



Abdominal Core Surgery Rehabilitation ProtocolSM

Patient Guide

Version Date: 8-9-2019

Your Care Team

Patient: _____

Surgeon: _____

Hospital Site: _____

Physical Therapist: _____

Physical Therapy Site: _____

Overview

After undergoing abdominal wall reconstruction or hernia repair, your body has a new ability to stabilize its “core.” Rehabilitation of your core after these operations is important to maintain function and flexibility and can help reduce pain. This is a guide to help you regain function and restore abdominal core health. *If you have not already done so, you should consult with your surgeon before you start the program described in this guide.* Some of the topics covered in this guide include:

➤ **Self-Care for Healing and Recovery**

After your surgery, your abdominal tissues will continue healing for several months. The first four weeks are when you are most susceptible to re-injury. This section includes information to help you protect your hernia repair and reduce your risk of developing health problems during your recovery.

➤ **Stretching**

Stretching helps reduce discomfort, improve your blood circulation, and maintain abdominal core movement. It also helps reduce scarring and scar tissue. This section includes stretches with tips to protect your hernia repair.

➤ **Activities of Daily Living**

Basic activities are usually more difficult immediately after surgery. This section includes techniques to protect the hernia repair during routine daily activities such as sleeping, walking, etc.

➤ **Exercises**

Developing weakness after surgery is very common and can prolong your recovery. This section contains exercises that will help reduce strength loss while avoiding excess stress to your hernia repair.

Always listen to your body and assess how you feel. Your pain should not go up more than 2 points on a 10 point pain scale with exercise or daily activities. Understanding all the factors that affect pain can help with pain management. View this link to help you throughout your recovery: <https://www.youtube.com/watch?v=cLWntMDgFcs>. *You should also consult your surgeon and physical therapist if you have unexpected pain or you have any concerns about participating in the program described in this guide.*

Rehabilitation Schedule

BEFORE SURGERY:

- 4+ weeks: Office visit with your surgeon. You will receive this guide from clinic staff.
- 2-4 weeks: Prehabilitation physical therapy visit to familiarize you with self-directed exercises and correct form. If unable to make a referral to physical therapy, nurses can provide this education in clinic.

IN HOSPITAL:

- In-Hospital: Physical therapy visit for teaching, reviewing, and assessing mobility. Increase in-hospital physical therapy as needed. You may begin completing self-directed exercises and stretches as tolerated.

AFTER SURGERY:

- 0-2 weeks: Self-directed stretches/exercises from this guide
- 2-4 weeks: Physical therapy 1x per week
- 4-8 weeks: Physical therapy 1x per week
- 8-12 weeks: Physical therapy 2x per week (bump up to increase core strength without abdominal strain)

Test abdominal core muscle strength
- 12-16 weeks: Physical therapy 1x per week (with increased home exercise program)
- Discharge from PT: Re-test abdominal core muscle strength

Table of Contents

Before Surgery and Day of Surgery

Prehabilitation.....Section 1

Day of Surgery.....Section 2

After Surgery

0-2 Weeks.....Section 3

2-4 Weeks.....Section 4

4-8 Weeks.....Section 5

8+ Weeks.....Section 6

Walking Log.....Appendix A

Pain Scale.....Appendix B

Rehabilitation Protocol Development Team.....Appendix C

Before Surgery: Prehabilitation Visit

The goal of this visit is to familiarize you with what to expect after surgery and some of the ways you can help your abdomen heal using various exercises and techniques. This visit should take place approximately 4 weeks prior to your surgery. Either the surgical team seeing you prior to surgery will review this with you, or a separate visit will be setup with a physical therapist. This guide should be brought along to all visits to be reviewed and completed with your surgical team or physical therapist.

Self-Care for Healing and Recovery

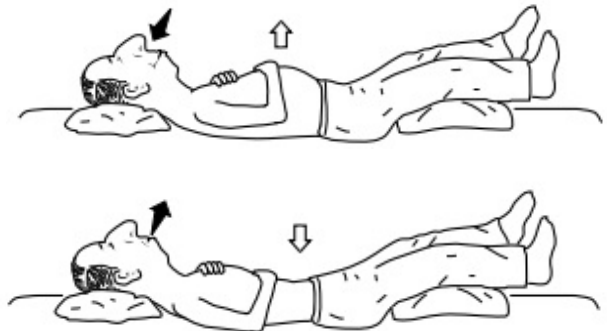
✓ **Self-Splinting**

Splinting is used to protect your surgical site during activities that cause strain, such as coughing, sneezing, and laughing. To splint, apply gentle pressure to the surgical site with a pillow or your hands. Splinting may also be used to practice diaphragmatic breathing if it is painful.

✓ **Diaphragmatic Breathing***

You may practice in any position, but you may want to begin lying down or in a reclined position. Place a pillow under your knees and your hands around the lower portion of your rib cage. Relax your jaw and let your mouth open slightly.

Take a deep breath in through your nose, letting your rib cage widen into your hands and your abdomen expand. Keep your upper chest, neck, and shoulders relaxed as you inhale. Breathe out through your mouth, allowing your whole body to relax and belly to deflate. Remember to breathe slowly. Do not force your breathing.

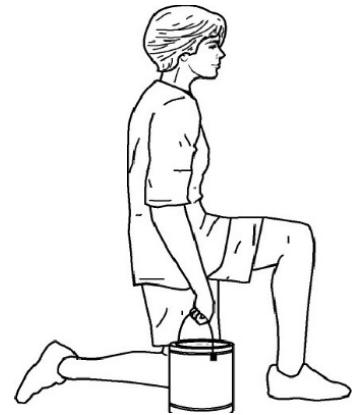


✓ **Desensitization Techniques**

Sometime surgical scars become overly painful or sensitive. When this occurs, desensitization can be used to help normalize the sensations around the scar. To do this, gently rub the area around the incision with light touch using your finger, a feather, cotton balls, or a t-shirt. Different textures may be used.

✓ **Bending***

This motion is similar to squatting down to lift something off the floor. Leaning over puts additional pressure on your abdomen. If you need to bend down to get something, come down to a kneeling position first and keep your chest tall.

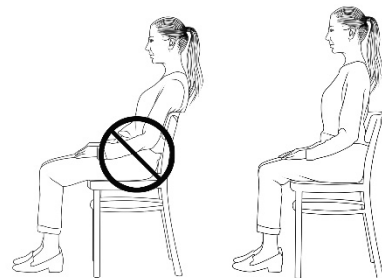
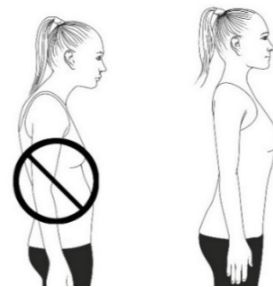


✓ **Pelvic Floor**

These are the muscles that make up the base of your pelvis and run front to back and side to side of your pelvis. They assist with continence and elimination and are in integral part of your abdominal core. They also help with managing our intra-abdominal pressure, or strain in your belly. Learning how to engage these muscles can help your recovery.

✓ **Posture**

Avoid slouching. Stand up straight. When sitting, place your buttocks against the back of your chair. Keep your ears, shoulders, and hips in a line to prevent strain on your lower back. Do not hunch over.



Stretching

✓ **Pectoralis Stretch***

Standing in a doorway, place your arms at shoulder level and forearms against the doorframe. Place your feet with one in front and one in back, and gently lean forward until gentle stretch is felt across your chest. Be sure to keep your back neutral. Hold for 15-30 seconds.



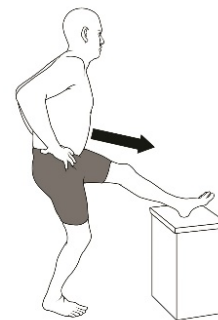
✓ **Quad Stretch**

Place hands on abdomen to splint surgical site. Bend at the knee to bring your leg behind you and place the top of your foot on the seat of a chair. You should feel this stretch in the front of your thigh. Hold for 15-30 seconds.



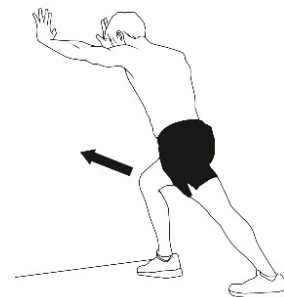
✓ **Standing Hamstring Stretch**

Stand with one foot slightly in front of you and flex your foot toward you, keeping your knee straight. Hinge forward at your hip without rounding your spine. Hold for 15-30 seconds.



✓ **Calf Stretch**

Stand with one foot back, keeping forward leg slightly bent. With your back heel on the floor, lean forward until you feel a stretch in your calf. Hold onto wall or chair for support if needed. Hold 15-30 seconds.



✓ **Upper Trap Stretch***

Press your right ear to your right shoulder. Do not raise your shoulder to your ear. Feel the stretch in the side of your neck. Hold for 15-30 seconds. Return to looking straight ahead.



✓ **Stand and Arch Back***

Stand with feet hip-width apart and hands on the small of your back. Gently arch your back to slightly stretch your abdominal muscles. This can also be done against an exercise ball, counter, or couch.



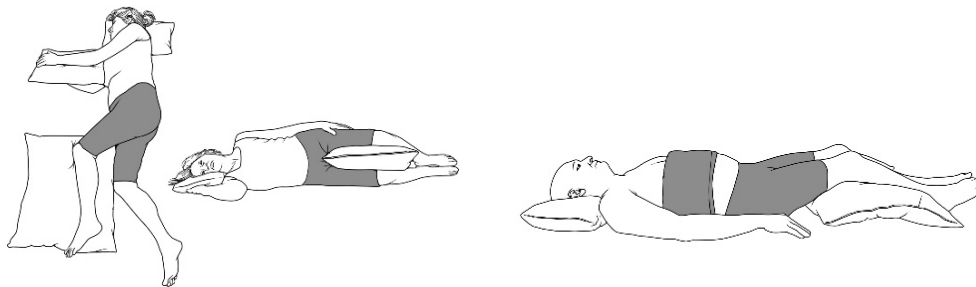
✓ **Side Abdominal Stretch**

Stand with feet hip-width apart. While keeping your chest upright, gently lean to the right, extending your right fingertips down your side towards your right knee to gently stretch your oblique. Return to center and repeat on the other side.

Activities of Daily Living

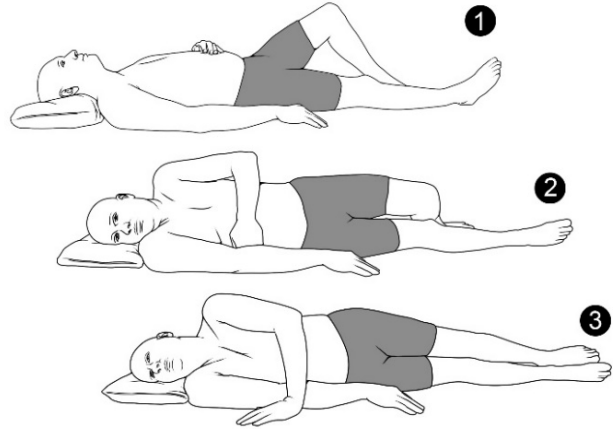
✓ **Sleeping**

If you sleep on your side, place a pillow between your knees while you sleep. If you sleep on your back, place a pillow under your knees while you sleep.



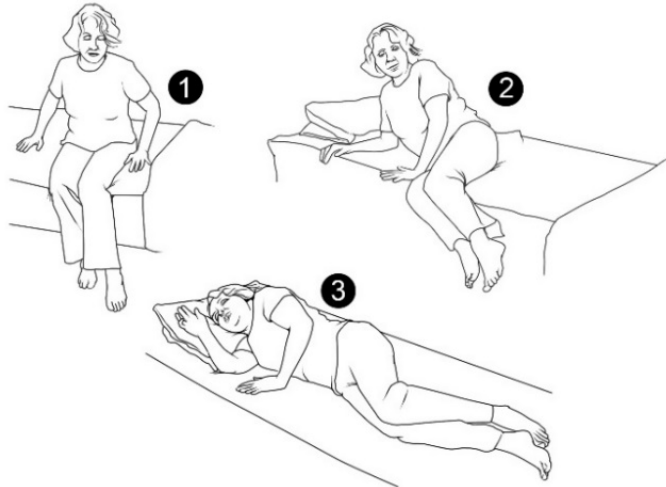
✓ **Log-Rolling**

While laying on your back, bend your left knee and splint surgical site with left hand. Roll all in one movement to the right. Reverse to roll to the left. Always move as one unit to avoid twisting the spine. As you exhale and roll over, gently pull your belly button in towards your spine.



✓ **Getting to Bed**

Lower self to lie down on one side by raising legs and lowering head at the same time. Use arms to assist moving; do not twist. Bend both knees to roll onto back if desired. To sit up, reverse this movement.



✓ **Squatting***

Bend your knees, keep your head straight, and slowly lower your buttocks towards the ground. Keep your chest up and avoid leaning forward.



Exercises

Complete the following exercises multiple times per day, according to your fitness level. Be sure to stretch before and after exercising. Your physical therapist may tailor these exercises to your specific needs.

| Activity Level | Sets | Times Per Day |
|-----------------|--------------|---------------|
| Not very active | 3 sets of 5 | 3 |
| Fairly active | 3 sets of 10 | 3 |
| Very active | 3 sets of 10 | 5 |

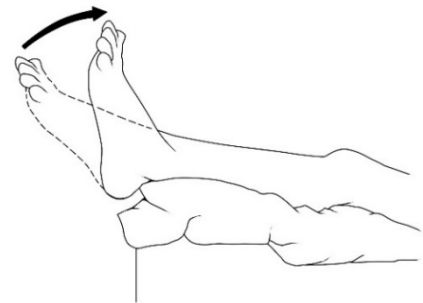
Sit to Stand

Sit on the edge of a chair. Activate your core muscles by pulling your belly button in. Maintain this while you lean your trunk over your feet, until you shift your weight into your feet. Fully extend your knees as you raise your trunk up, exhaling as you stand.



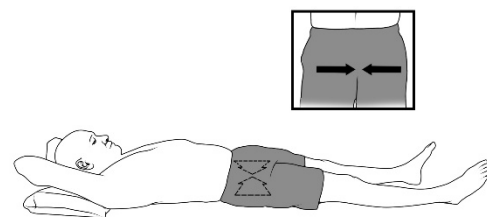
Ankle Pumps

Lay on your back and elevate legs. With legs elevated, gently flex and extend ankles. Move through a full range of motion, avoiding pain.



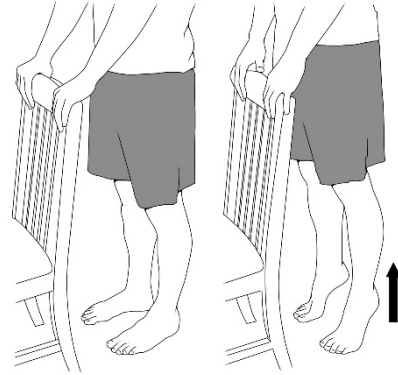
Gluteus (Buttock) Squeezes

Lay on your back. Slowly tighten buttock muscles. Hold 5 seconds and release.



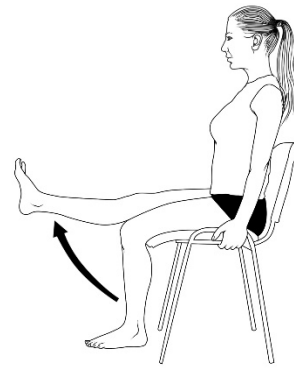
Heel Raises

Slowly rise on balls of feet and lower back down. May start with this exercise in a seated position and progress to standing.



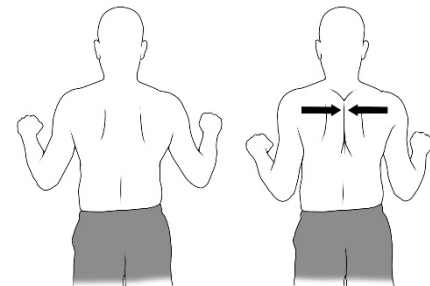
Seated Knee Extension

In a seated position with back supported, straighten one leg out in front of you. Slowly lower leg and repeat on other side.



Shoulder Blade Squeezes

With elbows bent to 90 degrees, pinch shoulder blades together and rotate arms out. Keep elbows bent.



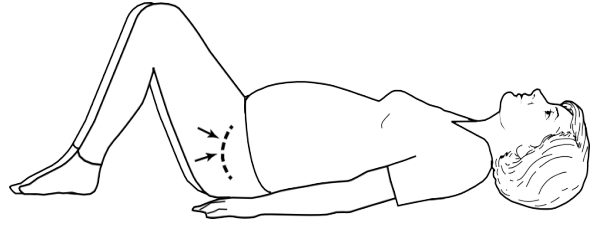
Shoulder Rolls*

Roll your shoulders backward in a circle. Rest and repeat movement in the opposite direction.



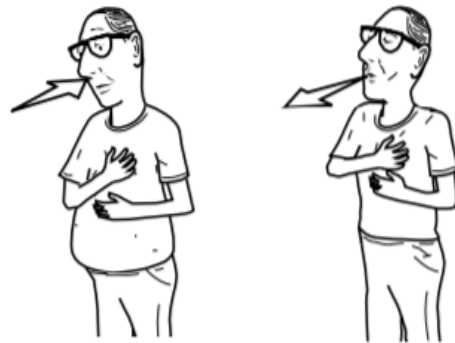
Pelvic Floor Contraction with Breath*

Lay on your back. Keep your buttocks and thigh muscles relaxed during the entire exercise. Breathe slowly. Notice your stomach rises when you inhale and your stomach falls as you exhale. As you exhale, tighten the muscles that you would use to stop the flow of urine (pelvic floor muscles).



Coordination of Movement with Breath*

Get used to using belly muscles appropriately. Practice exhaling as you stand, as you rollover, as you bend down, and as you stand up. Talk to your physical therapist for additional movement strategies tailored to your specific needs.



Forward Lunges*

Stand with one foot slightly in front of the other. Step forward with your back leg and slowly allow this knee to bend, without allowing your knee to go out past the end of your foot. Return to standing and repeat on other side.



Day of Surgery

Please bring this guide with you when you come for your surgery. You may see a physical therapist while you are in the hospital, depending on your surgery. Remember that it is normal to have pain after surgery, especially in the first few days. It is ok to do gentle exercises even with some abdominal pain. Moving around as much as possible will help you heal faster.

Reminders:

- ✓ Bring your abdominal binder with you on day of surgery.
- ✓ Breathe with movement. Exhale with exertion.
- ✓ Sit up in a chair for all meals.
- ✓ Get up to walk 3 times per day for 5 minutes. Focus on breathing. Walk like you're walking alongside a toddler, taking slow, steady steps.
- ✓ After surgery, wear your abdominal binder down over your hips. It may ride up towards your chest while laying down, but it is important to adjust it to the correct place.

Exercises:

You can begin doing exercises in your hospital bed or the day you arrive home from surgery to relieve pain and help the healing process. Refer to Section 1 for descriptions of these exercises. Try doing these 2-3 times per day as tolerated to improve circulation and help work your muscles:

- ✓ Ankle pumps
- ✓ Glute squeezes
- ✓ Shoulder rolls
- ✓ Shoulder blade squeezes
- ✓ Knee extensions

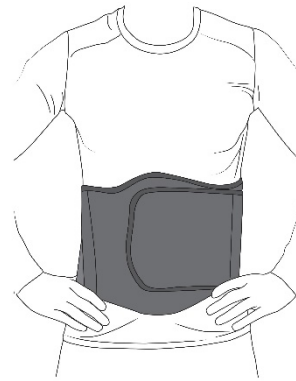
After Surgery: Weeks 0-2

Exercises to maintain your abdominal core health should begin as soon as you arrive home after your operation. These instructions will guide you through the exercises and things you can do at home to help you recover after your surgery. You should be scheduled to see a physical therapist 2-4 weeks after your surgery. If it hasn't already been scheduled, please call to get an appointment. You can begin physical therapy prior to seeing your surgical team for your post-op visit if necessary.

Self-Care for Healing and Recovery

✓ **Binder Use**

Wear your binder as much as you can during the day and night for the first two weeks after surgery. To put the binder on, lay the binder flat on a bed, then lie down with the binder under your lower back. Secure the binder so that it is snug but comfortable. If in place properly, the binder should sit low and should at least partially cover your hips. Re-adjust as needed to keep it in position.



Monitor pain, fatigue, and swelling. If pain increases by more than 2 points, resume more frequent binder use. *Refer to pain scale in Appendix B.*

✓ **Walking Program**

Begin walking program post-op day 1 with short distances up to 3-6 times daily. Walk slowly, as if walking with a toddler. Increase in 5 minute intervals, or as tolerated each day, with a goal of 30 min by the end of the 1st month. Reduce intensity if you notice increased swelling, more than moderate fatigue, and more than a 2 point pain increase. *Complete walking log in Appendix A.*

✓ **Lifting Precautions**

For the first 3 days, do not lift more than 5 pounds (ketchup bottle, coffee cup). After 3 days, do not lift more than 10 pounds (basket of laundry, gallon of milk) until 2 weeks post-operatively.

✓ **Avoid Holding Breath**

Do not hold your breath with any activities. Remember to exhale with exertion. You should not get red in the face. If you're feeling dizzy or light-headed, stop. Work on gently pulling in your belly while exhaling.

Stretching

Complete these stretches before your exercises. *Refer to descriptions and visuals in Section 1.*

- Quad Stretch
- Standing Hamstring Stretch
- Calf Stretch
- Upper Trap Stretch
- Stand and Arch Back
- Side Abdominal Stretch

Activities of Daily Living

✓ **Toileting Techniques**

Minimize straining as much as possible. Your bowels may take several days to return to your regular schedule. If you do begin straining or having trouble using the bathroom, try having your feet supported on a stool in front of you. This helps relieve pressure on your abdomen and encourages an easier passage. Remember to exhale as you bear down. Drinking plenty of fluids and over the counter laxatives can help as needed.



Contact your doctor if you have dark, bloody, hard stool or struggle to pass a bowel movement for 3+ days.

- ✓ **Maintain Good Posture**
Refer to diagram in Section 1.

- ✓ **Diet**
Your diet plays a major role in preventing constipation after surgery. After your procedure, and especially while on pain medication, you should be eating 25-30 grams of fiber per day. Good sources of fiber include fruits, vegetables, beans, and whole grains. Fiber supplements are also helpful. Drink as much water as possible, ideally at least 2 liters per day.

Exercises

Complete the following exercises multiple times per day, according to your fitness level. Be sure to stretch before and after exercising. Your physical therapist may tailor these exercises to your specific needs. *Refer to exercise descriptions in Section 1.*

| Activity Level | Sets | Times Per Day |
|-----------------|--------------|---------------|
| Not very active | 3 sets of 5 | 3 |
| Fairly active | 3 sets of 10 | 3 |
| Very active | 3 sets of 10 | 5 |

- Sit to Stand
- Ankle Pumps
- Glute Squeezes
- Seated Knee Extensions
- Heel Raises
- Shoulder Blade Squeezes
- Pelvic Floor Contraction with Breath

You may progress to the next section once you can complete this section with no increase in pain, or as determined by your physical therapist.

After Surgery: Weeks 2-4

Self-Care for Healing and Recovery

✓ **Binder Use**

At 2-4 weeks, you may begin removing your binder during sleep. Also, begin removing your binder for 1-2 hours a day or as tolerated. Gradually decrease wear time as tolerated, as long as pain, fatigue, and swelling remain low. Continue wearing binder during lifting or more vigorous activities, such as vacuuming or unloading the dishwasher, if you feel it helps you.

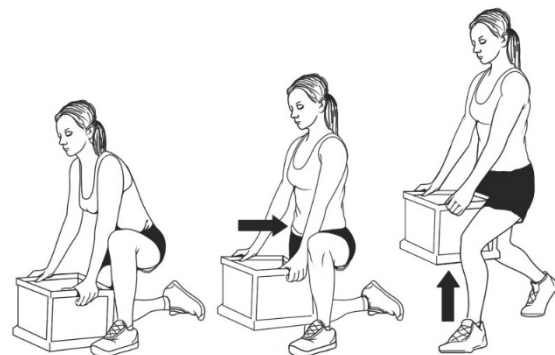
✓ **Walking Program**

Gently stretch lower extremities before and after each walk. Hold onto counter or back of chair for support if needed. Increase walking as tolerated each day. If you feel an increase in pain, swelling, or fatigue, limit increase in walking to no more than 5 minute intervals. Walk slowly, as if walking with a toddler. *Complete walking log in Appendix A.*

Do not exceed “talk test.” You should be able to carry on a conversation while walking – you may be a little out of breath, but still able to answer. If you are unable to maintain talk test with changing speed, add 2 more days to walking program and then try again.

✓ **Lifting Precautions**

You may lift up to 10-15 pounds between 2-4 weeks after surgery. Refer to Section 1 for more information on how to lift safely.



✓ **Desensitization Techniques**

Sometime surgical scars become overly painful or sensitive. When this occurs, desensitization can be used to help normalize the sensations around the scar. Gently rub the area around the incision with light touch using your finger, a feather, cotton balls, or a t-shirt. Different textures may be used.

Stretching

Continue with stretches from weeks 0-2, and add this stretch:

✓ **Tensor Fascia Lata (TFL) Stretch**

Cross one leg behind another. Slightly lean away from the side where the leg is behind until stretch is felt in the hip.



Activities of Daily Living

✓ **Toileting Techniques**

Minimize straining as much as possible. Your bowels may take several days to return to your regular schedule. If you do begin straining or having trouble using the bathroom, try having your feet supported on a stool in front of you. This helps relieve pressure on your abdomen and encourages an easier passage. Remember to exhale as you bear down. Drinking plenty of fluids and over the counter laxatives can help as needed.



Contact your doctor if you have dark, bloody, hard stool or struggle to pass a bowel movement for 3+ days.

✓ **Maintain Good Posture**

Refer to diagram in Section 1.

✓ **Diet**

Your diet plays a major role in preventing constipation after surgery. After your procedure, and especially while on pain medication, you should be eating 25-30 grams of fiber per day. Good sources of fiber include fruits, vegetables, beans, and whole grains. Fiber supplements are also helpful. Drink as much water as possible, ideally at least 2 liters per day.

Exercises

Complete the following exercises multiple times per day, according to your fitness level. Your physical therapist will tell you which to include in your routine and help you set goals. Once your incision has healed, you may begin participating in cardio as tolerated. At this stage, cardio may include walking, jogging, swimming, cycling, elliptical, yoga, Tai Chi, and Qi Gong. Be sure to stretch before and after exercising. If you feel significant increase in pain while doing these exercises, stop the exercise, rest, and try again with less force or intensity. If your pain persists with activity, take a break from exercising for a few hours. *Refer to exercise descriptions in Section 1.*

| Activity Level | Sets | Times Per Day |
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| Not very active | 3 sets of 5 | 3 |
| Fairly active | 3 sets of 10 | 3 |
| Very active | 3 sets of 10 | 5 |

- Sit to Stand
- Ankle Pumps
- Glute Squeezes
- Seated Knee Extensions
- Heel Raises
- Shoulder Blade Squeezes
- Pelvic Floor Contraction with Breath

You may progress to the next section once you can complete this section with no increase in pain, or as determined by your physical therapist.

After Surgery: Weeks 4-8

Remember to bring this educational guide, your abdominal binder, and completed walking log to your physical therapy appointments!

Self-Care for Healing and Recovery

✓ **Binder Use**

At 4-8 weeks, you may wear your binder only for comfort as needed during routine activities. Continue wearing your binder during lifting or more vigorous activities, such as vacuuming or unloading the dishwasher, if you feel it helps you.

✓ **Outdoor Activity**

Do not rake or shovel snow until 8 week post-op. Limit to 2 hours of yardwork per day until 12 weeks post-op.

✓ **Lifting Precautions**

If still painful, no lifting more than 10-15 pounds. Be mindful of avoiding excess lifting. Gradually progress, limit as needed based on pain, swelling, and fatigue.

Stretching

Continue with stretches from previous weeks. Increase reps and frequency as designated by your physical therapist.

Activities of Daily Living

✓ **Childcare***

Small children can be carried at 6 weeks post-op, depending on weight. *Refer to Section 6 for more details.*

✓ **Carrying Items**

May begin at 4 weeks post-op. Start with double arm hang, like carrying 2 grocery bags down at your side. You can also combine and carry, with one arm down like a grocery bag and another on hip. You can also carry objects close to your body to decrease strain on the repair site. Progress to single-side carry.

Exercises

Exercises at this stage will vary based on your activity level. Your physical therapist will tell you which to include in your routine and help you set goals. Once your incision has healed, you may begin participating in cardio as tolerated. At this stage, cardio may include walking, jogging, swimming, cycling, elliptical, yoga, Tai Chi, and Qi Gong. Be sure to stretch before and after exercising. If you feel significant increase in pain while doing these exercises, stop the exercise, rest, and try again with less force or intensity. If your pain persists with activity, take a break from exercising for a few hours. *Refer to exercise descriptions in Section 1.*

| Activity Level | Sets | Times Per Day |
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| Not very active | 3 sets of 5 | 3 |
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- Sit to Stand
- Ankle Pumps
- Glute Squeezes
- Seated Knee Extensions
- Heel Raises
- Shoulder Blade Squeezes
- Pelvic Floor Contraction with Breath

In addition to these, add the following:

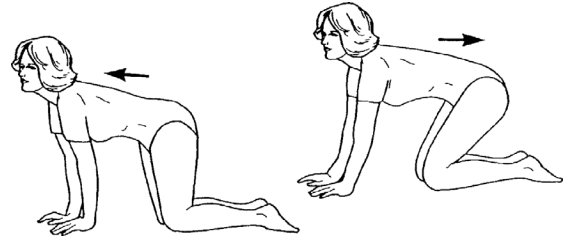
- Straight Leg Raises***

Start with your right leg straight and the opposite leg bent. Slowly raise the right leg off of the bed as you breathe out. Keep your knee straight. Lower the leg to the bed and breathe in. Repeat on other side.



Quadruped Rocking*

On your hands and knees, find a neutral spine with your abdominal muscles engaged. Gently rock forward and back.



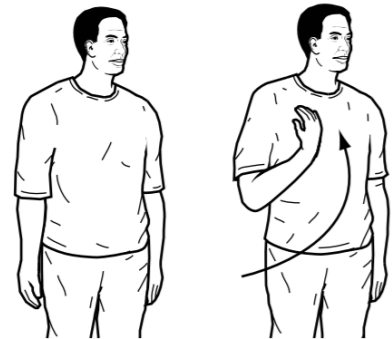
Hook Lying Bent Leg Lift*

Lay on your back with your knees bent. While keeping your abdominal muscles tight, gently raise one leg a few inches off the floor. Slowly lower leg back down. Repeat on other side.



Elbow Flexion*

Stand with your arms at your side or sit with your arm resting on a surface, like a couch or counter. With palm facing up, bend at the elbow and raise your hand up towards your shoulder and lower back down. Repeat on other side.



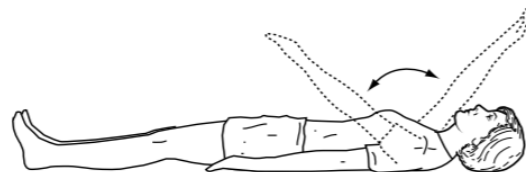
Shoulder Abduction*

Start by laying on your back with your arms at your sides. Move your right arm out to your side and towards your head as you breathe in. Return your arm to your side as you breathe out. Repeat on other side.



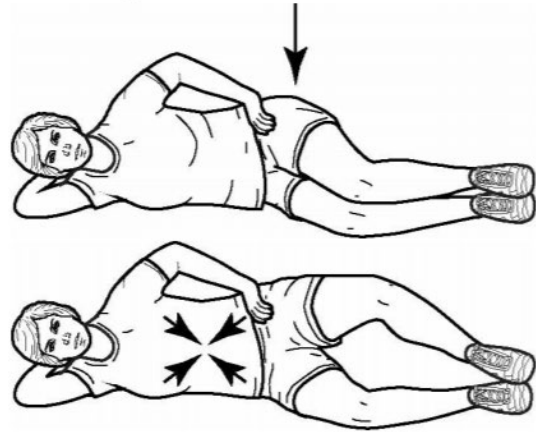
Shoulder Flexion*

Start with your arms at your sides. Lift your right arm straight up and over your head as far as possible as you breathe in. Return your arm to your side as you breathe out. Repeat on other side.



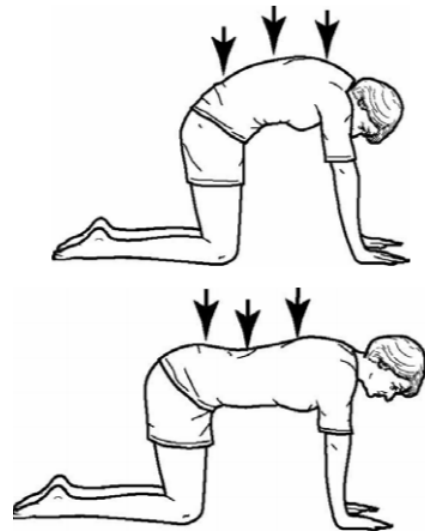
Clamshells*

Lay on your side with your knees bent and the soles of your feet in line with your spine. Keep your hips square and gently lift your top knee. Keep your hand on your upper hip to prevent it from moving back. Do this movement slowly to activate the glutes. Repeat on other side.



Cat to Cow*

On your hands and knees, inhale and gently arch your back up while tucking chin to chest. Exhale and relax your back and lift your chin. Repeat with each breath.



You may progress to the next section once you can complete this section with no increase in pain, or as determined by your physical therapist.

After Surgery: Week 8+

Remember to bring this educational guide, your abdominal binder, and completed walking log to your physical therapy appointments!

Self-Care for Healing and Recovery

✓ **Binder Use**

At 8 weeks or greater after surgery, you may wear your binder only for comfort as needed during routine activities. Continue wearing your binder during lifting or more vigorous activities, such as vacuuming or unloading the dishwasher, if you feel it helps you.

✓ **Outdoor Activity**

You can perform outdoor activities as tolerated. If you have significant increase in pain, ease your activity.

✓ **Lifting Precautions**

You may lift as tolerated using squatting method (refer to Section 1). If you have significant increase in pain, stop lifting. Maintain proper posture and head alignment. Slide object as close as possible before lifting. Move obstacles out of the way. Test before lifting and ask for help if too heavy. Tighten stomach muscles without holding breath. Use smooth movements and avoid jerking. Use legs to do the work and pivot with feet. Distribute the workload symmetrically and close to the center of trunk. Push instead of pull whenever possible.

Stretching

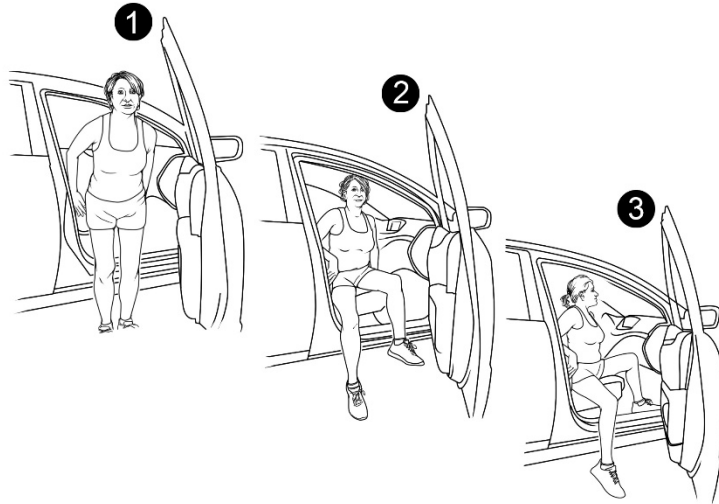
Continue with stretches from previous weeks. Increase reps and frequency as designated by your physical therapist.

Activities of Daily Living

If you have specific concerns at this stage, please review with your physical therapist so they can address your personal needs.

✓ **Car Entry**

To get in the car without putting additional pressure on your abdomen, stand facing away from the car and sit down on the edge of the seat first. Once you are seated, slowly turn your body towards the front. Reverse this movement to get out.



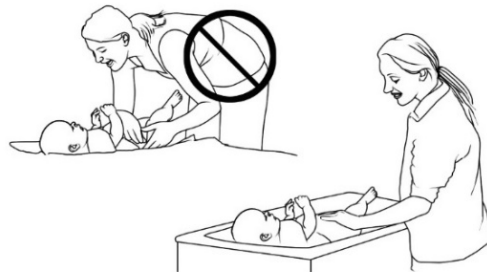
✓ **Computer Work**

Position screen and keyboard directly in front of you with screen at eye level. Use proper work and seat height. Keep shoulders back and down, wrists straight, and elbows at right angles. Use a chair that provides full back support. Add footrest and lumbar roll as needed.



✓ **Child Care**

Move child to your height to avoid bending over. Squat down to pick up child, do not bend back. Carrying children on your front places the most pressure on your abdomen. If possible, carry your child on your side. Keep your hips in alignment with your shoulder – avoid sticking your hip out to rest the baby on.



When putting a baby in a car seat, activate your core muscles to lift away from your body. Keep your back tall and straight, and avoid bending over and placing additional pressure on your abdomen.

✓ **Laundry**

To load a top-loading machine, support yourself on the washing machine. Keep one leg back behind you and keep it straight to help keep your back straight. To load a front-loading machine, avoid leaning over to reach in and out.



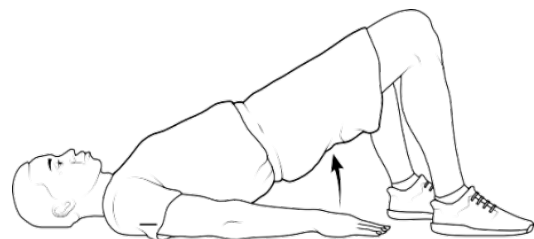
Exercises

Exercises at this stage will vary based on your activity level. Your physical therapist will tell you which to include in your routine and help you set goals. Once your incision has healed, you may continue participating in cardio as tolerated. At this stage, cardio may include walking, jogging, swimming, cycling, elliptical or yoga. Once you can complete these without pain, you may resume other forms of exercise, such as weight lifting. Continue to perform the exercises below. If you feel significant increase in pain while doing these exercises, stop the exercise, rest, and try again with less force or intensity. If your pain persists with activity, take a break from exercising for a few hours.

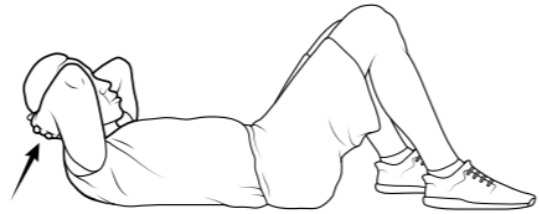
| Activity Level | Sets | Times Per Day |
|-----------------|--------------|---------------|
| Not very active | 3 sets of 5 | 3 |
| Fairly active | 3 sets of 10 | 3 |
| Very active | 3 sets of 10 | 5 |

□ **Bridging (with alternate knee extension)***

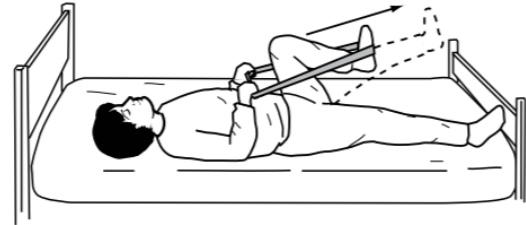
Lie flat on your back with your knees bent and pull your stomach towards your spine. Keep your stomach muscles tight and your shoulders on the floor. Lift your hips off the floor as you exhale. Hold for 1-2 seconds and slowly lower your hips back to the floor.



- ❑ **Curl Up (with abdominal bracing)***
Lay on your back with your knees bent (hook lying position) and place your hands behind your head. Lift head and shoulders when you exhale and engage lower abdominals and pelvic floor.



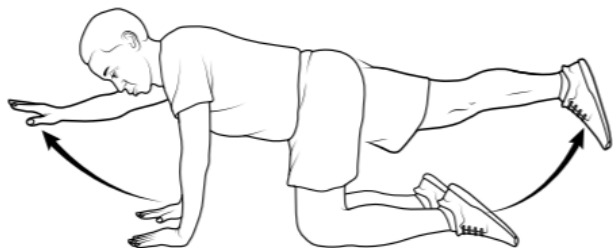
- ❑ **Leg Press (with Theraband)***
Lying on your back, position the Theraband under your feet. Bend your knees toward your chest and straighten your legs out. Slowly return to the starting position.



- ❑ **Lying Leg Lift***
Lie down flat on your stomach. Rest your forehead on your hands. Squeeze the left side of your bottom and slowly lift your left leg off the floor as high as you can. Keep your leg straight and hold for 1-2 seconds. Lower your left leg back down to the floor. May raise opposite arm as leg raises for added challenge. Repeat with opposite leg.

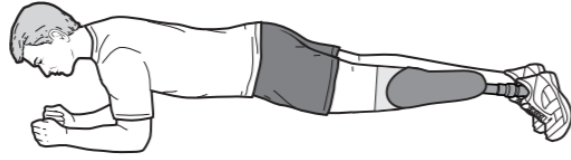


- ❑ **Quadruped Arm and Leg Raises***
Start on your hands and knees. Keeping your back straight and abdominal muscles engaged, extend your right arm and left leg out. Hold 2-3 seconds. Slowly return to the starting position. Repeat with opposite leg and arm.



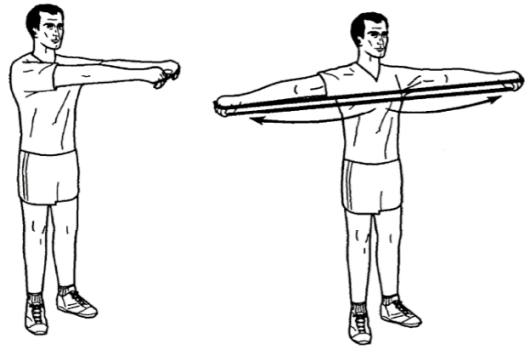
Plank*

Lie down on your stomach. Bend your elbows and keep them shoulder-width apart. Lift your body up on your elbows and knees. Keep your elbows under your shoulders and tighten your abdomen to hold your body in this position. Hold for 20-30 seconds and then relax.



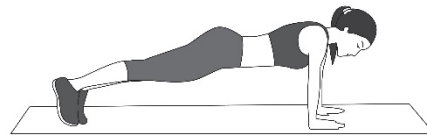
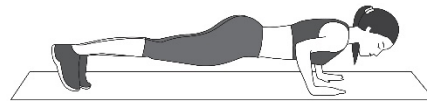
Bilateral Scapula Retraction (banded)*

Hold the Theraband in both hands in front of you. Open your arms out to the side, keeping your shoulders square and pulling your shoulder blades in towards your spine.



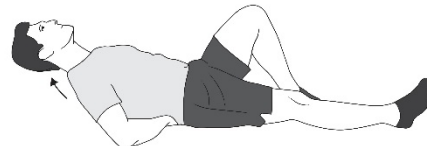
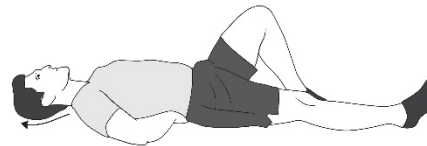
Push Up

Start in a plank position with your hands shoulder-width apart, or wider if that is more comfortable to you. Keep your core engaged and back flat as you lower your chest towards the ground.



Modified Curl-Up

Lay on your back with knees bent and hands resting under the small of your back. Straighten one leg out and lift head and shoulders slightly off the ground. Hold for 5-10 seconds and return to ground. This is a very small motion to work the abdominal muscles without straining the spine. Repeat using opposite leg.



Appendix A: Walking Log

| Date | Time Walked | Distance | Notes |
|------|-------------|----------|-------|
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Walking Log (Continued)

| Date | Time Walked | Distance | Notes |
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Appendix B: Pain Scale

Choose the face that shows how much pain you feel and use the number under each face to rate your pain. You should not be progressing with exercises if you are experiencing extreme pain or discomfort. Be sure to communicate with your care team about changes in pain.

Wong-Baker FACES® Pain Rating Scale



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Appendix C: Abdominal Core Surgery Rehabilitation Protocol Development Team

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