

Patient Information

Recovery following Abdominal Surgery



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Introduction

In consultation with your surgeon you have decided to have abdominal surgery.

This booklet has been compiled by the Wesley Colorectal Team and explains:

- + What abdominal surgery is;
- + The preparation needed prior to surgery;
- + Information about your recovery in hospital;
- + Advice and information for when you go home.

This booklet is intended as a guide. Please remember to contact a member of your healthcare team if any information is unclear or you have further questions regarding your surgery and your recovery.

Please bring this booklet to hospital with you on admission.

Commit to your rehabilitation

Your Colorectal Care Team will guide you through your post-operative rehabilitation. Please note you will be in the very early phase of recovery when you leave hospital and it is normal to still experience pain/discomfort at this stage. You will continue to recover for at least 6-12 weeks after your surgery depending on the extent of the operation.

Abdominal Surgery

There are two different types of approaches to abdominal surgery:

1. Laparotomy: which is where the surgeon will access your abdomen through a large incision. The location of the incision will vary depending on your specific surgery.
2. Laparoscopic: A complex key hole surgery where the surgeon will access your abdomen through 3-4 key hole port sites. Again, the location of these sites will vary depending on your surgery.

Preparing for Surgery

Pre-Surgery Home Preparation: Home Setup

Prior to your surgery it is important that you prepare your home in anticipation of your discharge from hospital. Things to consider include:

- + Set up and prepare equipment to assist with completing your daily tasks such as showering and toileting
- + Develop a plan for boisterous pets
- + Prepare some meals in advance by cooking and freezing. Post-operative nutrition/diet requirements should be discussed with your Surgeon/Dietician.
- + Arrange a support person (family, friend or neighbor) to assist with household tasks or transport in the first few weeks after you go home.
- + Consider options for physiotherapy follow-up after your discharge. The Physiotherapy Team can discuss these options with you during your admission.

Pre-Surgery Home Preparation: General Exercises

General exercise

We do encourage you to be as active as possible prior to your operation, as general fitness is extremely important for post-operative recovery. Start exercising as soon as you know you are having an operation as the more pre-habilitation you have, the better.

Aim to do at least 30 minutes of exercise daily, or as much as you are able. Examples of exercise are brisk walking, swimming or cycling. If you need to you can break the 30 minutes into smaller sessions (i.e 3 sessions of 10mins).

Deep breathing exercises

Deep breathing exercises will be a core part of your acute recovery post-operatively. To encourage optimal lung capacity, we suggest you familiarise yourself with, and practice 'deep breathing exercises' as per the instructions found on page 7.

Doing these general exercises before your operation can help reduce the risk of complications after surgery such as chest infection and blood clots (deep vein thrombosis or DVT).

Core stability exercises

Having abdominal surgery will affect your abdominal muscles and hence your core stability.

To improve your core stability prior to your surgery, we suggest you practice the abdominal "core" stability exercises outlined on page 11.

The ideal position for your core stability exercises is lying on the floor. However, if you are unable to do so, position yourself lying on a bed. These exercises will be completed in a lying position initially. Your physiotherapist will progress these as necessary and appropriate.

Aim to do these exercises three times a day.

Post-Operative Recovery

In the Recovery Ward you will be closely monitored until it is time to return to your room. You may have intravenous (IV) drip therapy to provide fluids and medications (pain relief). You may have an oxygen mask on at first, and your nurses will remind you to practise deep breathing exercises and coughing to help prevent lung complications.

The nurses will check your blood pressure, pulse, breathing, wound dressing and any drains. You will stay in the Recovery Ward until your condition is stable. The anaesthetist will check on you before you return to your room.

Return to ward

Expectations when you return to the ward:

Your nurse will closely monitor your vital signs, including:

- + Blood pressure
- + Pulse
- + Respiration rate
- + Oxygen levels
- + Temperature
- + Urine output
- + Nausea and pain scores

Please be aware that these observations are important, and staff will have to frequently wake you during the night to monitor you.

In conjunction with observations your nurse will perform hourly rounding with you to ensure high quality care and address any needs. In rounding, your nurse will check your pain, position in bed, and personal needs. You will also be encouraged to eat and drink on your return to the ward to assist in your recovery (as per your Doctor's dietary orders).

Nausea

Please be aware that nausea is a potential side effect of anaesthesia and many analgesics. It is important that you let your nurse know if you are experiencing any nausea symptoms to enable effective management. This is to ensure that nausea does not delay your post-operative recovery.

On the road to recovery

Preventing blood clots

Following a major operation your risk of developing a blood clot in your leg or lung is much higher than usual. There are two main reasons for this is:

1. Sluggish blood flow due to immobility.
2. The natural tendency of the blood to clot after major surgery to prevent further bleeding.

A blood clot that forms in the deep veins of the leg is called a Deep Vein thrombosis (DVT). When a clot forms, it usually remains adhered to the vein wall. However, sometimes one of two things may happen:

1. Part of the clot may break off and travel to the lungs. Here it may block and reduce the ability for oxygen to enter into your blood stream. This dangerous condition is known as a pulmonary embolus (PE).
2. Less seriously, if the clot in the leg is not treated, it may lead to long-term symptoms such as pain or discomfort, swelling, rashes or, in severe cases a skin ulcer. This is called post-thrombotic syndrome.

Symptoms of DVT

- + Pain, swelling or feeling a tightness in your leg (most commonly calf)
- + Increased warmth or a change in skin colour in your leg

Symptoms of Pulmonary Embolus

- + Difficulty breathing or shortness of breath
- + Pain in your chest or lungs
- + Feeling faint or generally unwell
- + Coughing up blood

If you experience any of these symptoms in hospital or after discharge, tell your doctor/nursing staff immediately, or go to the nearest emergency department.

Pain control

Post-operatively it is expected that you will experience some degree of pain; however, the pain should not prevent you from deep breathing, coughing, moving or completing your exercises. You are likely to need some form of pain medication. Discuss the options with your doctor and care team.

Effective pain management after surgery allows you to:

- + Sit out of bed, shower, and start walking;
- + Relax and sleep more restfully;
- + Practice your deep breathing, supported cough and exercise program more comfortably; and
- + Have fewer complications, recover faster and leave hospital sooner.

Physiotherapy and Exercises

Post-operatively you will be working with the physiotherapist to facilitate your rehabilitation. This enables you to recommence an active lifestyle. You will be seen regularly during your hospital stay.

Deep Breathing Exercises and Supported Cough

Some side effects of a general anaesthetic include decreased respiratory rate and respiratory functions; such as the clearing of sputum (phlegm). This can in turn result in collapse of airways, thick and sticky sputum that is harder to clear and a less effective cough. Immediately post-operatively we encourage regular deep breathing exercises to:

- + Keep your chest clear
- + Reduce the risk of chest infection
- + Ease nausea (sickness)
- + Aid with relaxation
- + Ease wind/gas pains

Deep breathing exercises are best performed while sitting as upright as possible in bed or, preferably, in a chair once able:

- + Place a rolled-up towel or firm pillow over your abdominal wound. Place both hands over the towel and apply moderate pressure to the wound.
- + Take a slow, deep breath in through your nose, trying to fill your lungs completely as pain allows
- + Hold for 3-5 seconds, then relax and sigh out. Repeat 5 times.

Aim to complete 2 cycles of 5 breaths, with a 30 sec break in between cycles, every hour post-operatively.

Supported coughs are also best performed in an upright position. It is encouraged to cough post-operatively in order to clear your secretions. There is a higher risk of infections if secretions are immobile in your lungs.

- + Place a rolled-up towel or firm pillow over your abdominal wound. Place both hands over the towel and apply moderate pressure to the wound.
- + Take a slow, deep breath in through your nose and hold for 3 secs
- + Brace your wound more firmly and cough or “huff” as pain allows



If you have the need to cough ‘something up’, the least painful and most effective way is to ‘huff’. After your deep breath do a short, forced breath out through an open mouth as if steaming up a mirror. Your physiotherapist will practice this with you if necessary.

Bed Exercises

These exercises help to maintain blood circulation and reduce your risk of developing post-operative complications. Complete hourly.

1. **Ankle Pumps:** Move your feet up and down at the ankle to pump your calf muscles strongly. Repeat 20 times
2. **Static Quadriceps:** Tighten your thigh muscle so that you feel the crease at the back of your knee pressing down into the bed. Hold for 3 seconds then relax. Repeat 10 times.
3. **Static Gluteals:** Squeeze the cheeks of your bottom together. Hold 3 seconds then relax.
4. **Hip Flexion:** Keeping your heel on the bed, slide one heel at a time up towards your bottom, bending your knee and hip.



Bed Mobility

To help your recovery, it is important to get moving as soon as possible within your comfort levels. You will find rolling to get in and out of bed the most comfortable. Good pain management is also important.

Getting out of bed:

- + Bend your knees, one at a time, and roll your legs and torso as a block onto your side;
- + Bend knees up and over the edge of the bed
- + Push through your elbow and hand to push into sitting position
- + Push through your legs and arms and straighten trunk to stand.



Getting into bed:

- + Sit towards the top of the bed
- + Use your arms to help lower your head onto the pillow as you bring your legs up
- + Gently roll onto your back



Sitting out of bed

One of the best activities to promote good lung volumes post-operatively is sitting out in the chair. Gentle activity will also help your gut to starting working again.

The nursing or physiotherapy staff will aim to help you sit out of bed the day after surgery. You may wish to use a pillow to support your back and request pain relief from nursing staff to remain comfortable for longer.

Any drips or drains, such as a catheter or IV pole, can move with you, and will not stop you getting out of bed and sitting out in the chair.

You should aim to start with sitting out of bed twice daily for at least an hour and increase the time each day.

Chair based exercises

1. **Ankle Pumps:** Move your feet up and down at the ankle to pump your calf muscles strongly. Repeat 20 times.
2. **Knee Extensions:** Straighten your knee. Hold your leg straight for 10 seconds with toes pulled up. Relax, and bend again. Repeat 5 times with each leg.
3. **Marching:** Lift your knee up and march on the spot. One leg at a time. Repeat 10 times each leg.
4. **Sit to stand practice:** Leaning forward at the hips, push through your legs to stand. Stand straight and as tall as possible. Repeat 5 times.

Complete these exercises with the aim of building up to three times daily.



Walking

The best exercise after surgery is walking. You will be assisted to walk by the nursing or physiotherapy staff from the first day after your surgery, until you can walk safely by yourself.

When you first stand up or start to walk, you may be tempted to stoop. It is normal to feel your wound stretch or pull when trying to stand up straight. Try to walk tall and relax your shoulders. This will not harm your wound.

While you may feel weak or tired when you first start to walk, this is normal. Regular short walks around your bed space, to the toilet or to look out of the window are a good starting point to aim for.

Once you are able to walk independently out of your room you will be encouraged to increase the frequency and distance walked with the aim of being able to go for a walk every hour during the day.

Benefits of walking include:

- + Promotes independence
- + Prevents chest infections
- + Prevents wound and urine infections
- + Decreases the risk of developing blood clots
- + Increases your strength, fitness and endurance
- + Can improve general wellbeing and mental health

Standing exercises

Once you can do the seated exercises comfortably, progress to exercises in a standing position. Remember to hold onto a firm support to do these exercises. Aim to maintain good upright posture throughout.

1. **Knee Lifts:** March on spot, lifting your knee as high as comfortable. Repeat 10 times each leg.
2. **Mini Squats:** Stand with feet shoulder width apart and toes pointing forwards. Imagine you are about to sit on a high stool. Poke your bottom out and gently bend both knees, keeping your heels on the floor. Return to standing. Repeat 10 times.
3. **Heel raises:** Rise up onto your toes then slowly lower down. Repeat 10 times.
4. **Side-stepping:** Keeping your leg straight and toes pointing forwards, take a step to the side and step together. Repeat in the opposite direction until you return to your starting point. Repeat 10 times.

Complete these exercises with the aim of building up to three times daily.



Abdominal (Core Stability) Exercises

Having abdominal surgery will affect your abdominal muscles and hence your core stability. These exercises aim to target core muscles and gradually build abdominal strength. The best position to do these exercises in is lying on the bed with your head on a pillow, your knees bent and feet flat on the bed. Complete these exercises daily with the aim to up to 3 times daily.

Deep Abdominals (Transversus Abdominis)

The transversus abdominus forms the deepest layer of the abdominal muscles and acts to draw in the lower abdominal wall like a muscle corset.

Your physiotherapist will teach you how to best activate this muscle but the following reminders may help:

- + Place your fingers on the inside of your pelvis (hip) bones to feel the muscle.
- + Relax and gently breathe in and out a few times.
- + When ready, gently draw your lower abdomen in (slightly drawing your navel towards your spine). Drawing up your pelvic floor at the same time can help to activate your transversus.
- + Hold for 3 seconds and then relax. Breathe normally. Repeat 3-5 times



Gradually build up to holding for a maximum of 10 seconds and repeating 10 times.

Pelvic Tilting

Activate your transversus abdominis (deep tummy muscles), as above. Round your spine pushing the lower part of your spine into the bed, then rotate hips forward to push your bottom into the bed. Hold for 3 seconds in each position. Repeat 3-5 times.

Gradually increase to repeat 10 times

Knee Rocks

With knees bent and feet flat on the bed, gently rock both knees together side to side as far as pain allows. Make sure your shoulders remain on the bed. Breathe normally throughout the movement. Repeat 3-5 times to each side.

Gradually increase to 10 times to each side.



It is advised to **avoid** exercises like sit ups as they put undue pressure on the abdominal wall. Whilst healing, the muscles will be weak and therefore prone to a hernia developing. Although the wound has been stitched together with strong sutures it will take a while to regain its original strength. Please consult your physiotherapist or Doctor as to when higher level abdominal exercises are appropriate.

Appropriate Toileting Position

It is important post-operatively to minimise any increase in your intra-abdominal pressure in order to allow time for surgical sites to heal. Exercising good toilet posture and avoiding prolonged pushing or bearing down on the toilet is advised.

Toileting Position for Emptying Bowels

Lean forwards from your hips so your elbows rest on your knees. Keep your back straight. Relax and let your lower abdomen move forwards. Breathe gently in and out. Now gently bulge your lower abdomen forwards and allow your waist to widen. Hold this for 5 seconds and feel your anal sphincter open. Try not to hold this for more than 15 seconds. Return to quiet breathing between holds. When you have finished, sit for a while and breathe quietly. A foot stool may assist you to obtain the forward lean position.



If your abdominal surgery has resulted in a stoma, the Stoma Care Team will review you in hospital and provide education around your stoma care.

Ongoing Rehabilitation in the Home

After abdominal surgery with a large incision (laparotomy) it takes about two to three months to be able to move around comfortably. If you have had complex key hole (laparoscopic) surgery, your recovery will be quicker.

If you have had a large incision in your abdomen you should avoid lifting anything heavier than 2-3kg for at least the first 4 weeks. This is about the weight of a full kettle. As a general rule, if lifting an object causes pain, then do not lift it. Your Doctor will indicate when you can gradually return to heavier lifting.

It can take about two years for the strength of your abdominal wall to return to pre-operative strength. To achieve this, you should continue your core stability exercises three times daily, remembering that the exercises may cause discomfort but should not be painful. If you have specific return to sport/activity goals, please talk to your Physiotherapist and we can recommend a progressive program and outpatient services.

Regular Activity

Aim to walk every day, gradually increasing the distance. You should aim to be able to walk for 30 minutes a day by one to two months after your operation. Start walking on the level ground and gradually build up to inclines and uneven surfaces. Walking on uneven ground requires small changes of direction which can cause some discomfort in the healing abdominal muscles.

After two to three months you could consider moderate exercise; such as swimming or cycling. To progress your core stability exercises you could attend a Yoga or Pilates group. It is advised to seek the advice of the instructor about the appropriate level of exercise.

If you wish to return to a specific sporting activity, please discuss this with your surgeon and physiotherapist.

Exercise Summary

Pre-Surgery exercises:

- + General exercise
- + Deep breathing exercises
- + Core stability exercises

Post-Surgery exercises:

- + Deep breathing exercises + supported cough
- + Bed exercises to maintain blood circulation
- + Bed mobility exercises
- + Sitting out of bed
- + Chair based exercises
- + Standing exercises
- + Appropriate toileting posture
- + Core stability exercises

Ongoing rehabilitation at home:

- + Core stability exercises
- + Chair exercises
- + Standing exercises
- + Progressive walking program
- + Follow-up physiotherapy /return to activity or sport

Notes

Please note any questions you may have at the time of your appointment with your surgeon. You may not remember to ask the question after you leave.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

References

Boden I, Browning L, Skinner EH et al. (2015) 'The LIPPSMAck POP (Lung infection Prevention Post Surgery – Major Abdominal – with Pre-Operative Physiotherapy) trial: study protocol for a multi-centre randomized controlled trial' *Trials*. 16:573

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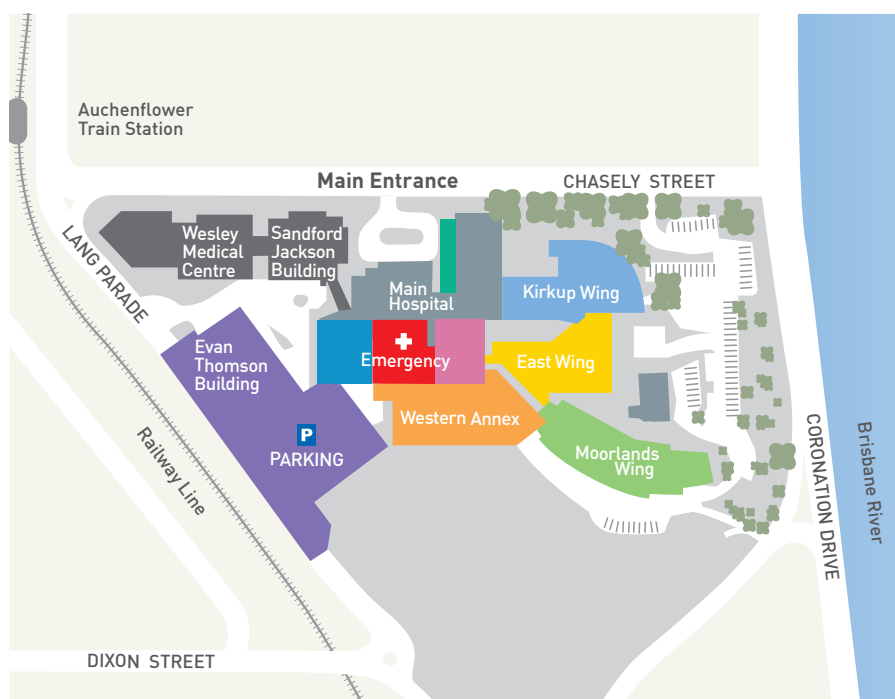
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