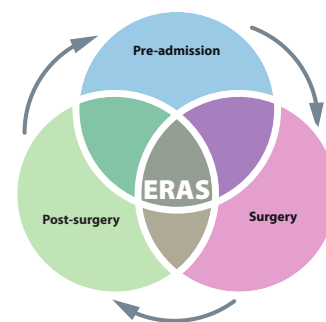


Abdominal Surgery: Enhanced Recovery After Surgery (ERAS)

A Complete Exercise Booklet as part of your enhanced recovery after surgery (ERAS)

Therapy Services and General Surgery

Images taken from: www.physiotherapyexercises.com



Introduction

Why is being more active important for ERAS?

Having major surgery is a big thing for you, both physically and mentally. We want to help you prepare for your surgery by being as physically fit as possible.

Improving your fitness will help to reduce the risk of complications during and after your operation, help you to recover quicker and therefore leave hospital sooner.

A physiotherapist will see you in pre-op clinic, or they will call you at home to discuss your current activity levels and advise how you can try to increase these to improve your fitness leading up to your admission to hospital.

How do I increase my activity levels?

For people who are already reasonably active during the day, we recommend completing 30 minutes of aerobic exercise (activity that makes you breathe faster and deeper, as well as raising your heart rate).

- Examples of this are: brisk walking, jogging, swimming, cycling, dancing, going to the gym, taking an exercise class (this is not an exhaustive list).

For those with a lower level of fitness, you should aim to reduce the amount of time you spend sitting each day. Ways of doing this could include: going shopping, cleaning, gardening. Your family and friends may be able to help you with this.

Also we suggest that you aim to complete 30 minutes of aerobic exercise daily (breathing faster and deeper and raising your heart rate). Doing this in smaller chunks, for example, 2x 15 minutes or 3x 10 minutes, may be easier for you.

As well as increasing your aerobic fitness prior to surgery, we advise that all patients aim to improve their muscle strength.

The prevention of infection is a major priority in all healthcare and everyone has a part to play.

- Please decontaminate your hands frequently for 20 seconds using soap and water or alcohol gel if available
- If you have symptoms of diarrhoea and/or vomiting, cough or other respiratory symptoms, a temperature or any loss of taste or smell please do not visit the hospital or any other care facility and seek advice from 111
- Keep the environment clean and tidy
- Let's work together to keep infections out of our hospitals and care homes.

How do I increase my muscle bulk or strength?

It is important to strengthen the large muscle groups in your arms and legs. The best way to do this is to exercise against resistance. If you regularly attend a gym, you will know how to do this or can ask a staff member to advise you. For those who prefer to exercise at home or alone, a simple and cheap way to improve muscle strength is to use your own body weight as resistance; exercises could include: sit to stand, step ups, mini squats, wall press ups. See page 4 for instructions on how these exercises should be performed. For upper limb exercises, you can use tins of food or small bottles filled with water, rice or sand, as homemade weights.

We usually advise doing a set of 10 repetitions of each exercise. As you get stronger, you can increase the number of sets of 10 you do. You should use the activity log provided in this booklet to write down how many repetitions or sets you are managing, so you can see how you are progressing over time.

Pre-operative muscle strengthening exercises

As discussed above, alongside the exercise you will be doing to improve your aerobic (heart and lungs) fitness levels, we ask you to complete strengthening exercises to increase muscle strength and therefore bulk. The stronger you are pre-operatively, the easier your recovery will be post-operatively.

Establishing your baseline

For each exercise, count the number of repetitions you can manage before you feel a moderate ache developing in the muscle group you are exercising. You will need to write this number into the activity log at the back of this booklet. Depending on how many repetitions you manage, it is then advisable to split this number into sets; we usually advise sets of 10, so if you manage 20 repetitions initially, you would aim to complete 2 sets of 10 repetitions next time you exercise.

Progression of exercises

As the days go on, you should be able to increase the number of repetitions, and therefore sets of exercises you can manage before you develop the ache that signals you to stop. This will be reflected in the numbers you will be writing down in the activity log.

For people who do not have any mobility issues normally, the following strengthening exercises should be suitable to complete daily.

Wall press ups

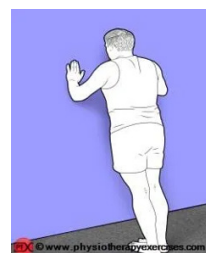
Aim: To strengthen shoulders and upper arm muscles

Instructions: Stand facing a wall, approximately 30cm (12 inches) away from it.

Place your hands onto the wall at shoulder height and shoulder width apart with fingertips pointing up towards the ceiling.

Keeping your body straight and your head in line with your body (do not tip it forwards or backwards), bend and straighten your arms so your face moves towards and away from the wall.

Continue with this exercise until you start to feel a moderate ache in your shoulders and/or upper arm muscles; when you feel this, stop exercising and write down the number of repetitions or sets you have managed in your activity log.



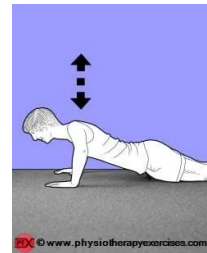
Press ups in kneeling

Aim: To strengthen shoulders, upper arms, and core abdominal muscles.

Instructions: Kneel on the floor. Hands should be shoulder width apart and directly underneath shoulders or very slightly in front, fingertips pointing forwards. Knees should be hip width apart but further back than hips.

Keeping your back, neck and head straight and in-line, bend and straighten your arms so your body and face move towards and away from the floor.

Continue with this exercise until you start to feel a mild or moderate ache in your shoulders and/or upper arm muscles and/or abdominal muscles. When you feel this, stop exercising and write down the number of repetitions or sets you have managed in your activity log.



Sit to stand with arms crossed

Aim: To strengthen your buttock and thigh muscles.

Instructions: Position a chair against the wall.

Sit on the chair with your arms crossed and feet shoulder width apart.

Bring your shoulders forwards and stand up.

Stick your bottom back and return to sitting.

Continue with this exercise until you start to feel a moderate ache in your buttocks and/or thigh muscles.

When you feel this, stop exercising and write down the number of repetitions or sets you have managed in your activity log.



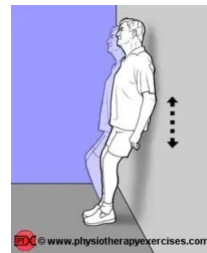
Wall squats

Aim: To strengthen the muscles that straighten your legs and improve your ability to stand or walk.

Instructions: Position yourself standing with your back against a wall, feet hip width apart and approximately 20-30cm (8-12 inches) away from the wall. Ensure your feet and kneecaps are pointing forward.

Bend your knees, allowing your body to slide down the wall, then straighten them again, returning to your starting position. Make sure your kneecaps continue to point forwards throughout the exercise; they should not roll in or out.

The more you bend your knees the harder the exercise will be.



Continue with this exercise until you start to feel a moderate ache in your thigh muscles. When you feel this, stop exercising and write down the number of repetitions or sets you have managed in your activity log.

When straightening your legs, do not allow your knees to lock back past straight.

An alternative way to complete this exercise:

Begin in the same starting position.

Bend your knees allowing your body to slide down the wall a small amount keeping your kneecaps forward. Hold this position for as long as you are able (time yourself using a timer). When you feel a moderate ache in your thigh muscles, straighten your knees and return to the starting position.

Make a note of how many seconds you managed to hold the position in your activity log. If this exceeds 1 minute, try bending your knees more to make the exercise more difficult. The more you bend your knees, the harder the exercise will be.

Once again, when straightening your legs, do not allow your knees to lock back past straight.

Step ups

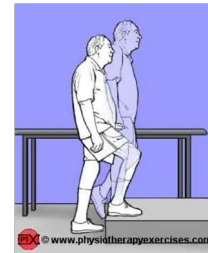
Aim: To strengthen lower limb muscles

Instructions: standing in front of a step or at the bottom of the stairs, holding onto a support if needed, step up onto the step and then back down again.

Repeat this exercise until you feel a light or moderate ache in your thigh muscles.

You should switch which leg you step up first with every 10 steps, so you are working each leg equally.

Write down the number of repetitions or sets you have managed in your activity log.



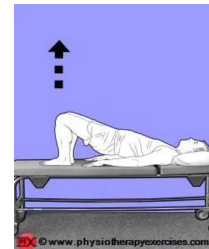
Bridging

Aim: To strengthen your hip muscles (and core abdominal muscles as stabilisers).

Instructions: Position yourself lying on your back with your knees bent. Breathe in through your nose and out through your mouth. As you breathe out, tighten the muscles in your bottom and lift your bottom off the bed until your pelvis is in line with your knees as in the picture. Return to the start position.

Repeat this exercise until you feel a moderate ache in your buttock muscles, then stop exercising.

Write down the number of repetitions or sets you are able to manage in your activity log.



Seated exercises

For people who have issues with mobility, for example, walking slower than others your age due to pain, shortness of breath, balance issues, or if you require a walking aid, the following may be more suitable for you to complete daily.

Arm raises

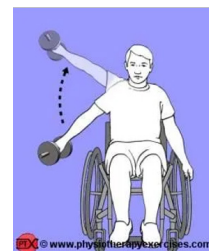
Aim: To strengthen the muscles at the side and top of your shoulder.

Instructions: Position yourself sitting in a chair. Start with your arm down beside your body, lift your arm up sideways until it reaches level with your ear, then return to the starting position. Ensure that you keep your elbow straight.

Exercise one arm at a time.

Progression: You can use small weights in your hands (small water bottle, tins of beans, if you do not have weights)

Write down how many repetitions or sets you manage in your activity log and make a note of any modifications.



Bicep curls

Aim: To strengthen your arm muscles.

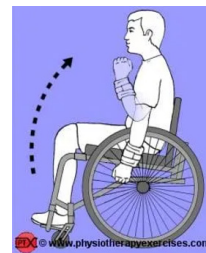
Instructions: Sit in a chair with your arms down beside your body.

Start with your elbows straight, bend your arms up as in the picture, then return your arms to a straight position again.

Ensure that you keep your elbows tucked in beside your body.

Record how many repetitions you manage in your activity log.

Progression: you can use small weights in your hands (small water bottle, tins of beans, if you do not have weights) Make a note of any weight you use on your activity log.



Hip marching

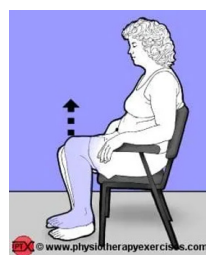
Aim: To strengthen your lower limb muscles

Instructions: Sit in a chair with feet hip width apart and feet flat on the floor.

Lift alternate legs up and down as if you were marching on the spot.

Count how many repetitions you do, or time how long you manage this for before you develop an ache in your leg muscles or become short of breath.

Stop when you feel either of the above. Record how many repetitions or how long you are able to manage on your activity log. Also record what it was that made you stop, for example, muscles aching.



Knee extension

Aim: To strengthen your thigh muscles (quadriceps)

Instructions: Sitting on a chair, start with your knees bent

Lift one leg up until your knee is straight, then lower it back down to the starting position. Concentrate on a slow, smooth movement, not fast or jerky.

Repeat with the other leg.

Stop exercising when you begin to feel an aching sensation in your thigh muscles. Record how many repetitions you manage with each leg in your activity log.

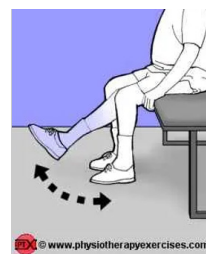
Progression:

Once your leg is straight, hold it in that position for 3 seconds before lowering it down again.

The length of time you hold your leg straight for can be increased further the more difficult you wish to make the exercise. Make a note of how long you hold the exercise for on your activity log.

Tip:

Make sure you can complete 10 repetitions of this exercise before you begin to add in a hold.



Standing exercises

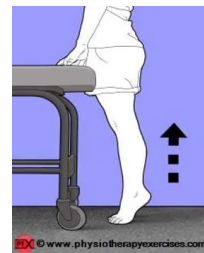
If you feel able, you can add in the following exercises whilst standing, holding onto a fixed support, for example a kitchen work surface.

Calf raises

Aim: To strengthen lower limb muscles

Instructions: Stand holding onto a fixed support, push up onto your toes so your heels leave the floor as in the picture. Then lower back down onto flat feet.

Repeat the above until you develop an aching sensation in your calf muscles. At this point, stop exercising and record the number of repetitions in your activity log.



Sideways leg lift

Aim: To strengthen lower limb muscles and hip stabilisers

Instructions: Stand holding onto a fixed support.

Keeping your body straight and your leg straight, lift your leg out to the side as in the picture then return it back to the starting position.

Stop exercising when you feel an ache develop in your buttock or the muscles at the side of your hip.

Record the number of repetitions you manage in your activity log.

Progression: once you have lifted your leg out to the side, hold it there for 2-3 seconds before returning it to the start position.



Backwards leg lift

Aim: To strengthen the lower limb muscles and hip stabilisers. These muscles specifically help with standing up and walking.

Instructions: Stand holding onto a fixed support.

Keeping your body straight and your leg straight, lift your leg out behind you as in the picture, then return to the starting position. Make sure you do not lean forwards as you are doing the exercise.

Stop exercising when you feel an ache develop in your buttock.

Record the number of repetitions you manage in your activity log.

Progression: Once you have lifted your leg out behind you, hold it there for 2-3 seconds before returning it to the start position.



Hip marching whilst standing

Aim: To strengthen your lower limb muscles.

Instructions: Stand holding onto a fixed support.

Lift one leg up and down, then the other as if you are marching on the spot.

Continue with the exercise until you develop an ache in your leg muscles or feel as if you are becoming short of breath.

Record the number of steps you have managed or (using a timer) how long you have managed to exercise for in your activity log.



Chest training and breathing exercises:

Pre-operatively we ask that you practise the breathing exercises detailed below daily, so you are happy with the technique and are able to complete them independently after surgery.

Major surgery requires you to have a general anaesthetic over a period of several hours. These things combined can result in the following:

- General anaesthetic can interfere with your bodies normal ability to clear secretions from your chest (this will be made considerably worse if you are a current smoker)
- You may have some abdominal swelling post operatively, this reduces the amount of space there is for your lungs to inflate, meaning you may struggle to take a deep breath in
- If pain relief is suboptimal, it could cause you to take smaller, shallower breaths which will not fully inflate your lungs. It may also mean you struggle to sit out and mobilise as needed

Post operatively you will be encouraged to take deep breaths regularly to help expand all areas of your lungs and aid clearance of any secretions that are present.

If you are unable to do this due to pain, you will need to let your nurse or doctor know so they can adjust your pain relief to make this more comfortable for you.

Deep breathing exercises:

Complete the following sequence five times:

- Take a slow deep breath in through your nose until your lungs feel full
- When your lungs feel full, hold that breath for 3 seconds
- Breathe out slowly through your mouth until your lungs feel empty

After 5 deep breaths, place your arms across your tummy, giving yourself a gentle hug to support it, take a deep breath in and do a strong cough to clear any secretions you may have. You can place a pillow or a rolled-up towel over your tummy if you feel this will provide better support.

Although this can be uncomfortable, 1 strong cough is much more effective to clear any secretions that are present than small half-hearted coughs, or throat clearing.

Post-operative Exercises

As well as completing your deep breathing exercises, sitting out and mobilising, you will be expected to complete the following exercises at intervals throughout the day.

Static quads contraction

Aim: Strengthening thigh muscles.

Instructions: Lying in bed, pull your foot up towards your body from your ankle and push your knee down as straight as possible onto the bed.

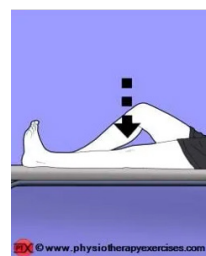
Hold for 5-10 seconds.

Repeat 5-10 times.

Repeat the above with the other leg.

These exercises should be completed 3 – 4 times daily.

Alternative method: The above exercise can be done with both legs at the same time.



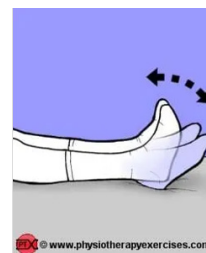
Ankle pumps

Aim: To promote good circulation.

Instructions: point your feet down towards the bottom of the bed then pull them back towards you.

Repeat 20 times.

These exercises should be completed 3 – 4 times daily.



Week commencing:	Baseline	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
 Wall press up								
 Press up in kneeling								
 Sit to stand with arms crossed								
 Wall squat								
 Step ups								
 Bridging								

Week commencing:	Baseline	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
 Arm raises								
 Bicep curls								
 Hip marching in sitting								
 Knee extension								

Week commencing:	Baseline	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
 <p>Calf raises</p>								
 <p>Sideways leg lift</p>								
 <p>Backwards leg lift</p>								
 <p>Hip marching in standing</p>								

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 <p>Hip marching in standing</p>								

Pre-operative Deep breathing exercise practice log

Week 1 and 2:

	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Number of sets (of 5) deep breathing exercises completed:														

Week 3 and 4:

	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Number of sets (of 5) deep breathing exercises completed:														

Week 5 and 6:

	Mon	Tue	Wed	Thur	Fri	Sat	Sun	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Number of sets (of 5) deep breathing exercises completed:														

English

If you need information in another way like easy read or a different language please let us know.

If you need an interpreter or assistance please let us know.

Lithuanian

Jeigu norėtumėte, kad informacija jums būtų pateikta kitu būdu, pavyzdžiui, supaprastinta forma ar kita kalba, prašome mums apie tai pranešti.

Jeigu jums reikia vertėjo ar kitos pagalbos, prašome mums apie tai pranešti.

Polish

Jeżeli chcieliby Państwo otrzymać te informacje w innej postaci, na przykład w wersji łatwej do czytania lub w innym języku, prosimy powiedzieć nam o tym.

Prosimy poinformować nas również, jeżeli potrzebowaliby Państwo usługi tłumaczenia ustnego lub innej pomocy.

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਰੂਪ ਵਿਚ, ਜਿਵੇਂ ਪੜ੍ਹਨ ਵਿਚ ਆਸਾਨ ਰੂਪ ਜਾਂ ਕਿਸੇ ਦੂਜੀ ਭਾਸ਼ਾ ਵਿਚ, ਚਾਹੀਦੀ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

ਜੇ ਤੁਹਾਨੂੰ ਦੁਭਾਸ਼ੀਏ ਦੀ ਜਾਂ ਸਹਾਇਤਾ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

Romanian

Dacă aveți nevoie de informații în alt format, ca de exemplu caractere ușor de citit sau altă limbă, vă rugăm să ne informați.

Dacă aveți nevoie de un interpret sau de asistență, vă rugăm să ne informați.

Traditional Chinese

如果您需要以其他方式了解信息，如易读或其他语种，请告诉我们。

如果您需要口译人员或帮助，请告诉我们。