapist will ask you to repeat physical measures on completion of your prehabilitation to assess your progress, and they will ask you to provide feedback regarding your experience via a questionnaire.

We hope you find this service helpful and offers you guidance throughout this period leading up to your surgery. We encourage you to take control of your own health and make positive changes to your wellbeing.

## ➤ Further information

Your healthcare team are here to support you. Any question that is important to you is important to us. Please contact the Orthopaedic Prehabilitation physiotherapist via email [gjnh.nesprehab@gjnh.scot.nhs.uk](mailto:gjnh.nesprehab@gjnh.scot.nhs.uk) if you need help or advice to discuss any of the information in this booklet, or contact 0141 951 5121.

### Useful websites for further information

- NHS inform advice for lower limb arthroplasty: <https://www.nhsinform.scot/illnesses-and-conditions/muscle-bone-and-joints/support-for-people-waiting-on-hip-or-knee-replacement-surgery>
- NHS inform weight loss: <https://www.nhsinform.scot/healthy-living/weight-loss/#:~:text=About%20this%20weight%20loss%20site,support%20that%20works%20for%20you.>
- NHS inform alcohol advice: [www.nhsinform.scot/healthy-living/alcohol](http://www.nhsinform.scot/healthy-living/alcohol)
- Quit Your Way stop-smoking service: <http://www.youtube.com/watch?v=tpxtu9tHvIo>

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