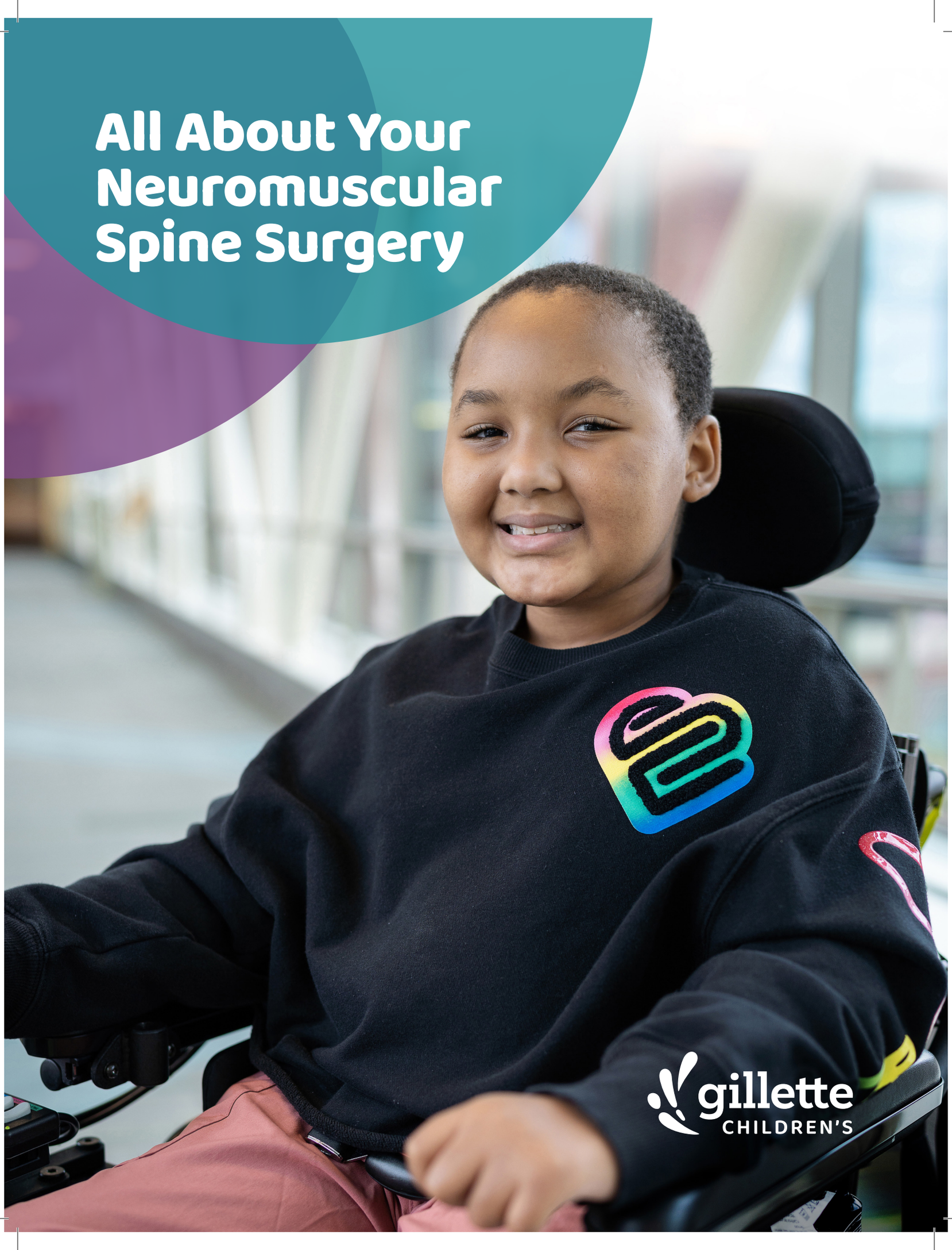
All About Your Neuromuscular Spine Surgery



gillette CHILDREN'S

Table of Contents

03 Welcome to Gillette Children's

06 Planning Your Surgery

08 During Your Hospital Stay

14 After Your Hospital Stay

18 Frequently Asked Questions

20 Glossary

Appendix 1:
Medications

Appendix 2:
Neuromuscular Roadmap

Appendix 3:
Holistic Health and Wellness

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 20)** 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

Insurance/Prior Authorization
651-325-2148

Gillette Social Work
651-229-3855

Orthotics, Prosthetics, Seating Department
651-229-3801

Mobility and Movement Concerns - Physical Therapist **651-229-3900**

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

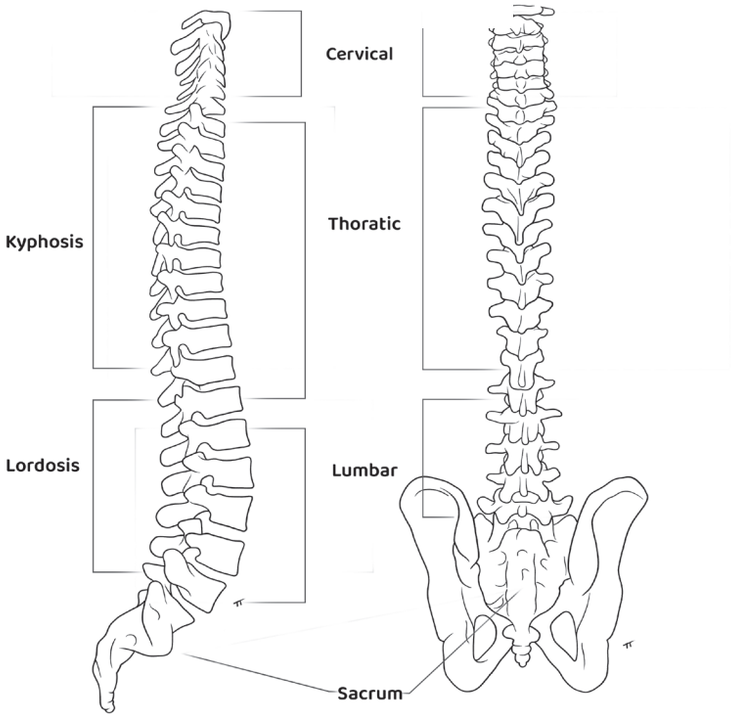
About the Spine

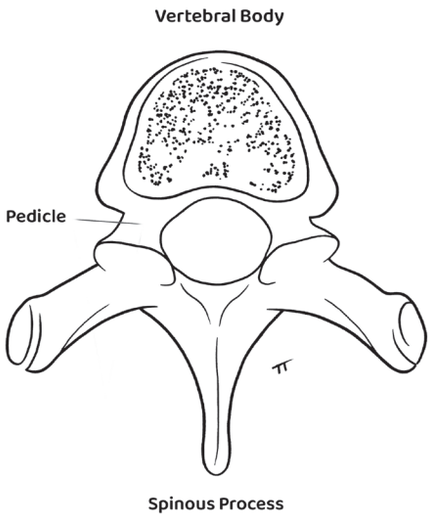
The human spine is made up of 33 bony segments called vertebrae. They fit together, forming a flexible column that supports the back and protects the spinal cord. The neck has 7 cervical vertebrae. The upper back and chest have 12 thoracic vertebrae; these are where the ribs are attached. The low back 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, or forward curving of the upper back, and a natural lumbar lordosis, or backward curving of the lower back.

What is Scoliosis?

Some people have extra curves in their back when viewing from behind 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.

There are several causes of spine conditions, each type ranging from mild to severe, that can occur in infants, children, teens, and adults. Some may be from an accident or injury. Neuromuscular scoliosis is associated with conditions such as cerebral palsy, spina bifida, muscular dystrophy, or spinal muscular atrophy, and others, which lead to imbalances in the muscles that support the spine. Congenital spine conditions are the result of abnormal spinal developments before birth.





Why do we treat scoliosis?

In patients with an underlying neuromuscular condition, their spinal curve may reach a size where it will predictably continue to progress throughout the rest of their life. If the curve is left to worsen, it will likely eventually lead to worsening pulmonary function, debilitating issues with sitting and moving, pain and discomfort, and decreased quality of life. Surgery reduces the size of the curve, provides spinal stabilization, prevents future curve progression, and restores spinal balance. Other benefits of surgery include the fact that patients are often a little bit taller after surgery, their waist will be more symmetric, their prominences will be smaller, and they will sit more balanced.

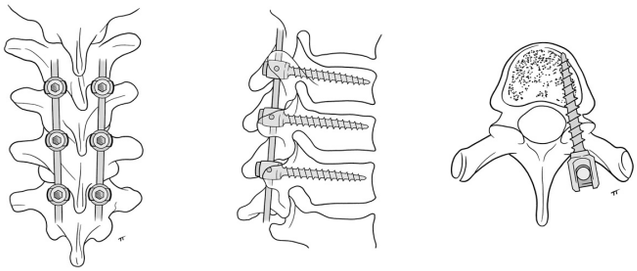
About Surgical Procedures

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

Fusion Spine Surgery Spinal 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 an incision in a patient's back. They then attach screws or anchors to the individual bones of the spine in the area of the curve, connect the anchors with smooth rods, and then move the spine into a straighter position.

Anterior Fusions In order to have the best chances of successful healing and scoliosis correction, some patients need the front of the spine fused as well as the back. A spine surgeon works with a general surgeon to open the chest or abdomen through the side. The surgeon may insert cages, bones, or screws to hold the spine in place while fusion occurs.



Posterior Fusions (above)

Planning for Your Surgery

Gillette considers all aspects of your child's health to ensure your child is as healthy as possible; as well as make sure you feel prepared for surgery. Surgery always entails risk. For some patients with additional medical concerns, these risks are more significant. Our highest priority is the safety of your child. That is why we have developed this process, to identify risks and ensure that you and our team are prepared for your child's surgery. Below is the timeline of appointments that must be completed prior to surgery.

3-6 months before surgery: PrePARE (Presurgical Patient Assessment and Risk Evaluation) appointment with our complex care pediatrics team. Our pediatrics team will thoroughly discuss any pulmonary concerns, nutrition issues, or other medical conditions your child has that could affect recovery. The PrePARE team works with the surgeon and primary health care provider to address health issues in ways that might help the patient avoid a prolonged hospital stay, extended recovery time, or complication. Specifically, we evaluate

pulmonary function, seizure status, nutrition status, method of nutrition, bleeding risk, and bowel regimen. Recommendations may be made to maximize your child's health and provide the best chances of a healthy and uncomplicated recovery.

Within 30 days prior to surgery: History and Physical with Primary Care Provider. This is a requirement for all patients undergoing surgery at Gillette. You will receive a pre-op package in the mail with more detailed information and necessary supplies.

Physical Therapy Evaluation: We strongly recommend that you think about what adaptive equipment you might need after surgery. Our social workers and therapists can help you consider any special equipment or services you may need at home. Together, we should try to obtain equipment and services before your surgery. We strongly recommend obtaining equipment, such as a mechanical lift and slings, before surgery, so that you and your care team can practice and become familiar with the equipment.

1-2 weeks before surgery: C-SPOC (Complex Spine Pre-Op Clinic) with Spine Team At this appointment, we will go over what happens in the days leading up to surgery, the surgery itself, the days in the hospital after surgery, and the first few days at home. If your surgeon would like updated x-rays, we will also have those taken. One of our requirements for all patients undergoing surgery is that they have specific blood work done, as well as a urine sample. For patients who cannot use the toilet, but are briefed, we need urine obtained via straight catheterization to prevent contamination. These will also be done at this C-SPOC appointment.

This appointment can be coordinated with a child life "tour". This is not simply a tour of the building, although that is part of it if you are interested. 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 may be most anxious about related to their surgery and hospital stay and use developmentally appropriate medical play to decrease this anxiety as much as possible.

Pulmonology Visit If your child has an underlying neuromuscular condition and/or restrictive lung disease, they will need to see pulmonology prior to surgery. We recommend increasing respiratory regimen 1 week prior to surgery to optimize lung health.

For Caregivers

The timing of these appointments is very important. If you have any questions about this process, please don't hesitate to ask.

Preparing Your Body for Surgery

Your overall health will affect the speed and quality of your recovery. Health and nutrition are keys to your successful surgery and recovery. Follow these guidelines.

Exercise/Activity

Before your surgery, take part in any type of physical activity you are able (such as using a stander, gait trainer, adaptive tricycle, wheelchair propulsion). Passive range of motion exercises will help improve your flexibility, which makes comfortable positioning more possible during your recovery. If you feel pain, talk with your physical therapist or surgeon.

Physical activity tends to improve bowel function and helps you stay as healthy as possible. In addition, if you're physically active before surgery, you'll find it easier to regain your abilities afterward.

Diet

Diet should contain adequate amounts of food with iron, calcium, and vitamins C and D (fresh colorful fruits and vegetables, dairy, and other products with added iron and calcium). Avoid caffeine, tobacco and alcohol.

Protein is very important for healing. We suggest increasing your consumption of protein six weeks before surgery. Most cookbooks have guides to serving sizes and amounts. If you're concerned about weight gain, trade servings of protein for servings of carbohydrates. Dairy, nuts, and eggs are the main protein sources.

If you're fed by gastrostomy tube, this will be discussed at the PrePARE visit so appropriate changes can be made. Also, some patients have conditions that put them at risk of complications during and after surgery. In such cases, a gastrostomy tube (G tube) will need to be converted to gastrojejunostomy tube (GJ tube). This improves feeding tolerance after surgery, decreases risk of aspiration and other lung complications, and allows us to safely begin optimizing nutrition and pain medications sooner after surgery by bypassing the stomach to help with healing and recovery. The goal will be to return to G tube after surgery when it is safe to do so. If this applies to your child, you will receive an additional handout with more detailed information.

Medicines

If you take the anti-seizure medicine valporic acid (brand names Depakote or Depakene), you might have a higher risk of increased bleeding during surgery. This is because valporic acid can thin the blood.

If you take Depakote or Depakene, please tell your Gillette health care provider. You will need tests to measure blood clotting and related properties so we can prepare for as safe a surgery as possible.

Please do not take any NSAID medication within 1 week of your surgery (ibuprofen/Advil/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.

Bowel Management

A common side effect of surgery, anesthesia, and pain medications is constipation. By cleaning out the bowels prior to surgery, we can decrease the severity of post-operative constipation and avoid additional belly discomfort or feeding intolerance. The PrePARE team will help develop a plan to treat constipation. Even if you are feeling well before the surgery, a bowel program should be started on a regular basis a few weeks before your surgery date. The goal is to have regular/daily, pain-free bowel movements. Then, beginning 3 days prior to surgery, there will be a specific bowel clean out recommended. We have found that patients who do NOT undergo a bowel clean out prior to surgery are at an increased risk of infection, struggle with feeding tolerance and constipation after surgery, and have prolonged hospital stays. **See Page 16** for more information on bowel management.

Latex Allergy

Although Gillette is latex-free, notify your health care provider if you have a latex allergy or if you have had a severe reaction to latex. If you'd like more information, ask a nurse about rubber latex allergies.

Planning for After Your Hospital Stay

Before leaving the hospital, you will receive specific instructions, including guidelines for recovering at home and scheduling follow-up appointments. A nurse will be available by phone to answer questions after you leave the hospital.

Transportation

Following spine surgery, your child will be able to be transported home in the same way they came to the hospital - in their own wheelchair, their own car seat, or the typical car seat with seatbelt.

Be sure your vehicle has enough room for all equipment, personal belongings, and passengers. Minnesota State law requires age-appropriate car seats.

Transfer Methods

After surgery, your surgeon might instruct you to limit how much you bend your hips. This might require you to change how you transfer from one place to another. You might need to do a supine sliding board transfer, using a sheet, to get from the bed to a wheelchair. This transfer requires two adults. If needed, you can get a supine sliding board from Gillette. You might also be able to use a mechanical lift. This will be discussed with our physical therapists either before or during your hospital stay.

Lifts and Slings

If you use a mechanical or ceiling lift, after surgery you might need to learn how to avoid flexing your hips more than 90 degrees. We can show you how to use a divided leg sling with multiple loops to do this. This will be discussed with our physical therapists either before or during your hospital stay.

Home Equipment

After spine surgery, our seating specialists will modify your home wheelchair and equipment to fit best you and your new posture. **Please make sure to bring your home WC and home slings with you to the hospital**.

Follow-Up Appointments

Your provider may recommend a different follow up schedule based on your child's specific needs. But this is the most common follow up schedule.

3 week wound check - this may be in person, or you may be asked to send a photo of the incision for review through the patient portal. Your surgeon will decide what is best for you.

6 week follow up with x-rays
12 week follow up with x-rays

Day Before Surgery

The night before surgery, you must wash your entire body and your hair with soap. Use clean towels and sleep on freshly laundered bedding, 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 or 2 hours before your scheduled surgery time; you will be told an exact arrival time prior to day of surgery. 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

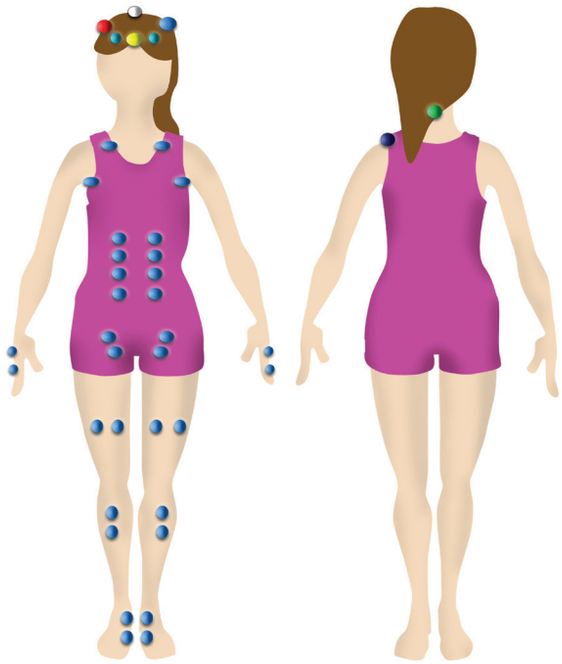
Before surgery, you will meet the care team who will work to keep you safe and comfortable before, during, and after your surgery.

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.



Location of the spinal cord monitoring sensors

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.

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. If you have a tracheostomy, we will connect your trach to our equipment 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.

After Surgery

After your surgery, you may go directly to the Pediatric Intensive Care Unit (PICU), or you may start out at the Postanesthesia Care Unit (PACU), and then move to the Orthopedics/Surgical Unit (OSU). Each patient's personal medical history and how they respond to surgery helps guide where they will recover immediately after surgery.

Both the PICU and OSU have private rooms 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.

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.

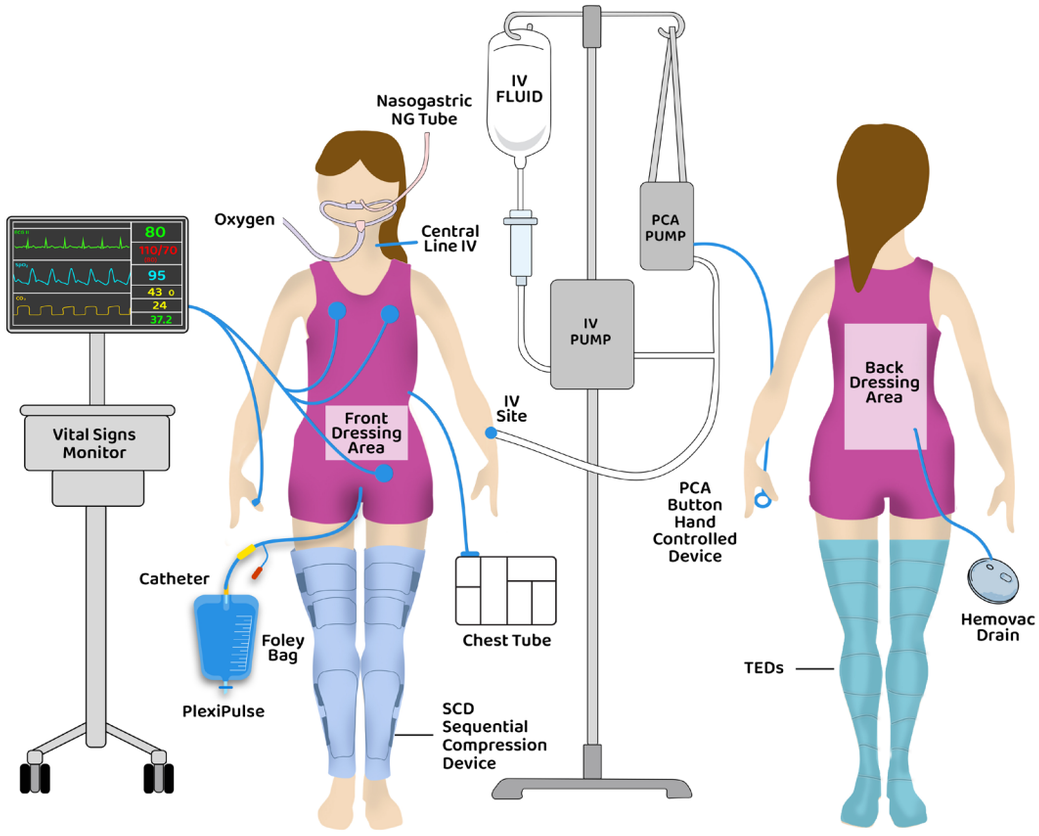
A **patient/parent/staff-controlled analgesia (PCA) pump** is a machine that delivers pain medicine during the first day of your recovery.

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.

Incisional Vac is a special bandaid placed on your closed incision connected to a vacuum. It helps to keep the incision edges together to promote faster healing. This is a temporary bandaid and will be changed to a traditional bandaid by 1 week after surgery.

Your Appearance Shortly after surgery, visitors might notice temporary changes in your appearance. If you were positioned on your stomach during surgery, your face and hands might be puffy. Visitors also might notice redness around your eyes and lips. That's because we might have placed protective tape over your eyes and around your mouth to keep your breathing tube in place.

Recovery Goals

Breathing Your medical team will be working with you after surgery to help keep your lungs strong and help prevent complications such as pneumonia or other respiratory infections. A respiratory therapist will visit frequently each day to provide breathing treatments or use equipment to help you take deep breaths and keep your lungs strong, clear secretions, and avoid any buildup of fluid.

Respiratory treatments such as vest and cough assist are safe after spine surgery. The treatments will not harm the bones or new implants. While these respiratory treatments can cause mild, temporary discomfort in the immediate post-op period, they play an important role in preventing post-op pneumonia or pulmonology complications. Staff will do their best to time uncomfortable interventions with medications to make you as comfortable as possible.

Digestion After surgery, your care team will listen for bowel sounds through a stethoscope placed on your stomach. You won't be allowed to receive food or liquids (by mouth or GJ tube) 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, can vomit, and may be at risk for aspiration. After you have bowel sounds, the team will help to guide intake very slowly. We'll gradually add to your diet as you are able to tolerate more. During surgery and before you resume eating, your IV will provide the fluids your body needs. As your recovery progresses, you will return to your home feeding regimen. Once you are taking fluids, solid foods, and pain medicines by mouth or G/J-tube, we can take out your IVs.

Surgical Dressing Your team will check your surgical dressing (a large band-aid that covers your incision) regularly. This will stay in place for 3 weeks after surgery. If it becomes contaminated with urine or stool, we will remove it, clean your skin, and put a clean dressing on. You will be provided with extra dressing supplies and instructions when you go home in case you need to change it.

You will either have the dressing removed in clinic at the 3 week appointment, or you will be instructed to remove the dressing at home and send your spine team photos via patient portal for review.

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.

Braces Some patients need a spine brace or thoracolumbosacral orthosis (TLSO) after surgery. This depends on each individual's specific medical needs, level of mobility, strength of their bones, and the specific surgery performed. After surgery, a brace helps to provide stability and limit the motion of the back and torso so the spine has the best chance of healing. If a brace is needed, your spine provider will give you exact instructions on how often to wear it after surgery.

Activity Restrictions and Moving Safely To ensure your bones heal and fuse together as best as possible, we place restrictions on some movements for a temporary period of time after surgery. These include:

- No bending or twisting spine
- No lifting more than 10 pounds
- No self-transfers (for some patients)
- No flexing hips past 90 degrees (for some patients)
- No running
- No jumping

Moving Around Safely

Getting up and moving (dangling at edge of bed, standing, walking, being up in wheelchair) early on is a very important part of recovery. We expect you to begin getting up to move on the day of surgery once you return to your post-op room. We'll change your position every two hours or so by rolling you onto your side. Your shoulder and hips will move together to avoid twisting your back. Physical therapy will see you during your hospital stay as well. They will work with you, your caregivers, and staff to figure out the best way to move you safely. Each day you will spend more and more time out of bed.

X-rays We will do postoperative spine X-rays before you leave the hospital.

Medication After surgery you will have a PCA (patient/parent-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 or G/J-tube on the first day after surgery. The IV pain medicines are then turned off.

You will have multiple pain medications available to you **(see Appendix 1 for details on how each medication works)**. These medications may include a Valium, Toradol, Oxycodone, Vistaril, Tylenol, Celebrex, and Gabapentin. During your stay, we will work to find a medication schedule with safe doses that helps to manage pain as best as possible. Please let your nurse know if your pain is not well controlled.

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. For patients who are not able to communicate their pain on a number scale, we use other clues for assessing their level of pain. This includes their heart rate, breathing rate, blood pressure, facial grimaces, body movements, sounds they make, and other signs. As their caregiver you know them best. Please share any information you think will help us take the best possible care of your child.

We will also use ice packs and heat packs to help with comfort after surgery. **See Holistic Health and Wellness (Appendix 3)** for other forms of pain control and relaxation techniques offered at Gillette during your stay.

Post-Operative Goals

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

- Manage pain effectively.
- Stop IV medications and transition to oral pain medications.
- Get out of bed
- Remove bladder catheter.
- Advance diet.
- Scheduled treatments with respiratory therapy
- Have home wheelchair adjustments started. (If needed).
- Spine brace fitting (if needed).

Day 2-4: Post-Operative Goals

- Keep managing pain effectively.
- Continue getting out of bed, increase time sitting in wheelchair.
- Work with PT on transfers
- Continue to advance diet.
- 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.
- Continue to work with Respiratory Therapy
- Get spine x-rays.
- Remove surgical drain on day of discharge.
- Finalize home wheelchair adjustments.
- Finalize spine brace fitting.
- Go home when ready and able.

Neuromuscular Spine Surgery Roadmap (Appendix 2)

For Caregivers

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 additional or more frequent assistance with cares. 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: Your child will be able to sleep in their usual bed after surgery. Additional pillows or blankets can help with positioning and comfort in the first few weeks after surgery.

Bathing: Only bed baths are allowed for the first 3 weeks following surgery. After your 3 week appointment, or after photos of incision have been reviewed by spine team, you will be told if it is ok begin showering and allowing water to run over the incision. If your child uses a shower chair, this will be able to be used after surgery as well.

Eating: Cook meals that can be frozen or reheated easily for your family and caretakers can help lessen burden during the recovery time.

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.

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 is common to have times when pain increases—especially when activity increases, too. It is also common for pain to be felt in different areas at different times. One day a shoulder may be sore, the next a hip may be sore; spine surgery is a major event that changes a lot of muscles groups in the body.

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.

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 unless specifically prescribed by your spine team. 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.

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.

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

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.

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 provider 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 is 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
- Continued signs of pain or distress after repositioning or after medications have been given
- 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 your Medication List (Appendix 1)**

Mobilizing and Repositioning

Mobilizing and Resting 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.

It is also very important that you continue to be out of bed multiple times throughout the day. The recommendation is to be in wheelchair for minimum 2 hour durations at least 3 times during the day. If your child receives routine PT, OT, and/or speech therapies, we recommend taking a break from these for 2-3 weeks after surgery. Then it is ok to resume these therapies, making sure to follow any post op restrictions that may be in place. This will keep your muscles strong, prevent stiffness, and promote healthy lungs after surgery.

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.

Caring for Incisions and Minimizing Scars

Your incision should remain covered for 3 weeks after surgery and only changed if it becomes contaminated with urine or stool. You will be given a kit with extra dressings and instructions for how to clean and change the dressing if this happens at home.

Avoid submerging the incision in bathtubs, pools, hot tubs, whirlpools or lakes until your doctor says it's okay 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.

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.

Watching for Infections Check the back daily for signs of infection. Even though the incision is covered by dressing, you would be able to see redness of the skin around the dressing, or increased drainage on the dressing as signs of an infection. If you need to remove the dressing for any reason, 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)

Diet

It is common to have less appetite, need a slower rate, or smaller amount of feeds for a few weeks after surgery. The pain medicine can decrease your appetite and slow down the motility of the gut. 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.

If your child is fed by G-tube, our pediatrics team will help guide how much and how fast nutrition is given after surgery.

If your child has a GJ-tube, initially they will be fed via the J tube with the goal to transition back to preoperative feeding regimen via G-tube. This may occur during your inpatient stay, or may occur at home. Our pediatrics team will give you specific instructions for this transition.

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 your child is fed by G-tube, our PrePARE team may recommend increasing the amount of free water or fluid they receive before surgery.

Bowel Management

It is not uncommon for children with neuromuscular conditions to have constipation. Undergoing spine surgery can make constipation problems worse. The anesthesia, pain medications, and lack of activity all contribute to the gut moving slower which results in constipation. Constipation can result in a longer hospital stay and increase the risk of complications after surgery.

A bowel management plan will be made specifically for you prior to discharge. The goal is to have one soft stool daily. Once you are no longer taking pain medications, you can return to your home regimen bowel program.

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.

Tips for Daily Life

For a period of time after surgery, many activities during the day might be uncomfortable and difficult to do without repetitively twisting or bending. Ask for help if you need assistance, and follow these tips.

Personal Grooming For three weeks after surgery, you cannot shower or submerge the incision in a bath. Instead, you should have a daily bed bath to help clean the body.

It is ok to wash your hair as long as you are not getting any of the dressings wet. You can tip your head over the sink or a basin and pour water over the top to help wash your hair.

Dressing: 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 the back.

For girls, sports bras can be challenging to put on because they require you to lift and move your arms and shoulders, which can be sore. 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.

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 repositioning, 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
- Unable to tolerate feeds or nutrition
- 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 does not go away after you change positions
- An unusual headache
- A bowel or bladder problem

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. If you use a wheelchair, you might need to modify the way you transfer in and out of your chair. If you participate in adaptive sports, ask your health care provider when you are able to return to play. A stander is ok to use after surgery right away based on comfort level. A gait trainer cannot be used until 4 months after surgery if your fusion included your pelvis. Your health care provider will tell you when you can use a stander or gait trainer, if applicable.

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. The night 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.

Before discharge from the hospital, you will receive:
- **Recommendation about gym class/therapy participation**
- **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)**

Q: When may I go swimming?
A: That depends on your particular surgery and recovery. Typically around 6 weeks after surgery 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 can I use my arms after surgery?
A: While there is no restriction on the range of motion of your arms, for 3 months after surgery you cannot lift more than ten pounds. For some patients, your surgeon may request that you not do any self-transfers or use your arms to scoot or move yourself from one place to another for a certain amount of time while you heal.

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: When can I resume using my mechanical lift?
A: It depends on your particular surgery and recovery. Your surgeon and/or physical therapist will discuss this with you before you leave the hospital. If you use a sling, please bring it with you to the hospital to make sure it is the correct size and type that is safe to use.

Q: How can my caregivers safely transfer me after surgery?
A: A physical therapist will help you practice these transfers before and after surgery.

Q: (For girls only) Is it true that I might get my menstrual period when I have surgery?
A: This is possible. It is 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.

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

Neuromuscular Scoliosis: A curvature of the spine that develops as a result of underlying neuromuscular condition

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).

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, to prevent movement, and to control pain.

Traction x-rays: While laying down, gentle straps are applied to chin and waist and gentle traction is applied to the spine to evaluate curve flexibility.

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

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)

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)

Why We're Different

Gillette provides specialty care to patients whose conditions include:

- **Complex conditions** such as cerebral palsy, epilepsy, spina bifida, scoliosis, hydrocephalus and muscular dystrophy.
- **Rare disorders** such as osteogenisis imperfecta, Rett syndrome, and spinal muscular atrophy.
- **Traumatic injuries** including spinal cord injuries, severe brain injuries, complex or acute fractures and sports-related soft tissue injuries.

These conditions demand time and specialized expertise - right from the beginning. We are undeterred in our efforts to find the reasons and the solutions.

We choose to focus on what is possible without downplaying or glossing over challenges. If a solution doesn't exist, we build it. If a question is unanswered, we research it. If a child has a dream, it becomes our dream, too.

Appendix 2:

Neuromuscular 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?

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

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

Pooped yet? Ask a nurse about a suppository or enema!

No bending or twisting

Up to chair

Bonus Question: what kind of dressing supplies will I need at home?

Spine Brace after surgery? Let's make sure it fits!

Discontinue pain med pump

Up to chair

How is the brace and/or wheelchair fitting?

Bonus Question: What medications will you be taking home?

How will my child bathe at home?

Day of Discharge

What questions do you have for your care team?

X-ray

Is there a drain in your back? This will be removed before discharge!

IVs out!

Bonus question: What are your activity restrictions?

Remember to take home your spine dressing kit

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

Nurse will help control your pain with pain med pump

Bonus Question: Describe how and why we reposition

Surgical drains help the healing process

Review the Roadmap

Breathing treatments and exercises keep lungs healthy

Start the transition to oral medications for pain management

Stomach Awake? Let's start eating or start enteral feeds. Ask your nurse!

Dangle feet at the edge of the bed

Start bowel meds to help get things moving

Pee

Remove bladder catheter

Review Education and Sign Discharge Paperwork

Attend Follow-up Appointments

Do you know the Telehealth Number?

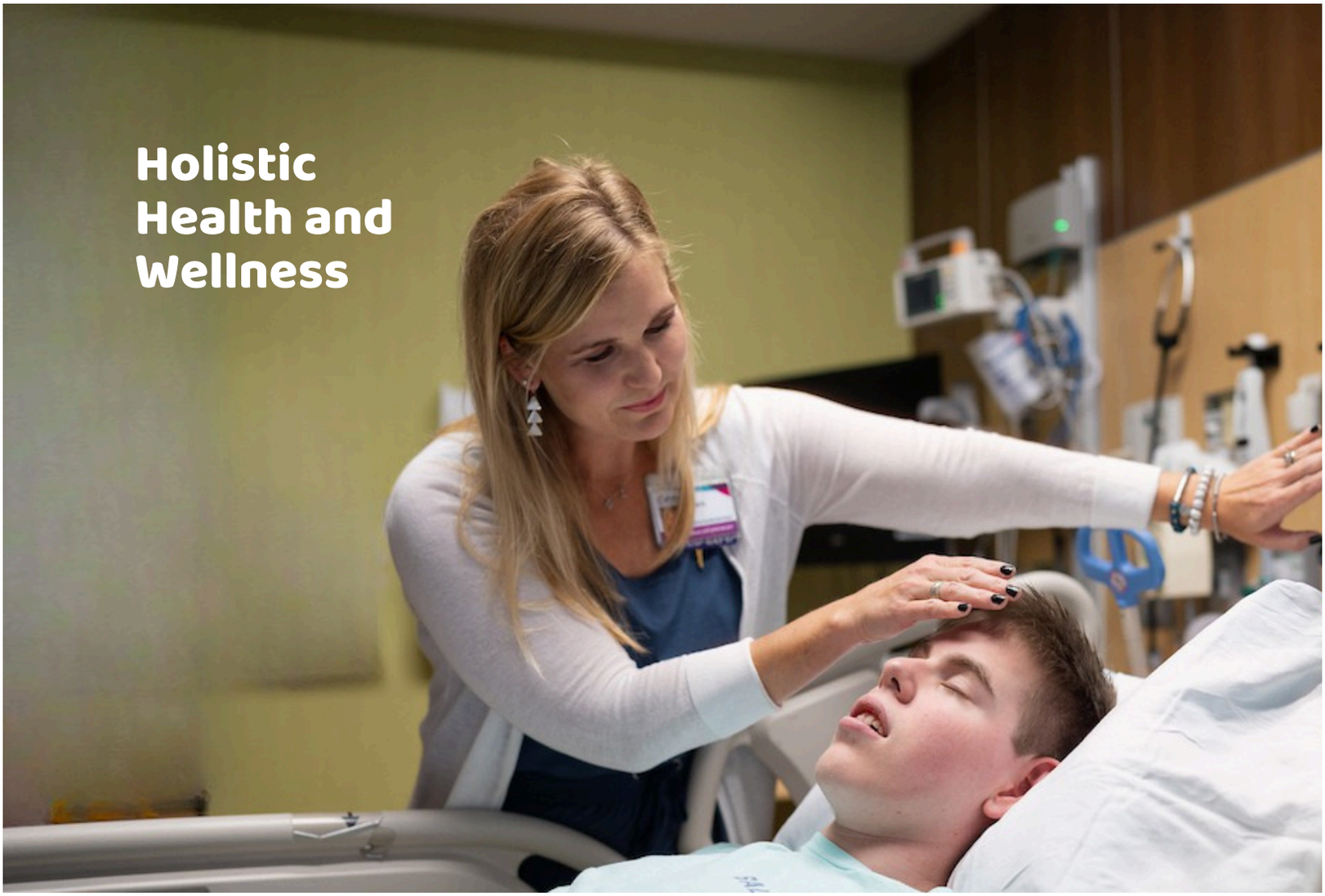
Get Medications from the Pharmacy

Home Sweet Home

Receive Follow-up Call within 48 Hours

Receive Survey about Hospital Stay

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.

PAED-020 04/2025