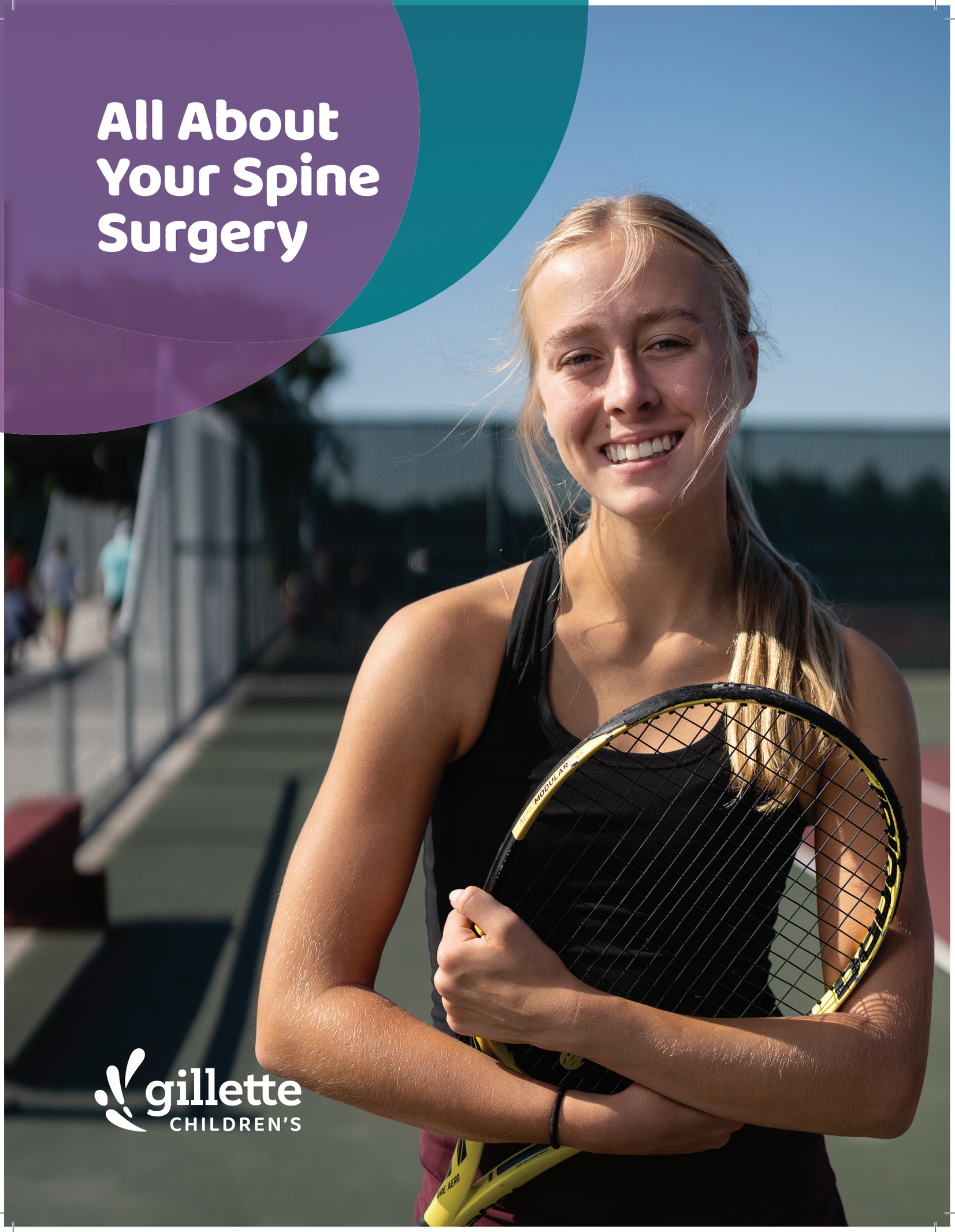
All About Your Spine Surgery



gillette CHILDREN'S

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Our Spine Team helps prepare you for surgery and answers common questions.

Welcome to Gillette Children's

Welcome to Gillette Children's, where we work to provide the best medical and nursing care for our patients. Gillette has been treating children with orthopedic conditions for over 125 years. The spine service was established in the 1940s and some of the earliest pediatric spine operations in the world were performed here. Today, we treat the vast majority of children in Minnesota with spinal conditions and perform more pediatric scoliosis surgery than any other hospital in the 5-state area.

About This Manual

This resource manual is intended to help spine patients and their families understand scoliosis. It contains information you will need while at Gillette and will serve as a guide for when you go home. The **glossary (page 19)** defines technical terms you'll be reading and hearing.

Although our patients with spine conditions range in age from infant to adult, most are children or young adults who want to read about their scoliosis and treatment. To address those readers directly, we have used the term "you" in most parts of the manual. In the parts addressed to caregivers, however, we have used the term "your child" or "your teen".

Research

Gillette is committed to providing the best, safest, and most up to date treatment options for scoliosis. As an organization, we participate in research to continue to learn and develop our techniques and share these with the scientific and patient community. Patients who agree to help us conduct this research are a very important part of this process. You may be asked to participate in a research study during your treatment process. Your participation in research is completely voluntary and would be discussed with you prior to you being enrolled.

Important Phone Numbers

Keep in mind that this manual provides only general guidelines. Your nurse or provider will review pertinent information that is specific to your care. If you have specific questions, however, be sure to ask.

If you have other questions about your care, contact us at 651-726-2845.

Main Information
From the Twin Cities
651-291-2848
Outside the Twin Cities
800-719-4040 (toll-free)

Scheduling Appointments
Patient Access
651-290-8707

Medical Questions
Urgent Questions and Telehealth Nursing
651-229-3890

To Report an Illness Before Surgery
Preoperative Nursing
651-229-3918

Billing, Insurance or Financial Assistance
Patient Accounting
651-325-2177

Child Life Specialist (Preparing Patients and Families for Surgery)
Child and Family Services
651-229-3855

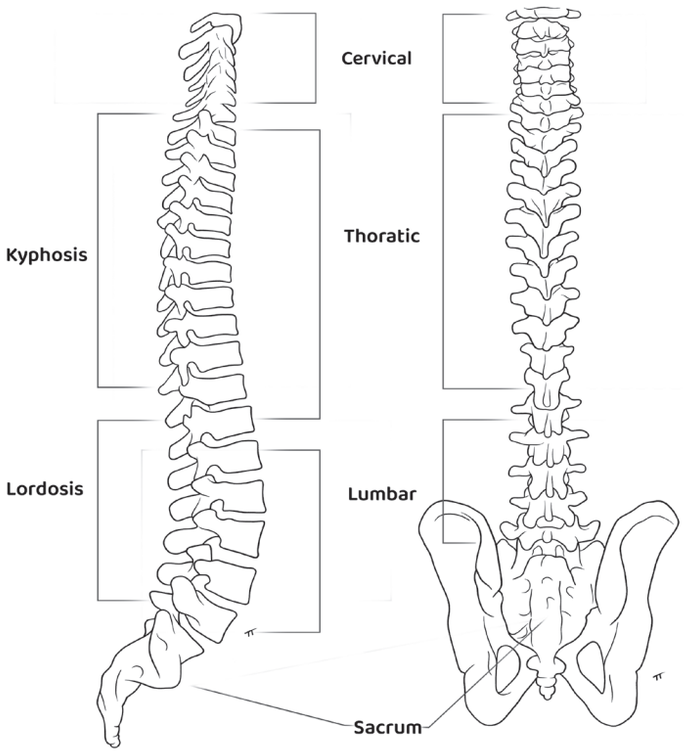
About the Spine

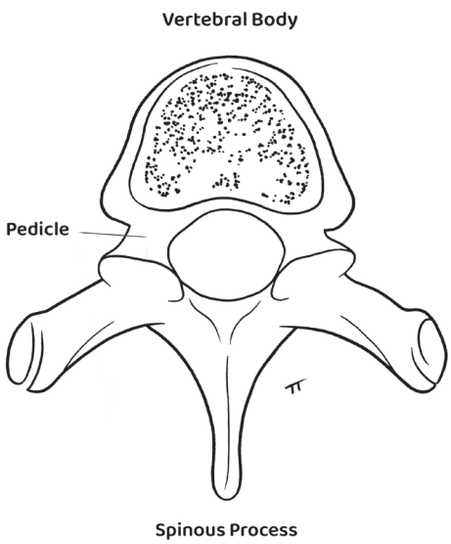
The human spine is made up of 33 bony segments called vertebrae. They fit together, forming a flexible column that supports the back and protects the spinal cord. The neck has 7 cervical vertebrae. The upper back and chest have 12 thoracic vertebrae; these are where the ribs are attached. The low back has 5 lumbar vertebrae. The last lumbar vertebra is attached to the sacrum, which is in turn attached to the pelvis. The lowest part of the spine is the coccyx, or tailbone. When viewed from behind, the spine appears straight and when viewed from the side it has natural curves. There is a natural thoracic kyphosis, forward curving, and a natural lumbar lordosis, backward curving.

What is Scoliosis?

Some people have extra curves in their back that curve side to side and rotate. This 3-D rotation and side to side curvature is called scoliosis. On an x-ray, the spine of a person with scoliosis looks like an "S" or "C" instead of a straight line. Providers use a special measurement tool to measure the angle of the curve, called a Cobb angle. A slight curve may be normal. Scoliosis is diagnosed when the Cobb angle is 10 degrees or greater. Idiopathic Scoliosis is categorized based on the age at which it begins:

- **Infantile (IIS) less than 3 years old or less**
- **Juvenile (JIS) 4-9 years old**
- **Adolescent (AIS) 10 - 18 years old**





Why did I get scoliosis?

The exact reason why your spine curved remains unknown, that's what "idiopathic" means – that means we don't know why it occurs. We know there is some basis in genetics. A recent theory involves the front of the spine growing faster than the back of the spine, causing a rotating and twisting of the spine.

You did not do anything to cause your scoliosis. It is not from wearing a heavy backpack; it is not from a "wrong" sleep position; it is not from having poor posture. There was nothing you could have done to prevent getting scoliosis.

Scoliosis is more common than you might think, too. Approximately 3% of people have scoliosis.

Signs, Symptoms and Diagnosis

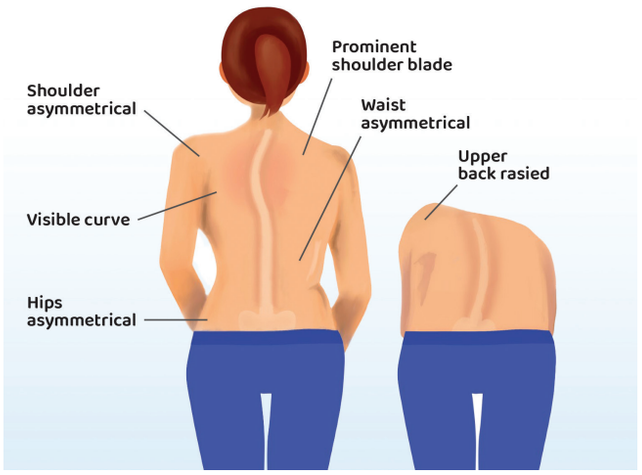
Most people with scoliosis do not report pain; those that do report pain, typically report only mild pain. Severe or constant pain is not a typical symptom of scoliosis.

You or your parent may have noticed one or more of the following changes in your appearance:

- **Chest shifted to one side**
- **One shoulder blade more noticeable than other**
- **Asymmetry (unevenness) of the waist**
- **Clothes fit unevenly**
- **One shoulder is higher than other**
- **One hip is higher than other**
- **Asymmetry of front torso**

You may not have noticed any changes in your appearance, but your healthcare provider did when you had your check-up. The diagnosis of scoliosis is made based upon physical exam and x-ray of the spine.

Your provider may have asked you to do a forward bend exam, which can show spine abnormalities. This is called the Adam's Forward Bend Test.



Why do we treat scoliosis?

Most patients with mild scoliosis at skeletal maturity (when the spine is no longer growing) will lead a normal life with no limitations on activities, including sports. However, for patients with more significant curves, there is a higher likelihood that the curve will continue to progress into adulthood. Although it will progress slowly (0.5-1 degree per year), throughout a lifetime this can add up to a significant curve which can be more difficult to correct and have an impact on quality of life.

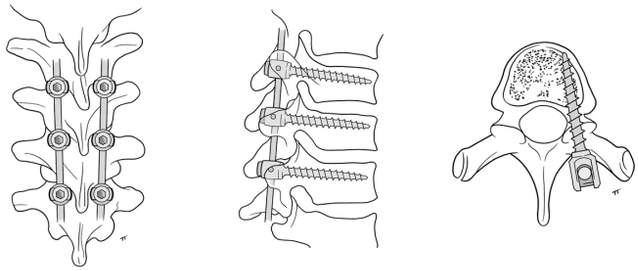
For significant curves, surgical intervention may be the best option. The decision to have surgery for a curved spine is one that requires discussion with your spine surgeon about your specific curve and how much growing you may have left. It can be a challenge to think about having surgery when you may not be experiencing any discomfort or limitations due to the curve in your spine. But by operating when someone is younger, the curve is smaller and more flexible. That means we can operate on the smallest section of the spine, preserve as much motion in the spine as possible, and have quick and effective healing.

About Surgical Procedures

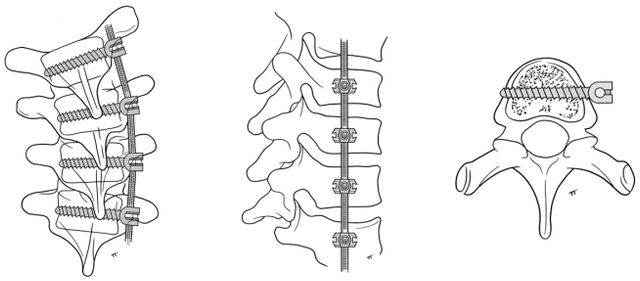
When spinal curves progress to a more significant degree, surgery may be the best option. There are several different types of spine surgery.

Fusion Spine Surgery: Spine fusion involves joining two or more individual bones to make one unit.

Posterior Fusions: These are the most common scoliosis surgeries. Spine surgeons correct most curves by going through a patient's back. They then attach screws or anchors to the individual bones of the curve, connect the anchors with smooth rods, and then move the spine into a more straight position.



Posterior Fusions (above)



Vertibral Body Tethering

Anterior Fusions: Spine surgeons can stop some curves from progressing by fusing the front of the spine. A spine surgeon works with a general surgeon to open the chest or abdomen through the side. The surgeon may insert screws and a smooth rod to hold the spine in place while fusion occurs.

Vertebral Body Tethering: Recent advances in the treatment of AIS include strategies that harness the body's growth to correct the spine deformity without the need for spinal fusion. In this surgery, a spine and a general surgeon work together to go through the chest or abdomen, placing screws in the vertebral bodies on the convexity (outside) part of the curve and connecting the screws with a strong rope (tether). The tether is tensioned to slow down growth on the curve convexity while allowing for continued growth on the concave (inside) part of the curve. As such, the body's natural growth allows for curve correction with time. Because the success of the procedure relies on spine growth after the procedure, patients need to meet very specific criteria to be a candidate for this surgery.

Prepare for Surgery

Your surgeon will meet with you before surgery to go over risks and benefits, discuss the specific levels of your surgery, and answer any specific questions you might have.

Exercise Before surgery, take part in regular physical activity, such as walking. Physical exercise tends to improve bowel function and helps you stay as healthy as possible. Additionally, if you're physically active before surgery, you'll find it easier to regain your abilities afterward.

Diet Protein is very important for healing. We suggest increasing your consumption of protein six weeks before surgery. If you're concerned about weight gain, trade servings of protein for servings of carbohydrates. This diet should be continued following surgery as well. **See page 14** for more information.

Pre-op History and Physical Within 30 days of your surgery, you must see your primary care provider for a pre-operative (pre-op) History and Physical. This is to make sure you are healthy enough to undergo surgery. You will also have blood taken to check your hemoglobin. This measures how much oxygen your blood can carry, and will be a measurement we will also check after surgery. This is required of all patients undergoing surgery at Gillette.

Tour Gillette We offer (and encourage!) our patients and their families to take a tour of Gillette before surgery. This is not only a tour of the building; our child life team will discuss various coping mechanisms and resources available to make your stay as comfortable as possible. They will also assess what the patient and family may be most anxious about regarding their surgery and hospital stay, and use various techniques to lessen this anxiety as much as possible. We recommend this visit within 2-3 weeks before surgery.

Medications Please do not take any NSAID medication within 1 week of your surgery (ibuprofen, Motrin, Aleve, naproxen). These medications alter the way the blood clots and can increase the risk of bleeding during surgery. You can take Tylenol if needed.

The night before surgery, you must wash your entire body and hair with regular soap. Use clean towels to dry off. Then, sleep on clean (freshly laundered) sheets and in clean pajamas. This is one of the many steps we take to decrease your risk of infection.

Day of Surgery

Check-In You will be instructed to arrive 1.5 hours before your scheduled surgery time. Please take the elevator to the 3rd floor and check-in at the desk.

Pre-Op Area When you are called back, you and your caregiver will be led to your room inside the pre-operative area. You will change into a gown and special warming wrap. You will meet the pre-op nurses who will ask questions and measure your pulse, oxygen level, blood pressure and temperature. These measurements are known as your "vitals." After that, you'll discuss with the nurses if one caregiver will go with you to the operating room (OR) while you fall asleep for surgery. This caregiver must wear a special cloth covering ("bunny suit") over their clothes to keep the OR clean and free from germs. They will "suit up" in your pre-op room.

Meet Your Care Team

Before surgery, you will meet the care team who will work to keep you safe and comfortable before, during, and after your surgery.

Your **pre-op nurse** is a registered nurse (RN) who will help you get ready for surgery once you arrive at the hospital.

Your **anesthesiologist** is the doctor who will help you fall asleep for surgery, make sure you are safe, breathing well, and kept warm during surgery. They will also help manage your pain after surgery with IV pain medication. In the pre-op area, the anesthesiologist will develop a plan with you and your family for keeping you comfortable with different medication options.

Your **nurse anesthetist** works directly with the anesthesiologist and is with you at all times during surgery to make sure you are safe, breathing well, and kept warm during surgery.

Your **surgeon** will see you before your surgery to answer any questions you may have. They will also use a purple marker to mark the area you will be having surgery to make sure that everyone agrees on what part of the body will be operated on.

The **operating room (OR) nurse** is the RN who will be with you during your surgery. They help the surgery team and will be calling your caregiver with updates throughout the procedure.

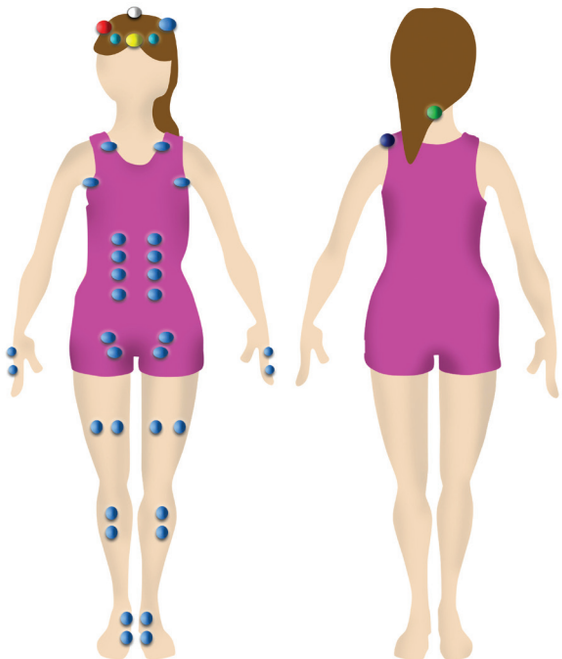
During Surgery

After you drift off to sleep, a tube will be inserted into your windpipe to help you breathe during surgery. Then the team will continue to prepare you for surgery by inserting a catheter into your bladder, inserting more IVs, and placing multiple stickers and small needles (similar in size to acupuncture needles) into muscle groups throughout your body. These stickers and small needles allow us to monitor your spinal cord during surgery. After that, we will position you for surgery, clean your skin again and begin the procedure.

Your caregivers must stay in the Regions building during your surgery so the OR nurse can call them with updates as your surgery progresses.

For Caregivers

Please keep your phone alerts turned on so you can hear it ring when the nurse calls to update you. The OR nurse will call every 1.5 hours with updates on the procedure.



Location of the spinal cord monitoring stickers

After Surgery

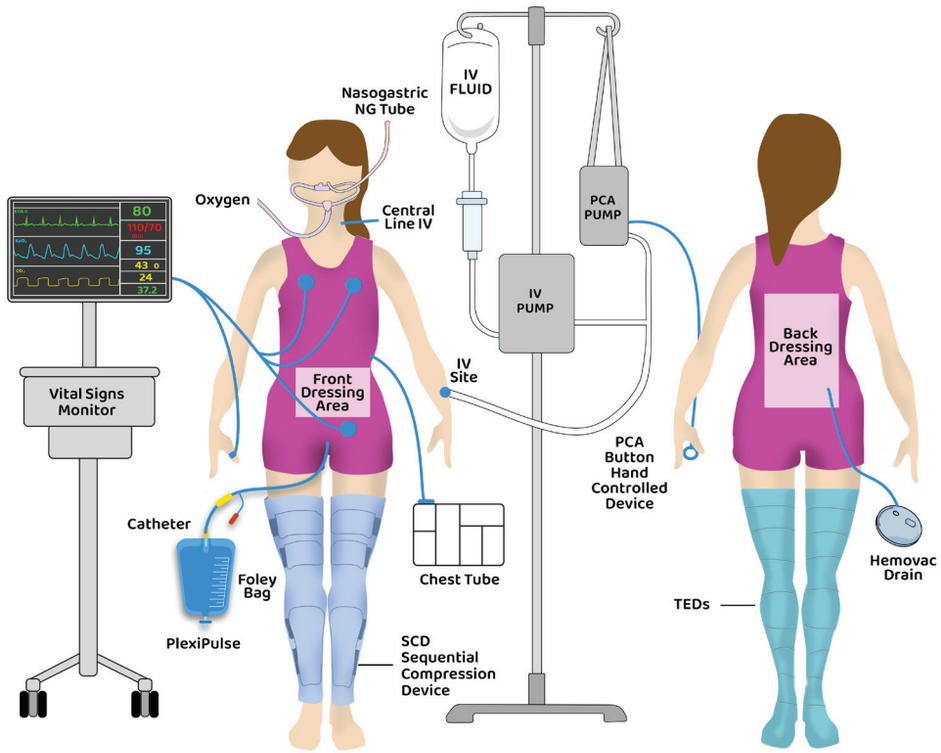
After surgery, the medications that keep you asleep will be turned off and the breathing tube will be removed. You will then be taken to the post-anesthesia care unit (PACU) to continue waking up and start receiving pain medication. Your nurse will invite a caregiver to join you when you are ready. Hospital policy limits the number of visitors allowed in the PACU, but once you move to the orthopedic surgical unit (OSU), all of your visitors can see you.

When you are ready to leave the PACU, you will be taken to the orthopedic surgical unit. This is where you will spend the rest of your recovery in the hospital. You will have a private room with a couch that turns into a bed for one of your caregivers to stay the night. Hospital policy states that no visitor under the age of 18 years old is allowed to spend the night at the hospital.

After surgery, your body is at risk of certain complications. We'll do many things to reduce those risks. A nurse will be checking on you frequently (every 1-2 hours) to help you reposition and give you medications. Your nurse will also check your vitals and check your arms and legs for color, movement, sensation (sense of touch), circulation (blood flow) and pulse.

Resuming a Regular Diet After surgery, your care team will listen for bowel sounds through a stethoscope placed on your stomach. You won't be allowed to eat or drink anything until you have bowel sounds. Bowel sounds tell us that your digestive system has "woken up" and will be able to process food. If you start to eat too soon after surgery, you can feel nauseous. After you have bowel sounds, you may begin taking ice chips or small sips of water. We'll gradually add to your diet as you're able to tolerate food. During surgery and before you resume eating, your IV will provide the fluids your body needs. As your recovery progresses, you'll begin eating solid foods. Once you're taking fluids, solid foods and pain medicines by mouth, we can take out your IVs.

Surgical Dressing Your nurse will check your surgical dressing (a large band-aid that covers your incision) regularly. We will remove it after you shower on the



second or third day after surgery. You'll notice small strips of tape called Steri-Strips, or one long piece of tape called Prineo tape, which holds your incision together. We will put a new dressing over your incision and keep it covered while you are in the hospital. The Steri-Strips or Prineo tape will fall off about one to two weeks after it is applied; you should not pull it off, let it fall off on its own. The stitches in your back are under your skin and will dissolve on their own after about three weeks. You do not need to have any stitches removed.

Medical Equipment

As you recover from surgery, you might need some or all of the equipment pictured here. Each piece plays a role in helping you heal.

An **incentive spirometer** is a breathing aid. Used with deep breathing and coughing exercises, it helps keep your lungs healthy after surgery.

A **patient-controlled analgesia** (PCA) pump is a machine that delivers pain medicine during the first day of your recovery.

An **intravenous (IV) pump** delivers the fluids that your body needs after surgery. We attach a bag of IV fluid to a tube that's inserted into a vein in your hand, arm or foot.

A **vital-signs monitor** is a machine that keeps track of your heart rate and breathing status. We attach the monitor to your chest with small sticky patches and tape a wire to your finger or toe. A red light on your finger tells you that the monitor is working.

Oxygen, used after surgery, makes it easier for you to breathe. Sometimes an oxygen mask covers your nose and mouth or is placed next to your face. In other cases, a small tube (called a nasal cannula) rests under your nose.

A **sequential compressing device (SCD)** increases circulation in the legs and helps prevent blood clots. You'll wear soft leg or foot wraps. The machine pumps air into air pockets in the wraps, then releases it.

Braces (orthoses) support and protect your back. You might need to wear one after surgery.

A **surgical drain (Hemovac)** is a tube that runs from your incision to a plastic container. It collects fluids and blood from around the incision and it's removed when drainage decreases. This will be removed while you are in the hospital before you go home.

A **small chest tube** is inserted into the space between your lungs and ribs. It helps to keep your lungs healthy and inflated after surgery. This will be removed while you are in the hospital before you go home.

A **Foley catheter** is a small tube, inserted into your bladder that drains urine after surgery. Your nurse will check it often.

Recovery Goals

Medication You have multiple pain medications available to you **see page 21 (Appendix 1)** for details on how each medication works**.** These medications may include a Valium, Toradol, Oxycodone, Vistaril, Tylenol, Celebrex and Gabapentin. Please let your nurse know if your pain is not well controlled.

After surgery you will have a PCA (patient-controlled analgesia) pump as part of your pain management plan. A PCA is a pump that contains an opioid pain medication that continuously delivers medication to you in your IV. If you are having pain despite the constant amount, there is a button that can be pushed to deliver an extra dose of pain medication. As a safety feature, the button can only deliver a dose every few minutes. The button can be pushed by the nurse, by the patient (when appropriate) or by a caregiver after a brief teaching session by the nurse. It is important for caregivers not to hit the button while a patient is sleeping. Most patients transition to pain medicine by mouth on the first day after surgery. The IV pain medicines are then turned off.

Pain Control Pain is expected and part of healing and recovery. Our goal is to make you as comfortable as possible. We will often use a number scale to rate pain and help you and your care team decide what level of pain medication is appropriate. We need to make sure you are alert and breathing safely, but also comfortable. It may not be possible for us to take away all of your pain; we need to keep you safe.

We will also use ice packs and heat packs to help with comfort after surgery. **See page 30 Holistic Health and Wellness (Appendix 6)** for other forms of pain control and relaxation techniques offered at Gillette during your stay.

Movement On your first attempt out of bed, two staff members will help you safely and slowly move from laying down to sitting up. First, you will sit at the edge of the bed. **It is normal to feel a bit lightheaded, dizzy, or nauseous from lying down for so long, the pain medications, and from blood loss during surgery.**

Activity Restrictions To ensure your bones heal and fuse together as best as possible, we place restrictions on some movements for a brief period of time after surgery. These include no running, no jumping, no bending or twisting your spine, and no lifting more than 10 pounds. We will help you practice how to move safely and comfortably after surgery.

Post-Operative Goals

Day of Surgery

- Manage pain effectively.
- Sit at edge of bed and stand up.
- Slowly advance diet.

Day 1: Post-Operative Goals (first day after surgery)

- Manage pain effectively.
- Stop PCA medications and transition to oral pain medications.
- Walk 5 laps around the nurses' station, 5 separate times.
- Remove bladder catheter.
- Advance diet.

Day 2: Post-Operative Goals

- Keep managing pain effectively.
- Walk ten laps around the nurse's station three separate times.
- Practice stairs.
- Remove drain and/or chest tube. You will remain in bed with family at your bedside while this is quickly removed. Everyone describes the removal sensation differently, but the most common report is, "it feels weird."
- Take a shower.
- Get x-rays.
- Work on having a bowel movement.
  Inactivity, eating less and pain medication can slow down your intestines. Bowel medication such as an enema or suppository may be given today.
- Most patients are ready and able to go home today! Your nurse will keep you updated.

For more detail, **see page 26 AIS Surgery Roadmap (Appendix 4).**

For Caregivers

Spine surgery is a significant event in you and your child's life. It can be difficult to see your child in pain during recovery. The information on this page explains how you can help prepare to bring your child home after surgery. We are always available to answer any questions you have.

After surgery, the first few days at home may be challenging. Many parents compare it to having a newborn at home. Your child will likely need assistance with many daily activities including using the bathroom, dressing, personal hygiene and getting around the house. You will also be responsible for their pain medications. It is important to reposition your child frequently, about every 2 hours, to prevent pressure wounds and skin breakdown. Many patients become uncomfortable when lying in one position and may ask you to help them reposition more frequently. Pillows, blankets, or towels rolled into a log shape can help to reposition your child at home.

The frequent needs of your recovering child can be a lot to take on. Having support from family and friends to help care for your child and give you rest is important. Plan to have a few family members or friends scheduled to stay with your child so you can take a break in the first couple of weeks at home or ask for meals that are easily stored and cooked.

If you need the Family Medical Leave Act (FMLA) paperwork filled out for your employer, please inform your surgical team before surgery. This ensures your employer has the necessary information about your absence to help your child recover.

Home Recovery Preparation

- **Sleeping:** If your child's bedroom is up or down any stairs, consider having them sleep on the main floor for the first few nights at home. Stairs are safe after surgery but can be uncomfortable for the first few days.

- **Showering:** Standing for prolonged periods in the shower can be uncomfortable. Place a chair or stool in the shower your child can sit on. A lawn chair or folding chair with a towel on it will be waterproof and safe from slipping.
- **Meals:** Cook meals that can be frozen or reheated easily.
- **Task notes:** Have a notebook to keep track of pain medication timing and dosing. Some families set an alarm on their phone as a reminder to take medications at the correct time.

If you are a Gillette patient with urgent questions or concerns, please contact Telehealth Nursing at 651-229-3890.

Returning Home

Managing Pain Pain is to be expected and is a normal part of healing after surgery. Pain is different for everyone, but patients often report the first three days at home as being the most challenging; then things get much better. You can expect ups and downs with pain relief. It's common to have times when pain increases—especially when activity increases, too.

Pain During the Trip Home About an hour before leaving the hospital, our nurses will recommend you take a full dose of pain-relief medicine. If you have a long drive and pain relief is needed, take medicine as prescribed during the trip. You also might want to stop often. Repositioning promotes good circulation and comfort. Be sure to wear a seat belt!

Pain at Night You might notice more pain at night. When we lay down to sleep at night, our brains are no longer distracted by the world around us and can begin to focus more on any discomfort we are feeling. Using calming techniques –breathing, meditation, etc., in addition to pain medications can help with pain at night. **See page 25 Relaxation Techniques (Appendix 3)**, for more ways to relax muscles and provide comfort.

Pain-Relief Medicine We use multiple pain-relief medications to help manage pain after surgery. While it may seem like a lot of medication, we have multiple options to help manage different types of pain. The medications are safe to be taken as prescribed, including if you are instructed to take two medications together.

Be Careful With Medicines! Do not use nonsteroidal anti-inflammatory (NSAID) medications if you've had a spinal fusion. These medicines can affect bone healing. They include ibuprofen (Motrin and Advil) and naproxen (Aleve). Please avoid these for **3 months** after surgery, unless specifically told otherwise by your provider. Many over-the-counter medicines contain acetaminophen, so always read labels before taking them.

Other Pain-Relief Methods Music, stories, books, television, video games and other activities can help distract you from pain. Massage or a soothing touch—especially on areas of the body that are pain-free—can help as well. **See page 25 Relaxation Techniques (Appendix 3)**, for more ways to relax muscles and provide comfort.

If Pain Increases Swelling, activity, anxiety, infection and poor sleep can increase pain. If pain is worse than usual, take another dose of pain-relief medicine if enough time has passed since the previous dose. If you aren't already using it, try stronger pain-relief medicine, such as narcotics prescribed by your health care provider. Never take more medicine than your doctor prescribes!

You might have pain in your legs, back, chest or ribs as you recover. Spine surgery is a significant change for your body. When we move the bones of the spine, we also move the parts of the body connected to the spine including shoulder muscles and bones, stomach muscles, etc.

If pain worsens, first review your daily activities. Discomfort often is your body's way of telling you that you need to rest. Increase activities gradually. Anticipate increases in activity and take pain-relief medicine an hour before exercising, standing or walking. It's better to use pain-relief medicine and be active than to limit activities to avoid pain.

When to Call Telehealth for Pain Concerns If any of the following symptoms are occurring after using pain medications as prescribed, trying the pain relief strategies outlined above, and having a recent bowel movement, please call Telehealth for further evaluation and guidance:

- Difficulty breathing or unable to hold a conversation
- Change in mobility (Ex: You were walking short distances, but now aren't because of pain)
- An ongoing fever of 100.5° Fahrenheit, 38° Celsius or higher

Discontinuing Pain-Relief Medicine After being home for 2 to 3 days, you should begin to gradually wean off of the strong narcotic pain medication. By day 7 at home, you should no longer need Oxycodone, Valium or Vistaril. You should continue to take Celecoxib and Tylenol as prescribed. Before going home, nursing or pharmacy will review your specific plan to discontinue pain-relief medicines. **See page 21 your Medication List (Appendix 1).**

Mobilizing and Repositioning Once home, you will spend the majority of your time resting. Repositioning frequently (about every 2 hours) reduces your risk of pressure wounds forming on the skin. We will practice repositioning with you and your caregivers while you are in the hospital.

For Caregivers

At Gillette, we know narcotic pain medications can cause addiction. We follow the guidelines set by the State of Minnesota and prescribe the lowest amount of medication necessary to help recovery from a procedure. If you are concerned about your child or anyone in your life having access to pain medication or are concerned about addiction potential, please discuss these worries with your surgeon as soon as possible.

For Caregivers

You will play an important role in helping to reposition, mobilize, and motivate your child to move after surgery. Being involved and asking questions while you are in the hospital will help you to feel more comfortable with these tasks once you're home. Your child will likely need frequent repositioning, help with toileting, hygiene, and medication management.

It is also very important that you continue to walk multiple times throughout the day. The recommendation is to walk a short distance, such as to the kitchen or bathroom, at least once every 2 hours during the day. This will keep your muscles strong, prevent stiffness, and promote healthy lungs after surgery. **See page 23 How to Move Safely after Surgery (Appendix 2).**

Caring for Incisions and Minimizing Scars After you have been home for 24 hours, you may remove your dressing on your incision. There will be Steri-strips or Prineo mesh tape over your incision. This should be left in place and allowed to fall off on its own, do not pull it off. If edges begin to roll up and are bothersome, the loose edges may be trimmed with scissors. You do not need to put a new dressing or bandage on.

Avoid submerging yourself in bathtubs, pools, hot tubs, whirlpools or lakes until your doctor says it's OK to do so (at least 6 weeks after surgery, when your incision has healed). If water seeps into your incision, it could cause an infection. You may, however, let soapy water run over your back. You should shower, or use a wet cloth, to wash your body at least once every two days. Gently pat your incision dry, using a clean towel. Avoid rubbing or scrubbing your wound. It is safe to wash your hair.

Watching for Infections Check the surgical incision daily for signs of infection. A healing incision might look pink, but it shouldn't be inflamed or deep red. Symptoms of an infection may include:

- Pain, warmth, redness, draining or swelling at the incision site
- An ongoing fever of 100.5° Fahrenheit, 38° Celsius or higher
- Numbness, tingling or weakness in your legs (numbness of the skin around the incision is normal)

Minimizing Scars Do not use any lotions or creams on your incision unless approved by your provider. Typically, scars remain raised, red and firm for eight weeks. After a year, they usually become softer, paler and flatter. To reduce scarring, shield your incision from sun exposure for a full year.

Diet It is common to have less appetite for a few weeks after surgery. The pain medicine can decrease your appetite. Also, you are not being as active, so the body does not need as much food for energy. It is important to try and eat balanced, small meals, or healthy snacks throughout the day. Food is very important to help your body heal well and quickly.

A good diet helps minimize issues — such as constipation and other intestinal problems — that are sometimes associated with surgery. For example, regularly eating a high-fiber diet is helpful. To avoid gas and bloating, increase the amount of fiber in your diet gradually. The following foods are good sources of dietary fiber:

Cereals: Grits, oatmeal and processed cereals like Cheerios, Cracklin' Oat Bran, Fiber One and Wheaties Breads: Bran muffins and whole-wheat, cracked-wheat, rye or multi-grain breads

Grains: Barley, buck wheat, bulgur, cracked wheat, rolled oats, whole-wheat pasta and brown/wild rice

Legumes: Black beans, garbanzo beans, kidney beans, lentils, navy beans, pinto beans and white beans Nuts/ Seeds: Almonds, coconut, peanuts, popcorn, pumpkin seeds, sunflower seeds and walnuts

Fresh/dried fruit: Apples, apricots, avocados, berries, cherries, dates, grapefruit, grapes, kiwi, mangoes, melon, nectarines, oranges, papayas, peaches, pears, pineapple, plums, raisins, rhubarb and tomatoes

Vegetables: Asparagus, beets, broccoli, cabbage, carrots, celery, corn, eggplant, green beans, lettuce and leafy greens, onion, parsnips, peas, potatoes, spinach, sweet potatoes and zucchini

Hydration Drinking plenty of fluids causes the intestine to contract, moving stool through the large intestine. Water and fruit juices are especially beneficial. Be sure to drink six to eight glasses of water a day. Water is the best option. If water is not your favorite, try adding a water flavoring.

Fruit juices don't have fiber, but they have components that can help manage constipation. Papaya, peach, pear and prune juice are good choices, but limit yourself to 4 to 8 ounces of fruit juice each day. To avoid constipation, limit milk and dairy products to 3 to 4 servings each day.

If you're drinking more than 16 ounces total of soda or coffee per day, try to cut back. High amounts of caffeine intake can delay healing as well. Be aware of your caffeine intake before and after surgery and use it in moderation.

Bowel Management Constipation is very common after surgery and can be a significant source of discomfort. The anesthesia, pain medications, and lack of activity all contribute to the gut moving slower which results in constipation. There are many methods to manage constipation. Keep in mind that bowel management is different for everyone.

The goals of bowel management include:

- Emptying the lower bowel at regular intervals
- Preventing constipation
- Preventing pain and discomfort
- Promoting independence

While you are in the hospital you will begin taking three medications by mouth, Senna, Miralax, and magnesium hydroxide, to help promote gut movement and soft stool. In the hospital, you may require a suppository or an enema to help promote bowel emptying. These medications are inserted into the rectum. Coffee and caffeine can also help promote bowel movement, but high amounts of caffeine intake can delay healing. Be aware of your caffeine intake before and after surgery and use it in moderation.

Once you are home you will continue to take the oral medications every day while you are still taking narcotic pain medication. If you go 48 hours without having a bowel movement, it is recommended that you use a suppository to help promote bowel emptying. If that is unsuccessful, it is recommended that you use an enema. Both suppositories and enemas can be purchased over the counter at any pharmacy, Target or Walmart.

If at any time you are having significant abdominal bloating, discomfort or are vomiting when trying to eat, please call our 24-hour Telehealth Nurse Line for assistance. If you develop loose stools, stop taking the Senna and Miralax until symptoms subside.

It's easier to have a bowel movement when you're sitting, rather than lying down. If your feet don't touch the floor when you sit on a toilet, put a box or footstool under them so that your knees are higher than your hips. This squatting position helps promote bowel emptying.

When to Call Gillette

For urgent questions or concerns: Telehealth Nursing, 651-229-3890. We can take your call 24 hours a day. You can also contact your local health care provider or urgent care center if needed.

Be sure to call us right away if the following situations occur:

Incision

- Your incision opens in any way
- Your incision has drainage or increasing redness of the skin around the incision
- You have questions about caring for an incision

Pain

- Pain is severe and unrelieved with rest, ice or medicine
- You develop calf pain, swelling, redness or tenderness
- For no apparent reason, your pain becomes severe after a fairly long period of comfort
- Your pain gets worse and there is new redness, swelling or thick drainage in the area of surgery

Other Symptoms

- Abdominal pain or distention, vomiting or diarrhea
- An ongoing fever of 100.5° Fahrenheit, 38° Celsius or higher
- Chest pain or shortness of breath
- Throat irritation or severe pain
- Pain or burning when urinating
- Tingling, weakness or numbness in arms or legs that doesn't go away after you change positions
- An unusual headache
- A bowel or bladder problem

If you are a Gillette patient with urgent questions or concerns, please contact Telehealth Nursing at 651-229-3890.

Tips for Daily Life

Many activities during the day might be uncomfortable and difficult to do without twisting or bending. Ask for help if you need assistance, and follow these tips.

Personal Grooming

If your sink is lower than your waist, kneel on the floor or a low footstool in front of the sink.

- If your sink is waist level or higher, support your upper body with a bent forearm. Place one leg slightly behind you.
- Wash your hair while standing or sitting in a shower.
- Use a bath mat or slip-resistant strips on the shower floor. Make sure the floor is dry before you step onto it.
- If you must wash your hair at a sink, use a spray nozzle to avoid bending forward.
- To avoid twisting and bending, use soap-on-a-rope, a long-handled scrub brush, or a hand-held shower nozzle to extend your reach.
- The most difficult areas to wash, without bending forward, are your legs and feet. When washing your legs and feet, or putting on socks and shoes, use a footstool. Or cross one foot over the opposite knee.
- When sitting on a toilet, keep your back tall. Avoid twisting as you wipe.

Dressing

- While you're recovering from surgery, avoid using bottom drawers or closet floors to store your clothes.
- Before dressing, gather the clothes you plan to wear (including socks and shoes), so you don't have to make multiple trips to your closets and drawers.
- Select comfortable, loose-fitting clothes and slip-on shoes.
- Wear button-front shirts, or put your arms through the sleeves of pullovers before you draw them over your head. As much as possible, avoid twisting and bending.
- For girls, sports bras can be challenging to put on because they require you to lift and move your arms and shoulders. Our patients have found that front-clasp or back-clasp bras are most comfortable and easiest to take on and off.
- Sit on the edge of a bed or chair to dress.

Driving

- You should not drive if you are taking narcotics or Valium for pain.
- If you drive, you may resume doing so as soon as you're comfortable and certain that you can react quickly by braking or swerving. Practice driving in a long, quiet driveway or an empty lot at first.
- On long trips—whether you're the driver or the passenger—stop every one to two hours and walk around for 5 to 10 minutes.

Frequently Asked Questions

Q: Will I be able to do everything after surgery that I did before surgery?
A: Immediately after surgery, there are activity restrictions to ensure that the bones fuse and heal successfully. Most of these restrictions are temporary, and we will slowly increase your activity over the few months after surgery. You and your provider will discuss this topic at each appointment. You may have sport-specific recommendations. **See page 28 Return to Activity Timeline (Appendix 5).**

Q: Should I do something special with my hair before surgery?
A: If you have long hair, you might want to braid it or put it in a ponytail. You probably won't feel like combing your hair the first few days after surgery. Right before surgery, you must wash your hair with the antibacterial shampoo given to you in your pre-op shower kit.

Q: When may I go back to school?
A: Most patients are ready to go back to school part-time—that is, for a couple of hours a day—about two weeks after surgery, and full days by three weeks. In general, when you're able to control your pain with Tylenol, you're probably ready to return to school. Depending on the number of books you carry, how much they weigh and the limitations on what you can lift, you might need to arrange for help carrying books.

Before discharge from the hospital, you will receive:
- Written request to have more time to go from class to class (by leaving class five minutes early, you can get to your next class when the halls are empty)
- Recommendation about gym class or sport participation

Q: When may I go swimming?
A: That depends on your particular surgery and recovery. Typically around 6 weeks after surgery (after your first post-op appointment), you may start to submerge your incision. Do not submerge your incision in any standing water before getting approval from your provider.

Q: How much weight may I lift after surgery?
A: Initially, you should lift no more than 10 pounds for the first 3 months after surgery. Restrictions depend upon the site of your incision and the type of lifting you're doing. Changes in how much you can lift will be discussed at each follow-up visit.

Q: Will I set off metal detectors after surgery?
A: No, your implants will not set off metal detectors. You do not need a card or documentation to prove you have any type of metal implant in your body.

Q: Can I have an MRI or CT scan in the future with my implants?
A: Most of the implants we use are MRI and CT compatible, meaning it is safe to have them in your body and have these imaging tests done. If they are not compatible your surgeon will inform you.

Q: (For girls only) Is it true that I might get my menstrual period when I have surgery?
A: It's possible. It's also possible that you might skip one or more menstrual cycles after surgery. Surgery is a stress on the body, which can trigger a cycle to happen and can also cause the body to skip a cycle. Both are normal, safe and temporary.

Q: Will having surgery have an impact on being pregnant or having kids in the future?
A: No, having a fused spine will not interfere with your ability to have kids.

Support and Resources

Scolios-Us
bracingforscoliosus.org

Curvy Girls
CurvyGirlsScoliosis.com

MN chapter Email: MN@curvygirlsscoliosis.com
Instagram: cgscoliosis

Scoliosis Research Society
srs.org/patients-and-families

Gillette Scoliosis group
Join the Gillette Scoliosis group on Facebook! This group provides support, advice, and information to people who have scoliosis and to their families.

Interested in learning more?
Check out the book "Idiopathic Scoliosis," authored by Gillette spine experts and offered by Gillette Press!

Glossary

Adolescent scoliosis: A sideways curvature that appears after age 10 and before skeletal maturity

Allograft: Donor bone added to patient bone to achieve a solid fusion

Anterior spinal fusion: A surgical approach from the front, either through the chest or abdomen that lets surgeons reach the front of spine

Apex of curve: The vertebrae that is farthest from the center of the body (ie at the "height" of the curve)

Autograft: Tissue that's transferred from one site to another in the same person

Bending X-rays: X-rays to check the flexibility of the spine

Cell Saver blood-recovery system: A machine that collects blood from a patient during surgery and returns it to the patient, if blood is needed

Cervical spine: The neck portion of the spinal column, which consists of seven cervical vertebrae between the skull and the rib cage

Cobb Angle: The degree of side-to-side spinal curvature; the "angle" of your curve your provide will measure on x-ray

Compensatory curve: In spinal deformity, a secondary curve—located above or below the structural curve—that develops as a way for the body to maintain normal bony alignment

Congenital scoliosis: Scoliosis caused by bony spine abnormalities that are present at birth

Decompensation: In scoliosis, the loss of spinal balance when the thoracic cage isn't centered over the pelvis

Disc: The tissue between the vertebrae that acts as a shock absorber or cushion during movement

Discectomy: Removal of all or part of the tissues that act as a shock absorber between the vertebral discs

Double Curve: Two lateral curves (scoliosis) in the same spine: a double major curve involves two curves, which are usually the same size; a double thoracic curve consists of an upper thoracic curve and a larger, more deforming lower curve

Fusion: Surgery that joins two or more bones into one unit

Growth Plate: The area of growing tissue in bones that allows bones to lengthen and grow; looks like a gap or space in a bone while someone is still growing, and closes when bones are mature and no longer growing

Hemivertebra: A congenital (at-birth) anomaly of the spine, caused by incomplete development of one side of a vertebra

Idiopathic scoliosis: A spinal curvature of undetermined cause

Infantile scoliosis: A curvature of the spine that develops before age 3

Juvenile scoliosis: Scoliosis that develops between ages 3 and 10

Kyphosis: Forward bending of the spine

Lamina: Flattened part of either side of the arch of the vertebra

Lordosis: Backward bending of the spine

Lumbar curve: A spinal curvature with an apex between the second and fourth lumbar vertebrae (L2-L4)

Lumbosacral: Pertaining to the lumbar and sacral (L5-S1) regions of the back

Lumbosacral Curve: A spinal curvature at the lumbosacral area (L5-S1)

Lumbosacral orthosis (LSO): A brace that supports the lumbosacral areas of the spine; sometimes used to keep a curve from progressing, to prevent movement, and to control pain

Orthosis: A brace that prevents movement of the spine or limbs

Pedicle: A bony connection between the back and the front of the spine. Screws are often placed here during spine surgery.

Primary Curve: The largest scoliosis curve of the spine

Proximal Humerus Ossification (PHO): Staging system to measure skeletal maturity by evaluating the growth plates in the bones of the upper arm. Scale from 1-5. 1 is skeletally immature (a lot of growing left); 5 is skeletally mature (done growing).

Glossary

Rib Vertebral Angle Difference (RVAD): A way to measure rotation of the chest wall, the difference in the angle of rib where it meets the vertebrae at the apex of the curve on the right compared to on the left

Risser sign: A sickle-shaped line of bone, which forms across the top of each side of the pelvis and shows a patient's degree of skeletal maturity (can be seen on X-rays). Scale from 0-5. 0 is skeletally immature (a lot of growing left); 5 is skeletally mature (done growing).

Sacrum: A curved, triangular bone at the base of the spine, consisting of five fused vertebrae, which joins the lowest lumbar vertebra and the pelvic bones

Sanders Stage: Staging system to measure skeletal maturity by evaluating the growth plates in the bones of the hand. Scale from 0-8. 0 is skeletally immature (a lot of growing left); 8 is skeletally mature (done growing).

Scoliosis: A sideways curvature of the spine

Skeletal Maturity: The age at which the spine finishes growing

Spinal-cord monitoring: Constant monitoring of patients during spine surgery to let the surgeons know of any neurological problems related to the surgery (also called IntraOperative Monitoring or IOM)

Spinal instrumentation: Metal implants (screws, rods, hooks, wires, tethers) attached to the spine to correct and stabilize spinal deformity

Spine: The vertebral column, sometimes called the backbone

Spondylolisthesis: A condition in which one vertebra slips forward onto the vertebra below, usually at L5 on the sacrum

Spondylolysis: A fracture (break) in vertebrae

Thoracic curvature: A spinal curve in which the apex is between the second and eleventh thoracic vertebrae

Thoracolumbar curvature: A spinal curve in which the apex occurs at the 12th thoracic and 1st lumbar vertebrae

Thoraco-lumbo-sacral orthosis (TLSO): A brace used to support the thoracic and lumbar spine, sometimes used to keep a curve from progressing, prevent movement, and to control pain.

Tri-radiate cartilage: Staging system to measure skeletal maturity by evaluating the growth plates in the pelvis. "Open" indicates a lot of growth remaining, "closed" indicates closer to being done growing.

Appendix 1: Medications

Acetaminophen (Tylenol)
Reason Given: Ease pain and fever
Side Effects: Upset stomach or throwing up; harm to the liver may happen rarely

Cefazolin (Ancef)
Reason Given: Treat or prevent bacterial infections
Side Effects: Belly pain, upset stomach or throwing up

Celecoxib (Celebrex)
Reason Given: Help ease pain, decrease swelling
Side Effects: Belly pain, upset stomach or throwing up

Clindamycin (Cleocin)
Reason Given: Treat or prevent bacterial infections
Side Effects: Belly pain, upset stomach or throwing up

Diazepam (Valium)
Reason Given: Calm muscles and treat anxiety
Side Effects: Light headedness, sleepiness, blurred vision, or change in thinking clearly

Diphenhydramine (Benadryl)
Reason Given: Helps treat itching, restlessness, upset stomach, and throwing up
Side Effects: Lightheadedness, sleepiness, blurred eyesight, change in thinking clearly, hard stools (constipation), dry mouth, or unexpected excitement

Enoxaparin (Lovenox)
Reason Given: Prevents blood clots from forming
Side Effects: Increased heart rate, dizziness, upset stomach, headache, increased numbness or tingling, bruising, or bleeding

Famotidine (Pepcid)
Reason Given: Treat symptoms caused by lots of stomach acid
Side Effects: Headache, hard stools (constipation), or loose stools (diarrhea)

Gentamicin
Reason Given: Treat or prevent bacterial infections
Side Effects: Belly pain, upset stomach or throwing up

Hydromorphone (Dilaudid)
Reason Given: Help ease moderate to severe pain
Side Effects: Lightheadedness, sleepiness, blurred eyesight, change in thinking clearly, feeling dizzy, upset stomach or throwing up, hard stools (constipation)

Hydroxyzine (Vistaril)
Reason Given: Treat anxiety and spasms
Side Effects: Lightheadedness, sleepiness, blurred vision, change in thinking clearly, feeling dizzy, headache, dry mouth

Ibuprofen (Advil, Motrin)
Reason Given: Ease pain, swelling and fever
Side Effects: Belly pain, upset stomach or throwing up, heartburn, hard stools (constipation), gas, dizziness, increased risk for bleeding

Ketorolac (Toradol)
Reason Given: Help ease moderate to severe pain
Side Effects: Headache, belly pain, upset stomach or throwing up, loose stools (diarrhea)

Morphine
Reason Given: Help ease moderate to severe pain
Side Effects: Lightheadedness, sleepiness, blurred eyesight, change in thinking clearly, feeling dizzy, upset stomach or throwing up, hard stools (constipation), dry mouth

Naloxone (Narcan) drip
Reason Given: Helps avoid side effects from some drugs
Side Effects: Chest pain or pressure, fast heartbeat, shortness of breath, a heartbeat that does not feel normal, very bad headache, upset stomach or throwing up

Ondansetron (Zofran)
Reason Given: Treat or prevent upset stomach or throwing up
Side Effects: Headache, feeling tired or weak, lightheadedness, dizziness, faster heartbeat

Oxycodone
Reason Given: Help ease moderate to severe pain
Side Effects: Lightheadedness, sleepiness, blurred eyesight, change in thinking clearly, dizziness, upset stomach or throwing up, hard stools (constipation), itching, dry mouth

Polyethylene Glycol 3350 (Miralax)
Reason Given: Treat hard stools (constipation)
Side Effects: Belly pain, upset stomach or throwing up, loose stools (diarrhea)

Ranitidine (Zantac)
Reason Given: Treat symptoms caused by lots of stomach acid

Side Effects: Headache, hard stools (constipation), loose stools (diarrhea)

Ropivacaine//Clonidine for epidural use
Reason Given: Stops pain or numbs the area, to control pain when infused in the spine
Side Effects: Weakness, numbness, tingling, skin irritation, change in thinking clearly, headache, fast or slow heartbeat, trouble breathing, dizziness

Appendix 1: Medications

Senna (Senokot)
Reason Given: Treat hard stools (constipation)
Side Effects: Belly pain, upset stomach or throwing up, loose stools (diarrhea), cramps, change in color of urine or stool

Vancomycin
Reason Given: Treat or prevent bacterial infections
Side Effects: Belly pain, upset stomach or throwing up, Redman's Syndrome (flushing and itching of the neck, torso and face)

Appendix 2: How to Move Safely After Surgery

To protect your back and reduce discomfort, it's important that you change positions correctly—both in the hospital and after you go home. Move slowly and carefully. Avoid bending and twisting the spine, and no lifting more than 10 pounds for the first 3 months after surgery.

In the first week at home you should be up and walking about once every 1-2 hours while at home. Walking a short distance- to the bathroom, kitchen, or down the hallway- frequently will help to prevent stiffness, soreness, and keep your lungs breathing well and blood circulating well in your body. The goal is for patients to be able to walk about a mile a day (total) by around 4 weeks after surgery.

Patients improve their levels of activity at different rates. It will take three to six months before you can fully resume your previous level of activity. Talk with your doctor about which activities are right for you. Before you leave the hospital, a nurse will teach you how to perform your daily activities safely at home, work and school. Do only simple tasks at first. Your doctor will let you know when you can resume recreational and home-maintenance activities.

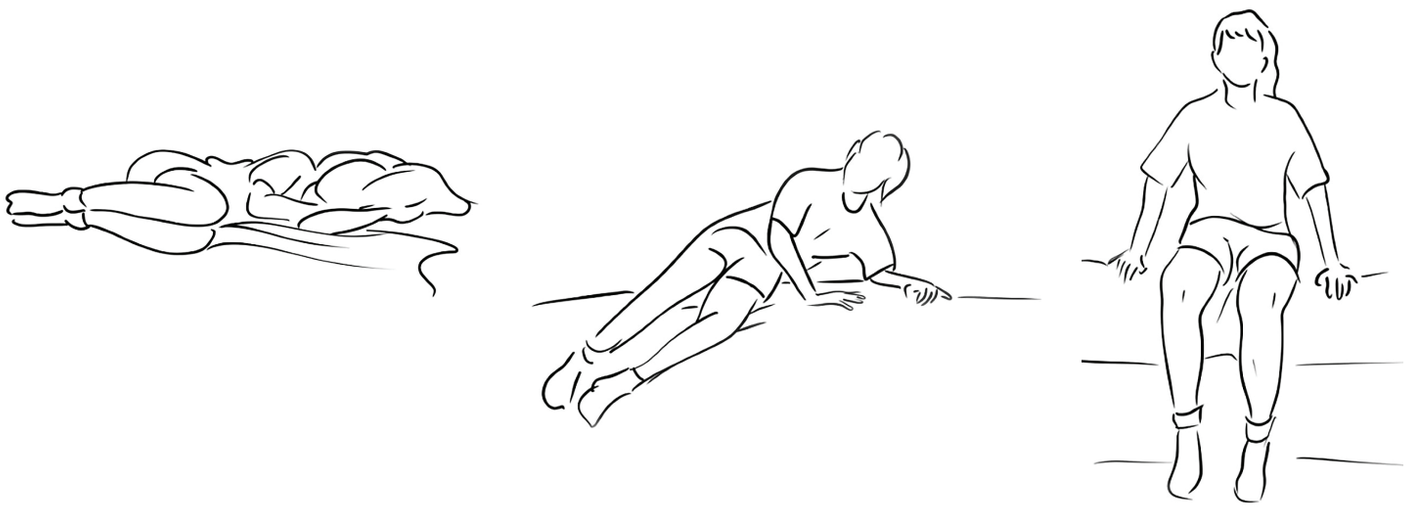
Rolling From Side to Side

Whenever you turn over in bed, roll like a log. Don't sit up first. To roll from side to side, bend your legs and push with your feet. Move your shoulders, hips and knees together, without twisting your back. Your upper trunk should stay lined up with your lower trunk. Contracting your abdominal muscles will make it easier to move your body as one unit.

Getting Out of Bed

The evening after surgery, you'll sit on the edge of your bed and possibly stand. Our staff will help you while you are in the hospital. To get out of bed, follow these steps:

- Keep your back straight. Gently roll to your side. Push yourself up, slowly, onto the elbow on that side.
- Bend your knees, keeping your legs together. Let your legs swing over the edge of the bed.
- At the same time, use your elbows and hands to push yourself up to a full sitting position. (A bedside armchair might help if you have difficulty pushing yourself up.)
- After you're sitting in a balanced position, scoot your hips forward until both feet touch the floor.
- Come to a standing position using your thigh muscles.
- Don't get out of bed by sitting up and swinging your legs over the side. That puts strain on your back.



This information is for educational purposes only. It is not intended to replace the advice of your health care providers. If you have any questions, talk with your doctor or others on your health care team.

If you are a Gillette patient with urgent questions or concerns, please contact Telehealth Nursing at 651-229-3890.

Preparing to Stand

Before you attempt to stand, slide as close to the front of your seat as you can. Then make sure you can touch the floor with both feet. Place one foot slightly behind the other. Keep your back straight. Lean forward at the hips and push up using your arms and legs. Use an armrest, rail or other sturdy surface for support if you need help balancing. Use your thigh muscles to help you rise and stand.

Standing

Maintain good posture while you're standing. Don't stoop or curve your spine forward. Position your feet so that they're pointing forward and placed shoulder-distance (about 10 inches) apart. Stand with your head erect and shoulders back. Let your arms hang freely. Keep your abdomen flat, buttocks firm, and knees slightly bent. To make standing easier:

- Shift your weight from one foot to the other.
- Place one foot on a footstool (about 3 inches high) if you'll be standing for a long time. It also might help to lean on a tall stool.
- Make sure your work surface is no more than 2 or 3 inches below your elbows.
- Wear shoes with heels no higher than 1 inch.

Preparing to Sit

First, choose a firm, hard chair. If it doesn't offer adequate support to your lower back (lumbar region), use a lumbar support (4 to 6 inches thick), such as a pillow, rolled towel or small rolled blanket. Move backwards toward the chair, feeling for the seat with the back of your legs. Use your thigh muscles to lower yourself onto the chair. Keep your back straight.

Sitting

Don't sit for more than 20 or 30 minutes at one time. Take frequent, short breaks by shifting position, standing or walking. While sitting, maintain your spine's normal curves. Don't arch or lean forward. Rest your feet on the floor; don't dangle them. Avoid twisting as you reach for objects.

Support your elbows on a surface, such as an armrest, a table or a lap pillow. Firm chairs are more comfortable than low, soft ones. Because sitting puts more strain on your back than walking does, it's best to decrease the time you spend sitting and increase the time you spend walking.

Getting Into Bed

Before getting into bed, place your bedcovers and pillows near enough that you can reach them when you lie down. Sit on the edge of the bed. Prepare to lie on your side by resting on your elbow and slowly raising your legs. Don't twist your back. Continue to ease into a lying position. You should end up on one side, with your knees bent toward your chest (in the fetal position).

Walking and Climbing Stairs

Before you're discharged, you'll need to walk up and down a flight of stairs. While climbing stairs, use the handrail, maintain good posture, and let your leg muscles do the work. If you're tired, take one step at a time. Place both feet on each stair, rest, and then resume your climb. Otherwise, climb as you normally would. You should have someone assist you, or be near you, on the stairs for the first few days at home, especially while you are taking pain medication.

Getting In and Out of a Car

Be careful not to twist or rotate your back. While you're sitting on the car seat, turn your entire body and swing your legs into or out of the car. Place your arms on the seat or the body of the car if you need support. Don't lean on the car door—it could swing, throwing you off-balance and increasing your pain.

Sitting On and Getting Up From the Floor

To sit on the floor, begin by dropping to one knee (so you're squatting). Keeping your back straight, lower the other knee. Assume a side-sitting position then bring your legs forward.

To get up from the floor, bring your legs to the side and assume a side-sitting position. Keeping your back straight, roll onto one knee while placing your other foot on the floor. Using your thighs, begin to rise. Straighten your bent knee and place that foot on the floor.

Appendix 3: Relaxation Techniques

Relaxation techniques can help you control anxiety and use your energy more efficiently. Relaxation is a learned response that takes practice. Eventually, you'll learn to recognize when you're tense—and when you should use relaxation techniques.

Deep Breathing

If you can, begin by lying on your back with your knees bent and your feet about 8 inches apart. Turn your toes out slightly.

Scan your body for tension.

Place one hand on your abdomen and one hand on your chest.

Inhale slowly and deeply through your nose into your abdomen, pushing against your hands as much as you comfortably can. Your chest should rise only a little—and only as your abdomen moves.

When you feel at ease, smile slightly and inhale through your nose.

Exhale through your mouth, making a quiet, shooshing sound (like the wind) as you gently blow out. Relax your tongue, mouth and jaw.

Take long, slow, deep breaths that raise and lower your abdomen. Focus on the sound and feeling of your breathing.

Continue deep breathing for five to 10 minutes, once or twice a day, for a couple of weeks. Then extend each session to 20 minutes. At the end of each session, scan your body for tension. Compare the tension you feel at the end of the exercise to what you felt when you began.

Body Awareness

Focusing on different body parts can help with general relaxation. For this exercise:

Position yourself comfortably.

Close your eyes and think of your face muscles. Let them totally relax.

Next, think of your neck and shoulder muscles. Let them totally relax.

Relax all your muscles, moving from head to toes. Let all your body parts become loose and warm. Focus on pleasing thoughts and images. Close your eyes and picture a pleasant scene or favorite place. As you relax, imagine the sights, sounds and smells of the scene.

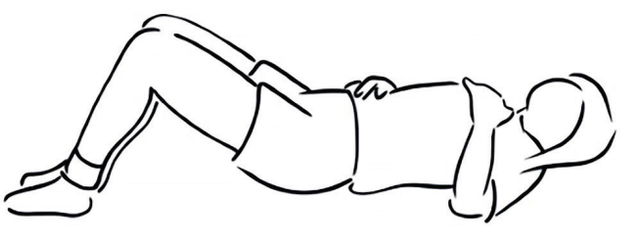
A Pleasant Environment

Environmental factors (the things all around you) can help you relax. To maximize relaxation:

Play soothing music.

Turn down the lights and close the door, so you're in a quiet place. Keep interruptions to a minimum. Wear loose, comfortable clothing.

These techniques can be especially helpful before you begin a task or during activities that tire you.

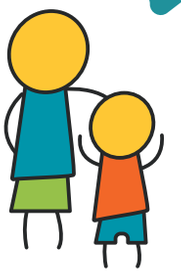


Appendix 4:

Idiopathic Scoliosis: Spine Surgery The Journey to Discharge

This is only a guideline for after surgery, some things may be in a different order on your journey.

START



Pre-operative Phone Call (if Surgical)

Clinic Appt & Pre-admission Phone Call

Outpatient consults if needed

Welcome to Gillette Children's

Discharge Planning Begins

What are your goals for discharge?

Bonus Question: Why so much activity?

Bonus Question: Are you using your IS?

Is there a drain in your back? This will be removed soon

Discontinue the pain pump button

Keep using those muscles! Do ankle pumps and move your arms

Pee

Walk

Remove bladder catheter

Who will help you move around at home? Let's practice!

Walk

Sit up in a spine chair, especially at mealtimes

Pooped yet?

Bonus Question: What can I do to prevent constipation at home?

Day of Discharge

Bonus Question: What are your activity restrictions? Need any notes for school/gym?

IV's still needed? Let's take them out!

Shower, then a nurse will change your dressing!

X-ray

Climb the stairs with your nurse

Daily Rounding Discharge Checklist

- Address interdisciplinary and family goals for discharge
- Discuss Medication management
- Review discharge orders and instructions
- Arrange post discharge services and equipment
- Coordinate follow-up appointments
- Educate using teach back
- Engage family in the treatment plan

Daily Rounding Discharge Checklist; What to Expect

Logroll turns (with help) every 2 hours

Use the button on the pain med pump to help control your pain

Bonus Question: Describe how and why we reposition

Eat ice chips and small sips of liquids until your stomach wakes up!

Review the Roadmap

Feeling dizzy? Keep those eyes open and take some deep breaths!

Deep breathing helps recovery (ask about using an Incentive Spirometer!)

Stomach awake? Let's start eating

Stand at the side of your bed with help

Dangle feet at the edge of the bed

Pain Control

Start the transition to oral medications for pain management

Start bowel meds to help get things moving

Attend Follow-up Appointments

What questions do you have for your care team?

Review Education and Sign Discharge Paperwork

Receive Survey about Hospital Stay

Do you know the Telehealth Number?

Get Medications from the Pharmacy

Home Sweet Home

Receive Follow-up Call within 48 Hours

Appendix 5: Return to Activity Timeline

Discharge Activity

No bending/twisting/running/jumping, no lifting >10 pounds for 3 months

Walking around home about once per hour, during waking hours, and doing stairs as necessary

Okay to sleep in whatever position is most comfortable (side, stomach, back)

School: students typically return part time ~3 weeks, full time ~3 weeks

May need elevator pass for 6 weeks, extra set of books at home/in classroom

Driving: allowed at 6 weeks, and must be off all narcotic pain medication

Travel: ok to travel in car for any distance right after surgery. Long drives may cause some discomfort so planning frequent stops to stretch and reposition will be important. It is safe to fly on a plane right after surgery. Sitting for long periods may be uncomfortable. Sitting in an aisle seat so you can stretch and resposition frequently can help.

Sports/Gym/Physical Activities

Allowed at 6 weeks: brisk walks, swim, bike

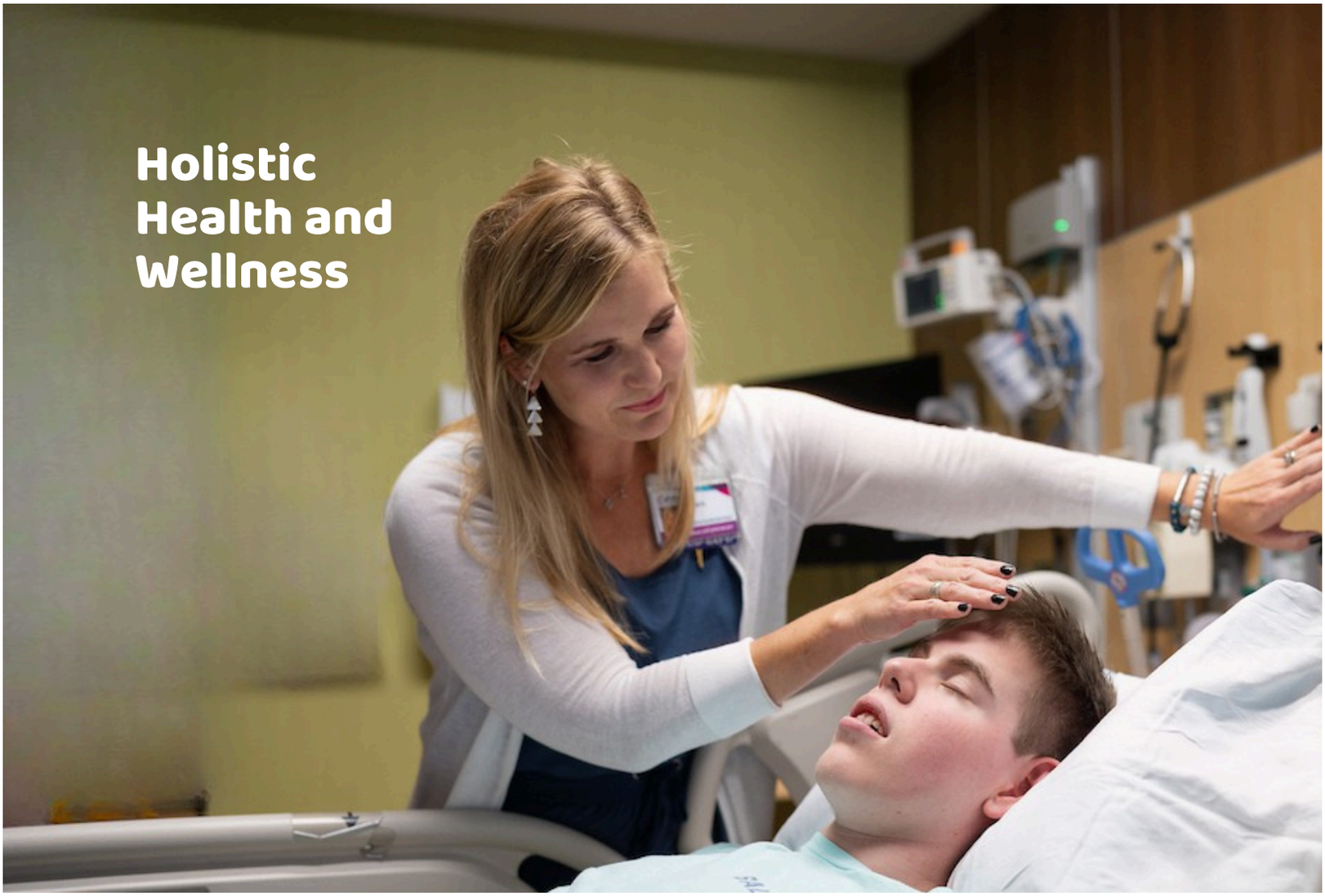
Allowed at 3 months: jog, run, jump, return to gym class (no contact activities), basketball, soccer, baseball/ softball, volleyball, dance, light upper extremity exercise, bowling

Allowed at 4 months: amusement park ride. If already has skills- ice skating, skiing, snowboarding, rollerblading, horseback riding

Allowed at 6 months: full return to gym class, tennis, golf.. If learning for first time- ice skating, skiing, snowboarding, rollerblading, gymnastics (depending on training level)

Allowed at 1 year: depending on your provider: wrestling, hockey, gymnastics, football

Holistic Health and Wellness



At Gillette, holistic health and wellness describes health care that combines conventional treatments (e.g. medication, surgery) with integrative modalities (e.g. music therapy, Healing Touch, osteopathic manipulation treatment, essential oils, etc.) to promote well-being, alleviate the side effects of medication, and aid in the rehabilitation and treatment of complex medical conditions. Integrative therapies don't replace conventional treatment, but are used as an effective complement to the care we provide.

Integrative therapies that are available as part of inpatient services range from aromatherapy and nutrition to virtual reality and music therapy. These therapies are often credited with easing nausea, improving circulation and increasing comfort. Research has shown that when used in conjunction with medical care, integrative therapies can help ease distressing symptoms and improve a patient's quality of life.

Many of the physicians, therapists, nurses, and other health care staff here at Gillette are trained in both conventional and integrative care, and can guide you in choosing services that best fit your diagnosis, treatment schedule, and interests.

To request more information about any of these integrative modalities or to request a consultation, please speak with your care team.

gillette CHILDREN'S

Aromatherapy uses extracts from plants to enhance physical, emotional, and spiritual well-being by reducing stress, promoting sleep, and increasing comfort. At Gillette we use bergamot, ginger, lavender, orange, and peppermint essential oils and can be readily accessed by your nurse.

Clinical Hypnosis creates a state of focused attention, allowing one to self-regulate a variety of symptoms thereby gaining an empowering sense of control. By promoting mind-body connections, patients can achieve a desired therapeutic outcome such as a reduction in acute and chronic pain, calming a variety of fears, and easing anxiety.

Guided Imagery involves using mental images in a purposeful way to achieve a desired therapeutic goal. It begins with general relaxation techniques then uses guided visualization to promote relaxation, reduce stress and anxiety, and focus on breathing. A typical session lasts 20 to 25 minutes.

Healing Touch (HT) is an energy therapy in which clinicians use their hands in a heart-centered, intentional way to support health and promote healing. HT can be used to modulate pain and increase comfort, reduce anxiety, strengthen immune function, and enhance rest, relaxation, and sleep (limited availability).

Music Therapy is the clinical use of music by a credentialed professional to accomplish individualized goals within a therapeutic relationship. Addressing physical, emotional, cognitive, and social needs, music therapy can be used to improve the quality of life, modulate pain, and reduce stress.

Nutritional Counseling involves the therapeutic application of nutritional modifications to reduce inflammation, restore depletions, and promote overall well-being. Good nutrition is fundamental to optimal health with an array of medicinal properties such as improved postsurgical recovery, gastrointestinal health, and stronger immune function.

Osteopathic Manipulation Treatment (OMT) is a holistic, hands-on approach used to diagnose and treat a variety of symptoms by facilitating balance and alignment in the body through gentle, soft-tissue techniques. By promoting the body's innate ability to heal itself, OMT can relieve a variety of distressing symptoms thereby improving function.

Pet Therapy offers a guided interaction that involves partnering trained dogs and handlers with patients in order to normalize a hospital stay, ease anxiety, and enhance coping within the hospital environment. The benefits of pet therapy include improved mental, social, and physiological health, relaxation and play, and increased satisfaction and morale (limited availability).

Psychotherapy Consult is available to support emotional and behavioral adjustment while in the hospital. Various psychotherapy approaches such as cognitive-behavioral, guided imagery, relaxation, biofeedback, and other coping strategies may be incorporated as warranted.

Spirituality Support uses supportive listening to help patients and families understand and process difficult situations. A chaplain works toward identifying coping mechanisms and finding hope, meaning, personal strengths, and resiliency that will assist patients and families through difficult events.

Virtual Reality (VR) allows a patient to visit Iceland or London, relax on a beach, or watch a campfire right from the comfort of a hospital bed. VR helps to relax and distract patients and their families during procedures or therapies. Benefits include improved range of motion and strength, increased social interaction, and improved cognitive outcomes.

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