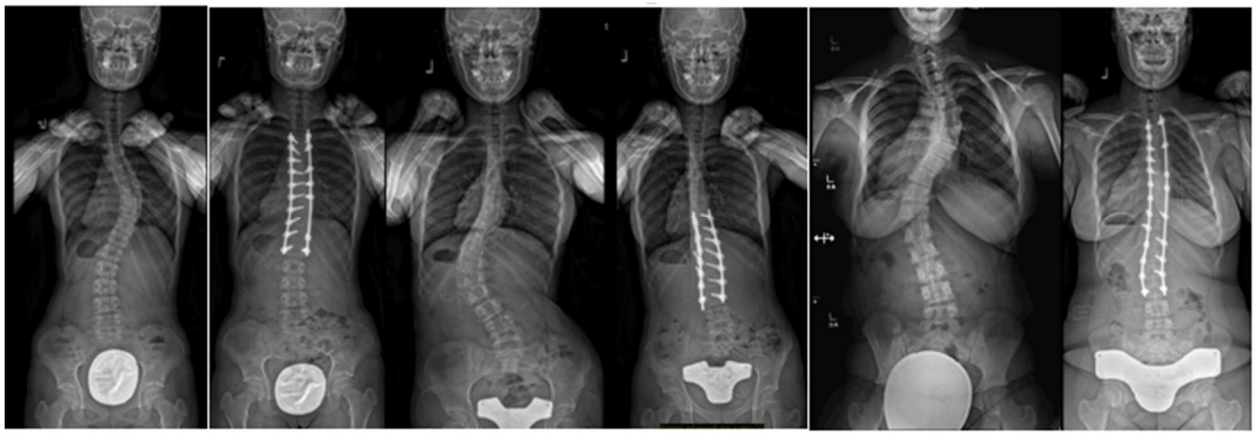
What to Expect
Your Child's Spine Surgery

A patient and parent's guide for pre-operative expectations and post-operative recovery.



NewYork-Presbyterian
Morgan Stanley Children's Hospital
Columbia University Medical Center

Columbia University
Medical Center

Columbiaortho.org/peds-spine
Pediatricscoliosissurgery.com

Columbia University
Medical Center

NewYork-Presbyterian
Morgan Stanley Children's Hospital

Welcome to Columbia Orthopedics

Dear Parent and Patient,

We would like to welcome you and thank you for selecting Columbia Doctors Division of Pediatric Orthopedic Surgery to care for your child. This book contains information that will help guide and prepare you for your child's upcoming spine surgery.

Our spine service here at New York-Presbyterian/Morgan Stanley Children's Hospital (MSCHONY) is one of the top programs in the country. Our clinical and academic expertise are second to none. We have a broad experience taking care of children with spinal deformities ranging from the otherwise well teenager with idiopathic scoliosis to the medically complicated child with underlying neuromuscular problems. We have used this experience to develop best practice guidelines, many of which are used nationally, that help us deliver the safest and best experience for you and your child.

MSCHONY is the major children's hospital in the tri-state area and offers a multidisciplinary approach to care. Your child will benefit from a range of nationally recognized pediatric care providers including Anesthesiology/ Pain Service, Physical and Occupational Therapy, Child Life, Nurse Practitioners and more. Our team treats hundreds of surgical spine patients every year and that expertise leads to improved outcomes, such as having one of the lowest infection rates in the country.

Our goal is to deliver the safest and best experience for your child and family during what we know is a difficult time. We thank you for entrusting your child's care in our hands, and we are always available to answer any further questions.

Sincerely,

Doctors Michael G. Vitale and Benjamin D. Roye

ColumbiaDoctors | *Pediatric Orthopedics*

Table of Contents

Your Clinical Care Team

The best way to get in touch with us is through the patient portal (MyChart) that allows you to send messages to the clinical staff. Please see page 5 for further instructions. You may also call the office number listed below between Monday – Friday between 9:00 AM and 4:30 PM. If you reach the voicemail, please leave a detailed message and your call will be returned within 24-72 business hours.

On weekends, holidays, and after business hours, calls to this number are directed to an answering service and forwarded to the doctor on call.

Dr. Michael Vitale's Team

Pediatricscoliosissurgery.com

For clinical questions: Amber Sentell Mizerik, PA-C, and Brianna Campbell, CPNP
(212) 305 – 5475: Follow prompts for Dr. Vitale's office

Surgical scheduler
Phone number: (212) 305-5732
Fax: (212) 305-0393

Dr. Benjamin Roye's Team

Columbiaortho.org/profile/Benjamin-d-roye-md

For clinical questions: Nikki Bainton, CPNP, and Julie Morales, RN
(212) 305 – 5475: Follow prompts for Dr. Vitale's office

Surgical scheduler
Phone number: (212) 305-5732
Fax: (212) 305-0393

Dr. Thomas Imahiyerobo's Team (Plastic Surgery)

For clinical questions: MaryBeth Katinas, CPNP
(212) 305-5868

Location: Columbia University Irving Medical Center, 161 Fort Washington Ave, 5TH Floor

Inpatient Nurse Practitioners

Francesca Graziano, FNP
Jennifer Crotty, CPNP

Contact Information

Online Messaging and Patient Records - Patient Portal (MyChart)

Columbia Doctors offers a patient portal (MyChart) that allows you to send messages to the clinical staff and office, as well as access your medical records (including x-rays, notes, etc.). This is the fastest way to reach our clinical team.

You must complete an application to access the portal at the front desk. If your child is over the age of 12 the account will need to be created under their name. They will then need to grant you "proxy" access. It is easiest to do this at the front desk while in the office. Make sure the settings for communication allow us to send you messages/attachments through the portal. Once you are granted access from our staff you can access the portal at: myconnectnyc.org/MyChart/Authentication/Login

School Notes, Physical Therapy Prescriptions, and X-ray Requisition Requests

1. You may send a request to your provider through the MyChart portal. This is the fastest way to receive any of the above requests.
2. You may also call 212-305-5475 to submit a request. Please have a fax number or address to send the requested item to.

Medical Records

1. You may access medical records through the MyChart portal.
2. You may also contact our medical records office with your request. You can find instructions on how to complete a request at columbiaortho.org/patient-care/resources/medical-records.

Patient to Patient Program

We have a program that connects you with other patients who have gone through the surgery. Please let us know if you would like to connect with another family. The process can take a few days but we will get back to you with their name and phone number once the family grants permission to be contacted.

The organization SCOLIOS-US also has a mentoring program for patients who have had spine surgery. You can find their information under "Organizations and Websites" on pg. 43.

General Hospital Information

Parking

Discounted parking is available for families staying 5 days or more. While most of our patients with idiopathic scoliosis stay for about 3 days, some may stay longer. If you are interested in receiving a letter to enable you to get discounted parking, please contact our surgical scheduler who will mail you the letter as part of your pre-op packet.

Insurance and Financial Information

Pre-Op

Our surgical schedulers work with your insurance to obtain prior authorization for the surgery and the hospital stay. They will contact you if there are any issues prior to the date of surgery.

Anesthesia

If you have questions about whether the anesthesiologist is par with your insurance, please call their billing office at (914) 709-8150.

Post-Op

If you have questions after the surgery about the surgical part of the bill, please contact our billing office at 201-346-7190. If you have a hospital billing question, please call (212) 305-6253

New-York Presbyterian Hospital Patient and Visitor Guide

To help ease the stress of hospitalization for you and your family, we have downloadable guides with information about what to bring to the hospital, services and amenities available to you, and what to expect. These guides can be found in English and Spanish at nyp.org/patient-guides.

Up-to-date visitation guidelines can be found at nyp.org/visitation-guidelines.

English

Spanish

Accommodations

You are allowed and encouraged to stay overnight in the hospital at your child's bedside during their stay. If you need outside accommodations, the following link takes you to a list of hotels in the area that provide special rates. Please mention NewYork-Presbyterian Hospital when booking to obtain the negotiated rate. https://nyp.widen.net/s/rtr5hnzdgm/patients-and-visitors-guest-accommodations-2024

Patient Checklist

1. First Steps

☐ Contact the surgical scheduler to arrange a date for surgery.

☐ Speak with the surgical scheduler about any **medical clearances** that you may need prior to surgery. Most patients only need to see their pediatrician, but if you regularly see any specialists (such as a cardiologist, or pulmonologist for asthma) please arrange appointments with those specialists. This includes psychiatry/mental health therapists.

Cardiology clearance can be within 6-month prior to surgery.

Pulmonology clearance is usually accepted within 4-6 weeks prior to your surgery.

Psychiatry clearance should include their recommendations for your medication use post-op and/or non-pharmacologic interventions. Your mental health provider will need to fill out our pre-op clearance form.

☐ Review this Spine Surgery Guide and write down any questions for your pre-operative appointment.

☐ If you have ***back acne*** please speak with your pediatrician about treatment or set up a consultation with a dermatologist. It is often best to have the back acne treated prior to surgery to decrease the risk of infection.

☐ Physical therapy prior to surgery may be helpful in post-op recovery for certain patients. Physical therapy is not necessary for all patients, but please speak to your surgeon if you think it may be of benefit to you.

☐ Complete your screening MRI if you have not yet had an MRI of your spine.

2. *One Month* Prior to Surgery

☐ If recommended by your surgeon, start gaining weight – generally at least 5-10 pounds. This will make up for the weight loss that often occurs during the post-operative period.

☐ You may start taking Ferrous Sulfate (iron) supplements or eating iron rich foods (see page 9) to improve your body's ability to regenerate blood after your surgery. You may also need a stool softener because iron can cause constipation. Both of these medications are available over the counter. **Please stop this medication 1 week before surgery.**

Ferrous Sulfate (Iron) – this can be found over the counter

- If child weighs more than 40 kg (88 lbs) – one Ferrous Sulfate 325 mg tablet or Ferrous Sulfate Elixir one time a day in the morning.
- If child weighs less than 40 kg (88 lbs) – 2 mg/kg per day – divided as 1 mg/kg in am and the same in the pm.

Docusate (Colace) – stool softener

- Ages 3- 6 years: Colace solution 25 mg twice a day
- Ages 7–12 years: Colace solution 50 mg twice a day
- Ages 13 and up: Colace 100 mg twice a day

☐ Please reference the Iron-Rich Foods List (Pg. 9) and try to increase your intake of these foods before and after surgery.

☐ Have your pre-operative appointment with your surgeon **within 30 days** of the surgical date. During this visit, bloodwork and x-rays will be obtained.

☐ Review the Hospital Patient and Visitor Guide (pg. 6).

☐ Pick up your morning dose of gabapentin (Neurontin) from your pharmacy.

☐ If you are planning on taking time off during your child's recovery, your job may require you to fill out a Family Medical Leave Act (FMLA) form. Please give us this paperwork as soon as possible and let us know how long you plan to take off so that we may fill it in accordingly. Please allow a 72-hour turnaround time for completion of paperwork.

3. *One to Two Weeks* Prior to Surgery

☐ Visit your pediatrician for clearance for surgery (please check with your pediatrician as to what their guidelines are for appointments for surgery clearance. Each pediatrician is different as to when they prefer the appointment to be). Please have them fill out the history and physical clearance form that will be sent to you from pedsortho@cumc.columbia.edu. Pediatrician clearance notes must be dated **within two weeks** of your scheduled spine surgery. Please have them fax the forms to the appropriate fax for each surgeon listed on the contact page. Please bring a paper copy of this with you on the day of surgery.

☐ Do not give your child Ibuprofen (Advil/Motrin) for at least one week prior to surgery. You may give them Acetaminophen (Tylenol) if they have pain.

4. *The Night Before* Surgery

☐ You will receive a phone call from the OR nursing staff the day before surgery between 2-6 PM. They will tell you what time to arrive at the hospital and when to stop eating and drinking. If you do not hear from them by 6 PM, you may call the nurses' station at 212-305-8670. If surgery is scheduled for a Monday they will call you the Friday before the surgery.

☐ Shower and use antibacterial disposable wipes over the entire back. Please refer to "Preparing the Skin the Night Before Surgery" on pages 16-18 in this packet for specific information. These products will be given to you at your pre-operative appointment.

☐ Remove any nail polish from your fingers and toes.

☐ Remove all jewelry including all earrings, bracelets, and anklets.

☐ For girls with long hair, we recommend braiding your hair the night before or the morning of surgery.

5. *Morning of* Surgery

☐ Take Gabapentin (Neurontin) as prescribed by your surgeon with 20 oz of Gatorade (any flavor but "red"). Please refer to our instruction sheet on page 15 for more information.

☐ Nothing to eat or drink the morning of surgery, except for Gabapentin (this includes no gum, candy, or water).

☐ You may brush your teeth but please make sure to spit out all the water.

☐ Do not take a shower. Do not apply hair product, lotion, or makeup.

☐ Bring all the necessary paperwork, including your PCP clearance.

☐ Report to the security desk on the first floor of Children's Hospital. You will be directed to the surgical unit on the fourth floor.

Iron Rich Foods

Food	Serving Size	(mg)
Bran flakes cereal	1 cup	24.0
Product 19 cereal	1 cup	24.0
Clams, steamed	3 oz	23.8
Total cereal	1 cup	18.0
Life cereal	1 cup	12.2
Raisin bran cereal	1 cup	9.3
Beef liver, braised	3 oz	5.8
Kix cereal	1 cup	5.4
Cheerios cereal	1 cup	3.6
Prune juice	1 cup	3.0
Potato, baked with skin	1 med	2.8
Sirloin steak, cooked	3 oz	2.8
Shrimp, cooked	3 oz	2.6
Navy beans, cooked	1/2 cup	2.3
Lean ground beef, broiled	3 oz	2.1
Swiss chard, cooked	1/2 cup	2.0
Rice krispies cereal	1 cup	1.8
Kidney beans	1/2 cup	1.6
Oatmeal, cooked	1/2 cup	1.6
Spinach, raw	1 cup	1.5
Tuna, canned in water	3 oz	1.3
Green peas, cooked	1/2 cup	1.2
Halibut, cooked	3 oz	0.9
Whole-wheat bread	1 slice	0.9
Apricot halves, dried	5	0.8
Raisins	1/4 cup	0.8
Broccoli, cooked	1/2 cup	0.6
Egg, boiled	1 large	0.6

Preparing for Surgery

Child Life Resources

While at the hospital you will meet Child Life Specialists who will help you navigate your hospital stay both before and after surgery. Child Life Specialists have special training in:

- Developmentally appropriate medical, hospital, and procedural education
- Support when a patient expresses fear regarding hospitalization, medical staff, and/or procedures
- Strategies for pain management, relaxation, and coping
- Distraction, alternative focuses, and support during procedures to ease anxiety and fear

Our Child Life Team offers a few ways to prepare for surgery before you get to the hospital:

1. Check out their online guide for scoliosis surgery at *childlifemsch.wixsite.com/post-scoliosis-surge* or through the QR code below for tips and advice, things to do while in the hospital, and strategies for coping.
2. Child Life has created a "Digital Prep Book" that walks you through all of the components of an in-person pre-operative tour. To request a copy of the digital prep book, please leave a voicemail at (646) 317-2665.
3. If you have any specific questions regarding how Child Life can help you through your hospital stay, please call the Child Life team at (646) 317-2665.

Spine Surgery Pre-Operative Class

Our orthopedic team offers Spine Surgery Pre-Op classes in which we review how to prepare for surgery, what to expect, and recovering at home. We typically offer classes in the springtime for those patients who are having surgery in the summer. If interested in attending, please ask a member of the team for upcoming dates.

We encourage you to watch a live recording of an in-person class, as well as the video "Tips from a Patient" at the following link or through the QR code below:
https://www.columbiaortho.org/patient-care/specialties/pediatric-orthopedics/conditions-treatments/spine-disorders-scoliosis/spinal-fusion-and-instrumentation

What to Pack

While packing, remember to think of clothing, comfort items, and distractions.

- *Clothing:* Most children are able to wear their own pajamas (though we do have pajamas for them if necessary). Because it can also be chilly in the hospital, bring comfortable, loose-fitting sweatshirts or long pants. Be sure to pack underwear, socks, and shoes as well.
- *Comfort items*: If your child sleeps with a special item that brings comfort or easily soothes him or her (such as a blanket, stuffed animal, or pacifier), please bring this item. You and your child will be happy to have something familiar while in an unfamiliar place.
- *Distraction*: While our hospital does have Child Life Centers (open from 9 AM – 5 PM) and families are welcome to access this space, we may not have your child's favorite toy or movie. Feel free to bring small items your child will enjoy to avoid boredom such as small toys, handheld game systems, music players with headphones, books/magazines, or school work.
- *Hygiene products:* We encourage girls to bring their own menstrual pads or tampons as it is common to get your menstrual period following surgery (even if you have just recently had it).

https://www.nyp.org/morganstanley/family-centered-care/preparing-for-your-visit/what-to-pack-what-to-expect

Check out the above website or the below QR code for more tips on what to pack:

For Parents

- While at the hospital there can be a lot of quiet time and waiting. We encourage you to bring quiet activities to keep yourself occupied.
- We have shower facilities for families, as well as refrigerators where you can keep food.
- There are pull-out beds or sleeper chairs in each patient room so that you can stay overnight.
- Please refer to the patient and visitor guide below for more information on how to prepare for your hospital stay:

English

Spanish

Mental Health Support

At the Pediatric Orthopedic Department at CUIMC, we are proud to be at the forefront of integrating mental health care into orthopedic care. We recognize the significant impact that mental health can have on a child's overall well-being and healing process. Research has shown that scoliosis and spine surgery can greatly influence mental health, including increased rates of anxiety and depression. We are proud to offer an integrated mental health program to all of our patients. The program ensures that mental health assistance is not just an afterthought, but a core component of the care we provide. Our dedicated Mental Health Coordinator works closely with both our patients and their families to connect them with mental health resources.

Here are some of the ways that we integrate mental health support into the care we provide:

- Screening for Mental Health Needs: We regularly use the PROMIS Pediatric Anxiety and PROMIS Pediatric Depressive Symptoms questionnaires to identify patients who may benefit from mental health support. These screenings help us to understand your child's emotional and psychological needs as they prepare for surgery.

- Access to Specialized Care: Our Mental Health Coordinator can assist you to find pediatric mental health clinicians through the Columbia system or a trusted local provider in your community. These clinicians have completed specialized training, including Scoliosis Training for Mental Health Providers, so they are well equipped to understand the unique challenges our patients face.

- Personalized Approach: We recognize that every family's needs are different. Our Mental Health Coordinator will take the time to understand your unique situation and preferences. They will assist you in coordinating appointments based on your schedule, insurance, and budget. We handle logistics, so you can focus on your child's health and well-being.

We encourage you to reach out to your surgeon and their team if you are concerned about your child's mental health at any stage of the treatment process. We are here to help you connect with the appropriate resources. Please let our team know if you see a mental health provider, and we will provide you with our pre-op readiness form for your provider to fill out prior to surgery.

Contact:

Julia Rakin, Mental Health Coordinator

Jr4593@cumc.columbia.edu or call (212) 305-5475 and ask to be transferred.

#HealingSpinesandMinds

Safety During Surgery

Blood Transfusions

The vast majority of spine surgery for idiopathic scoliosis is performed without the need for blood transfusions. We use many established techniques to limit blood loss in the OR, including recycling much of the blood lost during surgery and giving it back at the end of the case. Some children do require a blood transfusion during or after surgery.

The risk of getting an infection from a blood transfusion is extremely low because all donors are screened and their blood is tested extensively. For example, the risk of getting the HIV or Hepatitis B virus is approximately 1 in 2 million.

References:

- Transfusion-transmitted infections**.** J Transl Med. 2007; 5: 25. Published online 2007 Jun 6. doi: 10.1186/1479-5876-5-25
- healthychildren.org/English/health-issues/conditions/treatments/Pages/Are-Blood-Transfusions-Safe-for-Children.aspx

Surgical Site Infections

Infections can occur after any surgery, including spine surgery, although the risk is very low. Your surgeons take the risk of infection very seriously and take many steps to minimize the risk. We have created cutting-edge protocols that have reduced infection rates at our hospital and other hospitals around the country. The protocol starts with YOU and the chlorhexidine wipes you use the night before surgery. The protocol continues to include a multiple stage skin cleaning at the hospital, as well the use of antibiotics both during and after the surgery.

Neuromonitoring

One of the greatest concerns about spine surgery is the potential for injury to the spinal cord. Such complications are exceedingly rare in modern day scoliosis surgery, in large part because of the tremendous improvements in our ability to monitor spinal cord function in real time during the surgery. We have an extremely experienced team of neurophysiologists who are present for the entire operation, and they are credited with contributing to our incredible safety record here at MSCHONY.

What does neuromonitoring entail? A technologist skilled in all phases of intraoperative monitoring sets up the OR suite after anesthesia is administered. Electrode application is performed by placing sterile subdermal (needle) electrodes over the scalp and torso, as well as the nerves and muscles of the arms and legs. These electrodes provide the means of stimulating and recording responses from the patient throughout the procedure. The patient feels nothing as they are under anesthesia. The system is networked directly to neurologists who oversee the procedure and can communicate with the surgeon, anesthesiologist, and monitoring technologist at a moment's notice. The electrodes are removed at the end of the procedure before the patient wakes up.

Possible tongue biting during motor stimulation is avoided by placing a bite block between the patient's upper and lower teeth. Minor bleeding and bruising from the subdermal electrode placement is possible but temporary. The benefit of neuromonitoring far outweighs these small risks.

Contact: Neurophysiology/IOM – The Neurological Institute of New York
(212) 305 - 0392

Anesthesia

What type of anesthesia will I receive?
During your spine surgery you will be administered general anesthesia, as well as medication for the relief of pain and sensation during surgery.

Do I talk to the anesthesia team prior to my surgery?
Your surgeon may request an anesthesia consultation if you have a specific medical issue. If this is the case, you will have a pediatric nurse practitioner who works directly with the anesthesiologist call you prior to surgery to review your medical history.

Who will call me with instructions prior to surgery?
The night before surgery, you will receive a phone call from a post anesthesia care (PACU) nurse. They will ask questions about your child's current state of health, review your child's medications, and review your child's NPO (when to stop eating/drinking) guidelines in preparation for surgery.

Why do I need an empty stomach prior to surgery?
It is important that you have an empty stomach prior to surgery so that there is no risk of aspiration, or airway obstruction, during the surgery.

Will I meet the anesthesia team prior to surgery?
Yes, you will meet the anesthesiologist the morning of the procedure to review your medical history and plan the appropriate anesthetic for surgery.

Will I receive medication in the pre-op area before going to the OR?
In the pre-op area, your child may or may not receive pre-medication. If you feel that this would benefit your child, please speak to your surgeon at your pre-op appointment, as well as the anesthesiologist in the pre-op area.

How many visitors are allowed in the pre-op area?
Two adults are allowed in the pre-op area. However, you can have family members "swap" out with one another if you have more than two adults who would like to come back to the pre-op area.

Will I be able to go into the OR with my child?
You will typically say goodbye to your child in the pre-op area. This is to decrease the risk of infection by decreasing the number of people in the operating room. A child life specialist can help your child transition from the pre-op area to the operating room. Parents then meet their child in the recovery room after surgery.

Questions?
Pediatric Anesthesiology: (212) 305 – 2413
PACU Nurse: (212) 305 – 8670

Plastic Surgery

Some patients (not all) are closed with plastic surgery. The following information is intended for patients who have a plastic surgeon involved in their surgery. It is typically at your surgeon's discretion if a closure with plastic surgery is recommended. If you have questions about this, please speak with your surgeon. If you are closed with plastic surgery, here is some information on what to expect.

Pre-op Visit

- If plastic surgery is involved in your surgery, you will meet them via video visit prior to your procedure.

Surgical Technique

- When the orthopedic team has completed the portion of the case, the plastic surgery team will then close the incision.
- This is a multi-layered closure; the incision is closed from the inside out beginning with the deeper tissues.
- Absorbable sutures are typically used. These stitches will dissolve on their own.

Dressing and Drains

- The incision site is covered by a sheer tape called "Prineo" followed by a thicker dressing called a "Mepilex"
- You will go home with both the Prineo and Mepilex in placed. They will be removed at your follow up visit.
- It is possible your child will have one or two drains after surgery (only if closed by Plastic Surgery). The drains allow fluid to passively drain while the back is healing. They will stay in place until the post-operative appointment.
- The inpatient team will teach you how to manage the drain at home
- You will be responsible for emptying the drains at home and recording the output

Nutrition

- Diet is an important component of the wound healing process.
- Please prioritize adequate iron and protein intake in your child's diet to promote healing.

Post-Op Follow Up

- You will have a post-op appointment with plastic surgery 10-14 days after discharge.
- Your dressing will be removed and the incision assessed.
- The decision to remove the drains will be made at this visit.
- Incision care and scar management will be discussed and reviewed.

Scar Optimization

- Once the Prineo or steri-strips fall off you can begin to use a silicone-based scar gel (NewGel+ is the recommended brand). You do not need a prescription and can purchase it on Amazon.
- Massage the area counterclockwise 2x/day for 3-6 months (with or without the scar gel).
- Protect the scar from the sun for 1 year after surgery. Make sure to cover the scar with a shirt, rashguard, sunshirt, or bathing suit. Use sunscreen with SPF 40+ or scar tape (3M Micropore 1") over the incision.

Pre-Op Gabapentin and Gatorade

Why do we use Gabapentin and Gatorade prior to surgery?

- Multiple Randomized Control Studies have found that administration of analgesic (pain relief) medication before the onset of a painful stimulus contributes to better overall pain management. Based upon this evidence, we begin the process of controlling your child's pain before surgery.
- Gabapentin is a medication used for neuropathic pain. Several studies have shown that preoperative gabapentin consumption can help reduce pain in the early postoperative period.
- The purpose of Gatorade is to hydrate your child and provide electrolytes, which will help with the recovery.
- In addition to pain management, gabapentin can also reduce pre-operative anxiety. For this reason, it may make your child slightly drowsy.

Instructions

- At the pre-op appointment we will order one dose of gabapentin that your child is to take on the morning of surgery.
- Take the medication with a 20 oz Gatorade (any color except red).
- **The Gatorade and Gabapentin are to be finished no less than 2 hours prior to your surgery time.**
- The OR nursing staff will call you the night before surgery to let you know your final surgery time and what time to arrive at the hospital. *Although you will be instructed not to allow your child to have anything by mouth on the day of surgery, this medication and Gatorade are both allowed exceptions!*

Contraindications

- There are a few instances in which gabapentin is contraindicated (i.e. use of seizure medications, antidepressants or antianxiety medications, or other medical conditions). If you have any concerns, please address them with your surgeon at the pre-op appointment.

Is gabapentin prescribed as a pill or liquid?

- Gabapentin is usually prescribed in pill form. If your child needs the liquid form, please let us know and we can prescribe it to the hospital pharmacy who carries the liquid.

Preparing Your Skin with Chlorhexidine Disposable Cloth or Wipes (Pediatrics)

Why should I clean my child's skin?
Your child's condition, treatment, or medicine can lower his/her ability to fight infection while in the hospital. Germs on your child's skin can cause infection. It is important to clean your child's skin before surgery to decrease the risk for infection. CHG is available as a liquid soap or as a disposable wipe, which makes skin cleaning easy. These disposable, moistened cloths contain 2% Chlorhexidine Gluconate (CHG) antiseptic solution and are rinse free. They kill many bacteria on your child's skin.

When should I clean my child's skin?
Clean your child's skin the night before his/her surgery. Adolescents who clean themselves will need help from an adult to wash hard to reach areas (such as their backs).

How do I use CHG wipes?
First, shower and shampoo your child's hair. Dry your child's skin with a clean towel. Open all packages of wipes. You will have two to six wipes total. Use all wipes provided to clean your child's body in the order indicated on page three of this guide. **Do not shave your child's hair.**

When cleaning neck, shoulders, and chest, **do not** use CHG wipes on your face, eyes, nose, mouth, or ears. When cleaning arms, be sure to clean front and back, both hands, between fingers, and armpits. When cleaning legs, be sure to clean front and back, feet, and between toes.

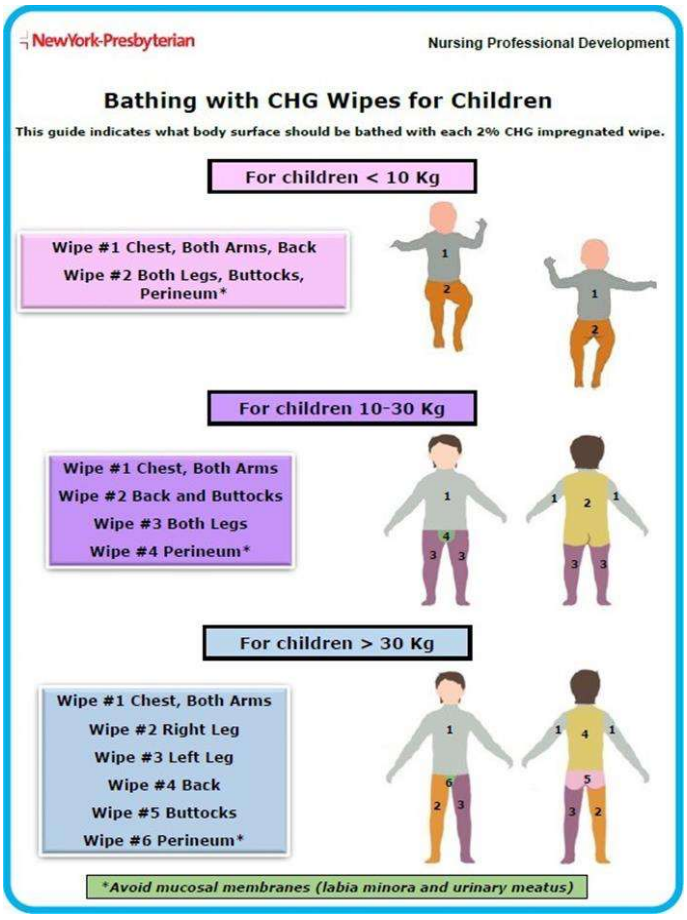
Your child's skin may feel sticky after using CHG wipes. Do not rinse after using CHG wipes. Let your child's skin air dry. Dress your child in clean sleepwear. Do **not** shower or bathe them on the morning of surgery. They may come to the hospital in that sleepwear or clean clothing the morning of surgery.

What if I have soap instead of wipes?
Use CHG soap to lather a clean wet washcloth, and lather your child's entire body from the neck down in the same order as in the diagram (except do not use the soap on or around your child's groin). With the shower water off, gently scrub your body for three (3) minutes. Rinse the soap off completely. Pat skin dry with a clean towel.

Can I use lotion after using CHG wipes?
Many lotions are **not** okay to use after CHG wipes. Do not apply any lotions, powders, deodorants, or makeup after using CHG.

Are there any reasons not to use CHG wipes?

- Do not use CHG if your child is less than two months old. (For cardiac procedures, CHG wipes should be used for patients after 37 weeks gestation.)
- Do not use CHG wipes if your child has an allergy to chlorhexidine (CHG).
- Do not use CHG wipes on open sores or rashes. You can still use the CHG wipes on the areas of skin that do not have sores or rashes.
- Stop using CHG soap if your child develops a new rash.



Tips

- **Avoid face, ears, & scalp**
- For arms, wipe from shoulder to fingertips, including underarms
- Wipe skin folds in abdominal and groin areas
- **Avoid labia minora, urinary meatus, & rectum**
- For legs, wipe thigh to toes, including back of knees
- For back, wipe from neck to waistline
- For buttocks, wipe from waistline to top of thighs
- Pay special attention to commonly soiled areas such as the neck, skin folds, and perineal areas

What to Expect Post-Op

Day of Surgery (Post-Op Day 0)

- Most patients will go to the Progressive Care Unit (PCU) after surgery.
- Some patients with underlying medical conditions may go to the Pediatric Intensive Care Unit (PICU).
- You will leave the OR with many devices! These include:

  Intravenous Line (IV) – You will have 2 or more IVs in your arms. The IVs provide you with fluid and medications. They will stay in place until you leave the hospital.

  Foley Catheter – This is a tube that goes into your bladder to drain urine. It allows your nurses and doctors to carefully track how much urine you are making. This is usually removed the day after surgery once you are able to get out of bed.

  Surgical Wound Drain – There will be 2 or 3 drain tubes coming out of your back next to the surgical incision. These are there to prevent fluid from accumulating under the incision. These are usually removed before you go home, or at your post-operative visit if a plastic surgeon was involved.

  Sequential Compression Devices (SCDs): These are special wraps on your lower legs. They are connected to a pump that fill them with air every few minutes to encourage blood circulation in your legs. They are used to prevent blood clots (a very rare complication of all surgeries).

  Patient Controlled Analgesia (PCA) Pump: This pump gives you a dose of medication through your IV when you push a button. See page 21 for more information on how the PCA pump gives you the ability to safely control your pain.

Post-Op Day 1 and Beyond

The day after surgery you will probably leave the PCU and go to the regular hospital floor. Most patients go home on the third day after surgery. Here is what to expect during a typical day in the hospital:

- Early in the morning (usually before 7:30am) members of the Orthopedic Team (your surgeon, the orthopedic fellow, residents, and nurse practitioners) will come by to examine you and answer any questions you may have. Your surgeon may come by to see you later in the day.
- The pain service will check on you every morning to make adjustments to your pain medications.
- A phlebotomist may come by to draw blood tests.
- Throughout the day a nurse or a Nurse's Aid will come by to record your vital signs every few hours.
- Physical and occupational therapy will come to help you get out of bed, walk, and eventually go up and down stairs (see page 23 for more details on PT and OT).

Incentive Spirometry

- An incentive spirometer is a plastic device that measures how forcefully you are able to take a deep breath to keep your lungs fully inflated and healthy. The incentive spirometer helps to prevent lung complications like pneumonia.
- Your nurse will show you how it works. It is very important to use your incentive spirometer while you are in the hospital as well as when you go home. *Please bring this home with you so that you can continue using it for the first several weeks after surgery.*

Eating and Drinking After Surgery

- You will start with clear liquids (such as water, apple juice, and Jello). Gradually as your "belly wakes up" and your appetite returns, you can begin to eat your regular diet. Sometimes sugarless chewing gum can help encourage your digestive system to get started again.
- It is important to eat as you need the calories to heal your body!

Pain Management

One of the advantages of being a major children's hospital is that we have specific programs focused on your child's needs. We work closely with the Pediatric Pain Team to optimize your child's comfort after surgery. The Pain Team will see your child immediately following surgery and uses a multimodal approach to make changes to their pain management as needed throughout your stay.

Pain Medications

- We take a multimodal approach to pain management and use a variety of pain medications to adequately control pain. These include both opioid and non-opioid medications.
- The Pain Team typically uses a PCA (patient-controlled-analgesia) pump that allows patients to give themselves medication when they need it. Please see page 22 for more information on the PCA pump.
- Your child will have an intravenous line after surgery, through which many pain medications can be given. Your child will then be transitioned to a pill or liquid form as you prepare for discharge.

Assessing Pain

- We use several different assessment tools, including numeric or illustrated scales, to assess your child's pain.
- We also use your child's vital signs and overall clinical picture to assess pain.
- You know your child best. If your child seems to in discomfort, or is unusually agitated or withdrawn, please let your clinical team know so that we can address their pain.

Non-pharmacologic Strategies

Parents can comfort their children better than anyone else. The following are some suggestions that might prove helpful in comforting your child.

- Ask for help from the nursing staff if you would like to hold your child, but are not exactly sure how to do it safely with their equipment, lines, or bandages.
- Play is a familiar part of a child's day and can help relieve tension and provide distraction. If your child has started getting out of bed, ask about the playroom in the hospital that they can visit. Bring books, coloring books, puzzles, board games, and other toys that can be used in bed.
- Ask if a DVD is available, or have some movies or TV shows ready on a laptop or tablet to stream from your room. You can also ask about the hospital's video game center that you can use!
- Ice can alleviate pain, as well. In the hospital we use the NICE Machine for post-operative spine patients. It is a "cryotherapy unit" that uses cold therapy for pain-management. Combining cryotherapy with a multi-modal pain regimen can lead to reduced opioid use, shortened hospital stays, fewer GI side effects, and an overall better recovery experience.

What are the side effects of pain medications?

- Constipation: Many medications used for pain control, such as opioids, can be constipated. Stool softeners and laxatives are used to minimize this side effect. The surgery itself can also slow down the motion of your intestines temporarily. Because of this, many patients do not have a bowel movement for 5-7 days after surgery. This is normal and is not a cause for concern. We recommend lots of water, fruits, and vegetables that are high in fiber.
- Adverse effects: The following adverse effects should be reported to your child's medical team as soon as possible – itching, excessive drowsiness, confusion or hallucinations, nausea/vomiting, slow or shallow breathing, or difficulty urinating.

Patient Controlled Analgesia (PCA) Pump

How does a PCA Pump Work?

Patient controlled analgesia (PCA) is a way to give pain medicine using a special pump attached to you/your child's intravenous (IV) line. Your pain management team will decide which type of pain medicine should be given and how much. Here are some terms you may hear about the PCA:

A "demand" dose:

A dose of pain medicine given to the patient after they press the PCA demand button. ONLY the patient may press the button. The parent, nurse, or physician CANNOT press the button. Usually the PCA demand button is not given to children 8 years old and younger.

A "lockout" period:

The amount of time between doses allowed to be given by the PCA demand button. This is a safety feature of the PCA. If the patient pushes the button during the lockout period, the pump cannot give another dose.

A "clinician bolus" dose:

This is usually a slightly larger dose than can only be given by the patient's nurse.

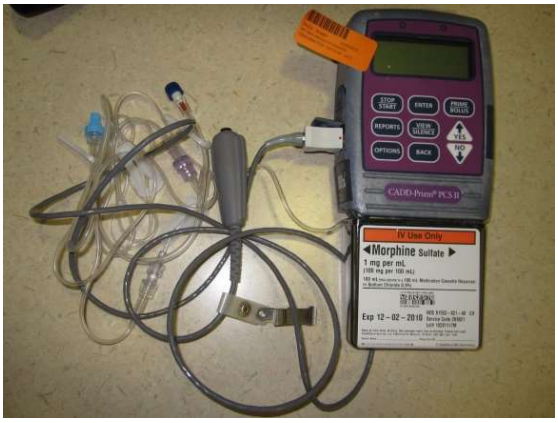
A "continuous infusion":

This may or may not be used depending on the patient's age and the amount of pain they are having. It is a small, continuous amount of pain medicine given through the PCA.

The pain management team will visit you/your child to review the number of times the patient pressed the demand button and will assess his/her pain score. The pain management team may increase or decrease the amount of pain medicine depending on how much pain the patient is having.

Helpful Tips

- After the patient pushes the demand button, wait a few minutes for the pain medicine to work.
- The patient should ONLY push the button to help control pain, not to help with falling asleep or to help decrease anxiety.
- The patient should be encouraged to push the button before certain activities that may hurt, such as having a surgical dressing changed or getting out of bed.
- If the patient/parent still feels the pain is not improved after pushing the demand button, they should tell the nurse and have the primary or pain management team called to help.
- A clinician bolus may be needed a few minutes before activities that may cause a lot of pain such as physical therapy.



Inpatient Post-Operative PT and OT

Who are the members of the therapy team?

Physical and Occupational therapy is ordered after surgery to assist your child with mobility. The physical therapist (PT) will help you with walking, strengthening, improving balance and endurance. The occupational therapist (OT) helps you with your activities of daily living which include dressing, using the toilet, and bathing.

Why is therapy an important component of your spine surgery recovery?

- Early mobilization helps the body adjust to the new alignment of their bones and muscles post-surgery.
- Mobilization helps to improve breathing by allowing your child to take deeper breaths (while sitting the lungs can expand more). Expanding lungs is important to prevent pneumonia and improve oxygen intake. Taking deeper breaths pushes the limits of tight muscles around the rib cage so your child can try to rely less on pain medicine.
- Movement helps with blood pressure. Often a child's blood pressure can drop when they first sit up, sometimes to the point of fainting. The more your child practices sitting up the less likely this is to occur.
- Gout of bed helps relieve unnecessary prolonged pressure on specific parts of the body when the child is mainly lying in bed.

POST OP DAY ONE Goals

- Trying to sit at the edge of the bed and build up sitting tolerance. If the vital signs are stable, the therapist(s) will progress your child to standing and transferring your child into the chair or onto the couch.
- Proper alignment in sitting is key. Notice if your child is leaning to one side (usually to side that they used to lean to). The goal is to try to sit up for as long as your child can tolerate. This is the best time to try to engage your child and keep them awake!
- We advise you to breathe when changing positions. Holding the breath (bracing) usually causes more pain. For example, before sitting it is good to take a deep breath in and exhale as you sit down.

<u>Some things to expect when getting up for the first time:</u>

- Initially more pain (if you have a PCA, press before moving or ask your nurse for more pain medicine)
- Dizziness/lightheadedness
- Vision disturbances
- Nausea

<u>Reasons to return to bed:</u>

- Unable to tolerate pain
- Dizzy/lightheaded and about to faint
- Extreme fatigue causing your child to lean too far forward or to the side
- Difficulty breathing
- **Please contact your nurse via call button and either the nurse or therapist(s) will help you return your child to bed. Do not try to perform the transfer on your own unless you have discussed it with your therapist(s). All of us are here to assist you. Please use our help.*

<u>Other things to note:</u>

- If your child is just experiencing a sore buttocks please ask a staff member (Nurse or therapist) to help stand your child up to relieve the pressure so then they can continue to sit longer. A sore buttocks should not be a reason to go back to bed.
- On some rare occasions children are able to take a walk on the first day. Many factors influence this such as stable vitals and pain tolerance.

- You can perform simple exercise with your child as long as you feel comfortable with the lines/tubes/drains. Your therapist(s) will discuss and demonstrate these exercises.
- Use the incentive spirometer - perform minimum 10x/hour – if your child likes to watch TV, try to have them use the machine or take deep breaths during commercial breaks. Do not take too many breaths as you can hyperventilate and become dizzy.

Goals for POST OP DAY TWO, THREE, and Beyond

- Continue to progress mobility and return to walking.
- Increase sitting up time and initiating first steps. Progress will depend on your child's pain tolerance and stability of their vital signs. Every one of us experiences pain differently and we will progress them based on their needs.
- We like children to tolerate a minimum of 1 hour (or at least the length of time they will be sitting in the car on way back home) before discharge.
- Once your child can walk around 80-100 feet we will attempt walking up and down the stairs.

POSITIONING / PROPER ALLIGNMENT for the Hospital and at Home

While in bed: Usually one of the more comfortable positions is on a side. A child can change sides while utilizing the log roll technique (rolling to the side with hips and shoulders fused together as one piece, like a log so not to create twisting over the spine).

While in a chair or on the couch: It is best to sit up as straight as possible without slouching or leaning too far back. You can add pillows to help sit your child up if their buttocks cannot touch the back of the chair. Depending on your child's age and height, if their feet do not touch the floor you may ask a nurse or therapist for a step stool so their feet are not dangling. This helps keep the spine and pelvis at a more comfortable and proper angle. Side to side leaning can occur. Please keep an eye on your child and encourage or assist midline alignment.

While walking with your child: Keep an eye out for elevated and stiff shoulders. Encourage your child to exaggerate their arm swing during walking to loosen up the upper back. The quality of the steps is important return to a more smooth pace/step pattern (versus a very robotic and stiff one that usually occurs early on). Try to stay close to the room or nurse station in case your child needs assist and always report to the nurse when you are going for a walk.

EXERCISE

Please discuss with your PT and OT if there are any particular restrictions to performing exercise and which ones you can focus on with your child.

BREATHING

Please encourage your child to use the incentive spirometer. If this tool is too hard to use you can encourage your child to just take deep breaths by:

- Asking them to blow kisses to you or just take deep breaths
- Pretending to blowing out a candle
- Blowing bubbles (You can as your nurse, therapist or child life specialist – we have plenty)
- Blowing at a napkin to keep it up in the air as long as possible

RED FLAGS – When to contact your nurse:

- Your child is unable to move their limbs
- Your child report feeling spreading pins and needle sensation and/or numbness
- Your child is having difficulty breathing
- Anything else you find abnormal or your child reports to you – It's better to report things early!

Discharge Planning

Equipment

- Discuss with Social Work and/or Patient Care Coordinators if you need any equipment, school notes, home nursing, physical therapy referrals, or ambulance for transport.
- It is exceedingly rare that patients require a hospital bed for home. If PT recommends that you need one, you can speak with the social worker about renting one. Often these are not fully covered by insurance.

Physical Therapy

- Most patients do not need physical/occupational therapy upon discharge. If we think it would be beneficial for you, it will be recommended either by the therapists or by the surgeon. If you do outpatient PT it will start at 3 weeks post-op or beyond.
- If you did Schroth or Physical Therapy prior to surgery you may find it helpful to do a few sessions after surgery.

Education

- Your inpatient team will teach you how to take care of any drains or equipment that you are going home with.
- Re-read this Spine Surgery Guide to review post-operative expectations and how to best prepare for home.

Medications

- You will receive prescriptions for pain medication. If needed in liquid form, please fill the prescription before leaving the hospital at Melbran Pharmacy (across the street from the hospital) as most pharmacies do not carry the pain medication in liquid form.
  - Melbran Pharmacy: 605 W 168th St.
  - Phone number: 212-568-1300
  - Hours: Hours: M-F 9 am – 6 pm; Sat. 10 am – 3 pm; CLOSED ON SUNDAY AND HOLIDAYS
  - *If you know that you are being discharged on Sunday, please obtain the medication on Saturday.
- Please see page 31 for more information about medications for home.

Helpful Items For Home

- Neck wrap for the microwave and freezer to be used on the neck, incision, and back.

  Please do not use plug in heating pads! Since it is normal for the incision and back to be numb after surgery, plug-in pads are a burn risk.

- Recliner to sit in an upright but reclined position at home. If you do not have a recliner, you can purchase an antigravity chair (pictured here). It can be found on Amazon. Many are available with removable cushions for comfort.

Surgical Incision

How is the incision closed?

- Most of the time, the incision is closed with self-absorbing sutures so there is no need for sutures to be removed.
- Sometimes staples are used and these need to be removed 2-3 weeks after the operation.

When is the dressing removed?

- The dressing on your back will be **changed** before you leave the hospital by one of our nurse practitioners (or plastic surgery, if they were involved).
- The dressing will be **removed** at your first follow-up appointment (7-10 days post-op).

When can I shower?

- Do not shower prior to your first post-operative appointment. You may sponge bathe until then.
- It is very important for infection prevention to continue your daily hygiene routines in and out of the hospital! This includes brushing your teeth, sponge bathing, etc. before your dressing is removed.
- You can shower and use soap after the dressing is removed, typically 7-10 days after surgery at your first post-op appointment.

When can I swim or take a bath?

- Do not submerge the incision fully into water (i.e. baths, swimming) until **4 weeks** after the surgery.

Is it normal to have numbness around the incision?

- It is normal to have numbness around the incision after surgery. The area of numbness will get smaller over time, but this can take up to a year or sometimes even longer.
- Sometimes the incision can also be hypersensitive after surgery. Please see the next page for tips on how to desensitize the incision.

Call the Office at (212) 305-5475 if:

- You develop a fever (>101 degrees)
- Your suture line becomes red, swollen, warm to touch, or if there is significant drainage from the wound
- If you have significant pain that is not being controlled by pain medication
- If you experience numbness, tingling or weakness in your legs or feet
- If you start vomiting
- If your JP drain is leaking, becomes disconnected/dislodged, or has a foul odor please call the plastic surgery office **212-305-5868**

Surgical Incision, cont.

Sun Protection

It is best to keep the incision out of the sun *for a year* after surgery to promote wound healing.

- If you will be outside or going swimming, we recommend covering the incision with a swim shirt, t-shirt, or a bathing suit.
- Apply sunscreen (at least SPF 40+) to the incision and don't forget to reapply as needed.
- You can also use a silicone tape to cover the incision to protect it from the sun. The name of the tape is 3M micropore tape (there is a flesh-colored version) and can be found at a pharmacy, medical supply store, or online.

Desensitization

Some patients experience hypersensitivity, or increased sensitivity, on and around the surgical incision. The way to improve this is by giving the area stimulus through touch to "desensitize" the area. We recommend using the following step-wise approach to desensitize your skin if your scar is feeling extra sensitive:

- Brush different types of material on the areas that are super sensitive (do it around the scar and not directly on the scar especially in the beginning).
- Start with a softer material like plush (so like a plush blanket or stuffed animal or something like that) and have them do it for a couple minutes a day.
- Then once you aren't as sensitive to the plush, use like a cotton t-shirt or similar material.
- As you become less sensitive to each material, progress to rougher materials so after the cotton, use a t shirt that's a little rougher of a material than cotton and then after that a little rougher of a material like a towel.

Follow Up Appointment Schedule

☐ **7-10 days after surgery** either by video visit with Amber, PA (Dr. Vitale's patients) or in-person with Nikki, NP (Dr. Roye's patients).

At this appointment we will assess your incision, discuss pain management, and answer any questions that you may have.

You will not need x-rays at this appointment.

☐ **10-14 days after surgery** in-person with plastic surgery if closed by plastics.

☐ **6 weeks after surgery** with your surgeon.

You will get scoliosis x-rays at this visit. We will discuss your return to school and activities, and answer any questions that you may have.

☐ **6 months after surgery** with your surgeon.

You will get scoliosis x-rays at this visit.

☐ **1 year after surgery** with your surgeon.

You will get scoliosis x-rays at this visit.

☐ **On an annual basis** with your surgeon.

You will get scoliosis x-rays at these visits

Plastic Surgery Instructions

- Plastic Surgery will see you in the office in 7-10 days after you are discharged from the hospital
- After removing the Mepilex dressing only the Prineo tape or steri-strips remain.
- Please allow the dressing to fall off on its own- this usually takes 1-2 weeks
- After the JP drains are removed the sites will close on its own, change the dressing if draining and as needed.
- You can shower after 48 hours of the drain removal if the sites are no longer draining.
- You can submerge in water (swim, bathe) after 4 weeks from surgery.
- If suggested use the ACE wrap for an additional week around the trunk with breaks to shower to prevent fluid collection after the drain removal.
- Diet is very important in the healing process. Patients may not be back to their normal eating habits for a couple of weeks but please **prioritize iron and protein intake** to promote wound healing.

Caring for the Jackson Pratt (JP) Drain at Home:

- Your drain is stitched in and it is covered with a sterile gauze dressing that you do not need to change.
- You will empty the JP drain(s) **twice a day**.
- When you empty a JP bulb, unplug the stopper and empty the contents into a cup that is marked with milliliters. Record the amount each time. Pour the fluid contents into the toilet. If the bulb fills up halfway then it is time to drain the bulb. After emptying the fluid, squeeze the bulb and place the stopper into the bulb. This action creates the suction needed to draw out the body fluid. When the bulb is compressed, it resembles a donut shape. The bulb will expand as fluid drains.
- **You will need to record the output on your JP drain(s) twice a day.**
- **Please record each JP drain output on the attached log.**
- Goal for removal of the drain is for each JP drain to have 20 mL or less for 2 consecutive days.
- If any issues arise with your drains while at home such as; leaking, disconnected, increased drainage, no drainage and/or any other concerns please call the Plastic Surgery office at 212-305-5868.

PLEASE RECORD THE DRAIN OUTPUT TWICE A DAY & BRING TO THE OFFICE FOR YOUR FOLLOW UP APPOINTMENT

JP Drain

DATE	DRAIN #1		DRAIN #2	
	AM	PM	AM	PM

Our multidisciplinary team will determine what medications you should be discharged on. These usually include:

1. A short acting opioid (narcotic) pain medication such as oxycodone.
2. Acetaminophen (Tylenol) and a non-steroidal anti-inflammatory medication such as ibuprofen (Advil/Motrin) are also added to the medication recommendations.
3. Medications for nausea and vomiting are occasionally prescribed.
4. A stool softener and/or laxative to prevent constipation while on the opioid pain medication.

Weaning Opioids

You will start to wean the opioid medications as soon as you are discharged.
You will need to wean the oxycodone slowly over several days. The following is a suggested timeline to increase the amount of time between doses:

- Start by stretching the doses to every 6-8 hours for a couple of days.
- Then stretch the dose to every 12 hours for a couple of days.
- Finally, take the medication at nighttime only for a couple of days.

You can use ibuprofen and acetaminophen in between narcotic doses to manage the pain. Do NOT wean the ibuprofen and acetaminophen until you have stopped the narcotic.
You can begin to decrease the stool softener and laxative as you wean the narcotics.

Safe Opioid Disposal

Once you have stopped all opioid medications they must be discarded immediately. Instructions for safe disposal can be found on page 35-36.

Medication Schedules

A) Acetaminophen and Ibuprofen

We recommended that you continue to take Ibuprofen (*Motrin or Advil)* and Acetaminophen (*Tylenol*) every 6 hours on a scheduled basis for the first 2 days that you are home. Alternate the two medications so that you take one or the other every 3 hours.

ACETAMINOPHEN *(Tylenol)*	**Post-discharge Day 1:** Acetaminophen can be given every 6 hours as needed for moderate pain.
IBUPROFEN *(Motrin or Advil)*	**Post-discharge Day 1:** Ibuprofen can be given every 6 hours as needed for mild to moderate pain.

Sample schedule

6 am:	Ibuprofen
9 am:	Acetaminophen
12 pm:	Ibuprofen
3 pm:	Acetaminophen
6 pm:	Ibuprofen
9 pm:	Acetaminophen
12 am:	Ibuprofen
*3 am:	Acetaminophen *(Optional if sleeping)*

B) Oxycodone

OXYCODONE	**Post-discharge Day 1:** Oxycodone can be given every 4 hours as needed for severe pain. **Begin Weaning Oxycodone on Post-discharge Day 2.** **Suggested weaning schedule:** • **Post-discharge Day 2:** Start taking Oxycodone every 6 hours as needed for severe pain. • **Post-discharge Day 4:** Start taking Oxycodone every 8 hours as needed for severe pain • **Post-discharge Day 7:** Start taking Oxycodone only once or twice a day as needed for severe pain By **Post-discharge Day 10**, you will likely not need to take Oxycodone.

C) Colace and Senna (for avoidance and treatment of constipation)

Ages 3- 6 yrs: Colace 25 mg twice a day & Senna 5 ml twice a day
Ages 7–12 yrs: Colace 50 mg twice a day & Senna 10 ml twice a day or Miralax 8.5 grams
Ages 13 and up: Colace 100 mg twice a day and Senna 2 tabs twice a day or Miralax 17 grams

COLACE – Stool Softener	Give this twice a day while taking Oxycodone. Do not give if child has diarrhea.
SENNA – Laxative	Give this twice daily while taking Oxycodone. Do not give if child has diarrhea.
MIRALAX – Laxative	Can be given up to twice daily for constipation with or without Senna & Colace. Do not give if child has diarrhea.

Time Given:												
OXYCODONE (Medicine can be given for severe pain every 4 hours as needed)												
ACETAMINOPHEN/TYLENOL (Medicine can be given for mild to moderate pain every 6 hours as needed)												
IBUPROFEN/MOTRIN (Medicine can be given for mild to moderate pain every 6 hours as needed)												
SENNA (Medicine can be given for constipation every 12 hours)												
COLACE (Medicine can be given for constipation every 12 hours)												
OTHER:												

Date:												
Time Given:												
OXYCODONE (Medicine can be given for severe pain every 4 hours as needed)												
ACETAMINOPHEN/TYLENOL (Medicine can be given for mild to moderate pain every 6 hours as needed)												
IBUPROFEN/MOTRIN (Medicine can be given for mild to moderate pain every 6 hours as needed)												
SENNA (Medicine can be given for constipation every 12 hours)												
COLACE (Medicine can be given for constipation every 12 hours)												
OTHER:												

Liquid Medications That Taste Bad

- Have your child suck on a Popsicle beforehand to partially numb the mouth
- Serve the medicine cold to reduce the taste.
- Mix it with a strong flavor (such as Kool-Aid powder, chocolate syrup, or pancake syrup) to hide the bad taste.
- Dilute the medicine as much as possible (for example, one dose mixed in 2 glasses of cold apple juice), if you're certain your child can drink it all.
- Mix crushed pills with one of your child's favorite foods that doesn't require any chewing. Consider ice cream toppings (especially chocolate), honey, maple syrup, applesauce, ice cream, sherbet, or yogurt. Before adding the medicine, have your child practice swallowing the food alone without chewing it (because chewing would bring out the bad taste of the medicine).
- Have a glass of your child's favorite cold drink ready to rinse his mouth afterward - a sort of "chaser."

Overcoming Pills or Capsules

- Some advantages of taking pills over liquid are that they do not taste bad, they are easy to travel with, they do not have to be refrigerated, and you know exactly how much of the medication was taken.
- Place the pill or capsule far back on the tongue and have your child quickly drink water or a soft drink through a straw. If your child concentrates on swallowing (even gulping) the liquid, the pill will follow downstream without a hitch.
- If your child is over age 7 or 8 and unable to swallow pills, he should practice this skill when he's not sick or cranky. (However, some children can't swallow pills until age 10). Start with small pieces of candy or ice and progress to M&M's. Try to use substances that will melt quickly if they get stuck. If necessary, coat them with butter first. Use the liquid and straw technique. Once candy pellets are mastered, pills will usually be manageable. Please make sure though that the child understands the difference between candy and medication.
- Some pills can be split into halves. Check with the pharmacist about the specific medication before trying this since some medications cannot be split.
- Mix the pill with soft foods. Examples of soft foods are applesauce, yogurt, peanut butter, ice cream, or a Jello cube.

References:

Schmitt, MD, B.D. “Medicines: Helping Children Swallow Them.” Pediatric Advisor 2022.1. Index. 4 June 2010. Children’s Physician Network. 28 Oct. 2011. http://www.cponline.org/CRS/CRS/pa_swallmed_hhg.htm

“Helping Children Swalloe Pills.” KidsGrowth. 28 Oct. 2011.

Safe Medication Disposal

Not only after spine surgery, but following an injury or after another family member has surgery you may leftover medication that you need to dispose of. You may drop them off at an approved facility, or dispose of them at home. There are two ways to dispose of medications at home, either flushing medications or disposing them in the household trash.

Option 1: Flushing

Because some medications could be especially harmful to others, they have specific directions to immediately flush them down the sink or toilet when they are no longer needed. The following is a list of medications from the FDA that are recommended for disposal by flushing when take-back options are not readily available:

Active Ingredient	Brand Names
Benzhydrocodone/ Acetaminophen	Apadaz
Buprenorphine	Belbuca, Bunavail, Butrans, Suboxone, Subutex, Zubsolv
Fentanyl	Abstral, Actiq, Duragesic, Fentora, Onsolis
Diazepam	Diastat/Diastat AcuDial rectal gel
Hydrocodone	Anexsia, Hysingla ER, Lortab, Norco, Reprexain, Vicodin, Vicoprofen, Zohydro ER
Hydromorphone	Dilaudid,Exalgo
Meperidine	Demerol
Methadone	Dolophine, Methadose
Methylphenidate	Daytrana transdermal patch system
Morphine	Arymo ER, Embeda, Kadian, Morphabond ER, MS Contin , Avinza
Oxycodone	Combunox, Oxaydo (formerly Oxecta), OxyContin, Percocet, Percodan, Roxicet, Roxicodone, Targiniq ER, Xartemis XR, Xtampza ER, Roxybond
Oxymorphone	Opana, Opana ER
Tapentadol	Nucynta, Nucynta ER
Sodium Oxybate	Xyrem oral solution

Safe Medication Disposal, cont.

Option 2: Household Trash

Almost all medicines can be thrown into the household trash. These include prescription and over-the-counter drugs in pills, liquids, drops, patches, creams, and inhalers.

Follow these steps:

1. Remove the drugs from their original containers and mix them with something undesirable, such as used coffee grounds, dirt, or cat litter. This makes the medicine less appealing to children and pets and unrecognizable to someone who might intentionally go through the trash looking for drugs.
2. Put the mixture in something you can close (a re-sealable zipper storage bag, empty can, or other container) to prevent the drug from leaking or spilling out.
3. Throw the container in the garbage.
4. Scratch out all your personal information on the empty medicine packaging to protect your identity and privacy. Throw the packaging away.

If you have any questions about your medicine, ask your health care provider or local pharmacist.

Option 3: Medication Drop Boxes

The following are resources for medication drop-off locations:

- Website to search for medication drop boxes by country in New York State
  health.ny.gov/professionals/narcotic/medication_drop_boxes/
- Website to search for Medication Drop Boxes
  www.fda.gov/drugs/disposal-unused-medicines-what-you-should-know/drug-disposal-drug-take-back-locations
- CVS and Walgreens that can accept medications
  www.walgreens.com/topic/pharmacy/safe-medication-disposal.jsp
  www.cvs.com/content/safer-communities-locate
- DEA National Prescription Drug Take Back Day
  www.deadiversion.usdoj.gov/drug_disposal/takeback/index.html

For disposal information specific to the medications that you are taking, please visit Drugs@FDA at accessdata.fda.gov/scripts/cder/daf/

- Once there, type in the medication name and click on “search”
- Then click on the label section for that specific medication
- Select the most recent label and search for the term “disposal”

Hospital Stay

You will be in the hospital for about 3-5 days.

First 2 Weeks Post-op

- Appetite
  - You will not have too much of an appetite for the first 2 weeks post op. We recommend eating ANYTHING that sounds good to the patient.
  - Prioritize iron and protein to aid your recovery.
- Movement
  - Immediately after surgery you are able to twist, bend, and rotate as tolerated.
  - You are able to sleep in ANY position that is comfortable for you!
  - It is normal to tire quickly and to have to sit down most of the time. When resting during the day you should be sitting up on a couch, recliner, or anti-gravity chair.
  - As soon as you are comfortable, you may take short walks outside or go on short errands.
  - *It is VERY IMPORTANT to move! The more you move the quicker you recover!*
  - It is best to be in bed ONLY FOR SLEEPING or for a nap if you get tired.
  - You should be getting up during the day and **walking around every hour**. The more you sit and lay, the stiffer you will get and the more pain you will have. We want to limit the pain and stiffness with movement of any kind (reaching for things in cabinets, etc.)
  - By your first post-op visit (7-10 days) we encourage you to sit at the table for meals, go outside and get the mail, and start to have visits from friends.
- Pain
  - It is VERY normal to have pain on your scapula (shoulder blade), chest, and side. Heat, over the counter lidocaine patches and lidocaine creams can be very helpful.

3-4 Weeks Post-op

- School
  - You will be out of school for 3-6 weeks. You can go back to school as soon as you are able to sit up for an extended period of time. You may also want to start back with half days to make the transition easier.
  - You should set up home schooling with your school for the period of time that you will be out of school. This can start about 1 ½ - 2 weeks after the surgery (this way you are coming off of the narcotics and are able to concentrate on the schoolwork).
- Pain
  - You may experience a rebound of pain at around 3 weeks after surgery. At that point, most of our patients are moving around very well and can sometimes do too much. If this occurs, take some over the counter pain medication and take it easy over the next day or two. If you have concerns about continued pain, please call our office.
- Physical Therapy
  - Most kids don't need post-op PT, but we do have a protocol for those that do. Often it is the kids that are trying to get back into competitive sports quickly, have other medical diagnoses, did Schroth PT pre-op and WANT to do it post op, or are afraid to move and are having a harder time with recovery. We will discuss it at the first post op appointment and can prescribe it if indicated. Even if you decline it at the first post op visit, it can always be started later.

6 Weeks Post-Op

- Most kids are back to school and getting back to most activities.
- At your 6-week post op appointment other patients in the waiting room can't tell that you had surgery because you are for the most part back to yourself!
- Please refer to activity chart on the next page for specifics of what you can and can't do.

Returning to Activity

Reminder: Immediately after surgery you are allowed to twist, bend, and rotate as tolerated. We encourage you to be as active as possible, as the more you move the quicker you will recover.

Activity	Time
School	Return to class 3-6 weeks or earlier if comfortable
Shower	After wound check (around 7-10 days); 48 hours after drain removal if you have drains
Swimming (pool, lake, ocean)	4 weeks after surgery
Submerge the incision (bath/hot tub)	4 weeks after surgery
Lifting Weights	As soon as comfortable
Light Workout – walk on treadmill/exercise bike/bicycling	As soon as comfortable
Light Jogging/Running	As soon as comfortable
Dance/Yoga	As soon as comfortable
Driving	Per pre-op ability at 4 weeks
Gym/Contact Sports	As soon as comfortable
Contact Sports	As soon as comfortable
Amusement Park Rides	As soon as comfortable
Horseback Riding	As soon as comfortable
Collision Sport (boxing, ice hockey, football, lacrosse, rugby, volleyball)	3 months
Skiing, Snowboarding, Ice Skating	3 months
Skateboarding	3 months

After THREE MONTHS you have NO RESTRICTIONS! You can do EVERYTHING that your parents are okay with. From an orthopedics perspective you can do everything. This includes bungee jumping, sky diving, roller coasters, etc. There is no need to call and ask about an activity because the answer will be "YES."

School Note

This is the school note you will receive from us either pre-op or at the first post-op visit in preparation of your return to school.

Date: _____

To Whom It May Concern,

I am the treating Orthopedic Surgeon for _____. This patient has severe scoliosis and is scheduled to have Spinal Fusion surgery on _____. The recovery from this surgery involves approximately 4 days in the hospital, and several weeks of recovery at home. Post-operatively patients are unable to attend school because they must take pain medication around the clock, they have difficulty sitting in a chair for long periods of time, and they require assistance with some activities of daily living.

_____ will need to be out of school for 4-6 weeks following the surgery. Please provide home instruction as soon as the student feels able to participate and allow them to return to school on a part-time schedule once able. If they are able they may return to school before the 4-6 week mark. They may also need to start back with ½ days at first.

Once the student returns to school please excuse them from gym until further notice and allow them extra time between classes. In addition, please provide the student with an elevator pass and second set of books, as applicable.

Please feel free to contact my office with any further questions. Phone: (212) 305- 5475; Fax: (212) 305-5094.

Sincerely,

What is the process for an autologous blood donation?
We do not recommend autologous blood donation because it can increase the risk of needing a blood transfusion.

How long do I have to wait to fly in an airplane after surgery?
Our international patients typically fly around 4 weeks after the surgery. However, depending on the length of your flight you may feel comfortable flying around 3 weeks.

Will I lose flexibility in my spine?
The vast majority of the motion of our spine comes from the lumbar, or bottom, portion of the spine. Considering this, most patients do not have a noticeable loss of motion after surgery. Patients who are gymnasts and dancers can return to their sport after surgery.

Are there certain sports that I am not allowed to play after surgery?
Please refer to page 39 "Returning to Activity" for a guide on when you can return to certain sports. However, after 3 months you can return to ALL sports!

Do I need to stop birth control before the surgery?
No, you do not need to stop your normal medications prior to surgery. The PACU nurse will go over when to take the medications and what ones to bring to the hospital when they call you the night before surgery.
***Birth control effectiveness may be impacted by certain medications given while inpatient. Please speak with the inpatient team and primary care provider about this if you have any additional questions.*

What if I have my period or get my period while in the hospital?
Oftentimes girls do end up having their period while in the hospital because your body has been through the stress of surgery. Please free feel to bring your own supplies in anticipation of this happening.

What is Post-op day zero versus Post-op day one?
Post-op day zero refers to the day that you had surgery. Post-op day one is the day after you have had surgery.

Should I wake my child up in the middle of the night to give pain medication?
Every child is different in terms of their pain management needs after surgery. Some children benefit from waking for pain medication for the first few nights home from surgery. Sometimes it can be hard to "catch up" on pain control, and waking up at night for medication can avoid this. Other children tolerate going through the night without medication and may find that the benefit of uninterrupted sleep outweighs waking up in the middle of the night for medication. We recommend doing what you think will be best for your family and child.

Is it normal to have pain or numbness on the front of the thigh after surgery?
Yes, this is caused by pressure on the lateral femoral cutaneous nerve during the surgery. This usually resolves within the first 6 weeks.

Is it normal to have pain around the shoulder blade after surgery?
Yes, this is caused by the de-rotation of the spine during the surgery. This usually resolves within the first 6 weeks but may take longer. We recommend heat, over the counter lidocaine patches, and over the counter creams such as "Icy Hot" to help with this type of pain.

When will I start to feel back to myself?
Most patients are feeling 100% back to themselves at 6 weeks.

Do I need antibiotics before dental work or a dental cleaning?

You do NOT need antibiotics prior to dental work after spinal surgery. Please obtain a letter at your post-op visit for your dentist. It can be found under "letters" on the MyChart portal.

May I sleep on my stomach right after surgery?

Yes, you may sleep however is comfortable for you.

May I get a massage after surgery?

Because of potential for discomfort, it is probably better to wait until at least 6 weeks after surgery. After this you can have a massage as tolerated.

May I get my ears pierced or belly button pierced right after surgery?

You may from an orthopedic standpoint at your parents' discretion.

Do I need a letter to go through airport security?

You do NOT need a letter for security. They do not accept letters from physicians anymore. Most of the time, the metal does not trigger the alarm at the airport. If it does cause the alarm to go off then let security know that you had surgery. They may want to see the top of your scar.

Why do I still have a small prominence on my back or uneven shoulders after surgery?

All patients will have a decrease in the prominence of their scoliosis and shoulder/hip asymmetry after the surgery. However, this will take time as your brain adjusts to your new body position. Don't look at the asymmetries for 6 weeks post-op as your body slowly adjusts during that time period. If you still have concerns, please bring it up to your surgeon at the 6-week post-op visit.

Will I be able to go up the stairs when I go home?

Yes, you will be able to go up and down the stairs when you get home. You will be more tired than usual so you will not want to take the stairs often during the first two weeks. Please speak with the PT/OT while in the hospital that you have stairs in your home or building so that they can practice the stairs with you while you are in the hospital.

How should I wash my hair if I cannot shower until my dressing is removed?

There are several types of inflatable sinks that you can purchase online (search for portable sink on Amazon) or you may also go to a salon to get your hair washed if it is a problem. Another alternative is dry shampoo. It is extremely important to maintain good hygiene post operatively to decrease the risk of infection. This should include brushing your teeth and sponge bathing with either wipes or wash cloths. Here is an example of a portable sink:

Advice From a Parent

Some ideas and suggestions for preparing for & recovering from scoliosis surgery
By Parent Julie Ehlers

Things to bring to the hospital

- Button down shirt for going home – raising arms overhead hurts for a while.
- Sweatshirt or sweater for parents – it can get really cold there.
- Several pillows for the car ride home – we didn't bring one, and regretted it.
- Electronics and chargers – we weren't sure we would be able to use them in the hospital, but in fact we could. Cell phone, ipad, laptop, whatever.
- Chapstick – Lips can be very dry following surgery. Louise sipped a lot of apple juice, but Chapstick may also be helpful.
- A book or two to read aloud – it's easier to listen to a story being read aloud then to watch TV, and it gives the parents something concrete to do to help. Also useful: a clip-on booklight.
- Optional - a camera – afterwards, we wished we had taken pictures of us dressed in the funny cover-ups before surgery, and the operating room, and other memorable sights. On the other hand, we were so nervous about something going wrong, that maybe 'playing tourist' wouldn't have worked. Sometimes the patient likes to see a pic of scar when the dressing is changed right before discharge.
- Optional - a second driver to get home with – Having a second driver enables one person to focus on driving to try and avoid too many bumps and the other person could help to keep the child comfortable
- Neck Pillow

Stuff to Have at Home

- Pillow, lots of pillows – the first couple of weeks can be challenging, there's no way around it. The recovering patient will want pillows (regular full sized bed pillows) behind her everywhere she sits (dining room, car, living room, etc). At some point it's easier to buy more than to carry them around constantly. Also, a variety of pillows helps trying to sleep: get one extra-long pillow and one firm (tempur pedic-type) in addition to regular ones. When they go back to school, it is possible that they may want one at school for a period of time.
- Straws that bend – for help sipping liquids.
- A couple of button-down shirts – more comfortable than t-shirts for the first two weeks.
- A Non-Slip Insert or a Shower Chair for the Shower – Ask for a prescription for either of these prior to discharge
- Extra large bandaids – after 7-10 days, they take off the big dressing on the wound, and give clearance for showering. Louise found it very comforting to have some bandaids on afterwards for a feeling of protection. Make sure to change them regularly (easiest during showers) and give the wound some time to air, so it can dry up.
- Hair washing tray – We practiced washing hair using the tray (with the cape and towel under it) twice before the surgery, and were glad we did. You can also go to the hair salon to get their hair washed while they are unable to take a shower.

Useful Stuff to Know

- The recovering patient will eat hardly anything the first week – this is normal. For some reason, the main food she would eat was yogurt with granola, plus apple juice. Other people have told me their kids liked jello or pudding. You'll have to experiment to find what they'll eat. Once they start eating, they make it up.
- Sleeping arrangements at home - A parent should plan to sleep near or in the kid's room during the first few days at home
- Coughing and sneezing hurt – try bracing when it starts coming on.
- Going back to school can be difficult - The obvious part is that the kid gets tired easily and needs to lie down in the nurse's office or go home early, or take a day off in the very beginning. It may be helpful to start back with half days and then work into full days.
- Meet with the school ahead of time – This allows things such as home schooling, second set of books and the transition back to school easier.
- Minimize weight for back to school – we got lightweight plastic binders for each subject with a small amount of lined paper, so Louise could take out only what she needs for each class. We also got a pocket folder and pencil bag for each one.

Resources

The Columbia University Medical Center Weinberg Cerebral Palsy Center

Weinberg.cuimc.columbia.edu

Scoliosis Organizations

National Scoliosis Foundation
scoliosis.org

Scoliosis Research Society
srs.org

Pediatric Spine Foundation
Pediatricspinefoundation.org

Curvy Girls
Curvygirlsscoliosis.com

SCOLIOS-US Resources and Mentoring Program
Bracingforscoliosis.org

Higgy Bears
Higgybears.com

Websites and Books

Dr. Vitale's Website
Pediatricscoliosissurgery.com

Columbia Pediatric Orthopedics
Columbiaortho.org/patient-care/specialities/pediatric-orthopedics

Scoliosis – A Guide for Children and Their Families Available on Paperback and Kindle on Amazon by Dr. Vitale and Amber Mizerik, PA-C

Curvy Girls – Scoliosis Support Group

Fitting in isn't easy when you're a teenager wearing a body brace 23/7. I was finishing my first year in middle school when I was diagnosed with Adolescent Idiopathic Scoliosis and had to wear that "thing" to school. I wore my brace faithfully despite arguments and failed attempts to hide my brace in my locker. Ultimately, I required surgery to correct the two curves growing in my back. On June 27, 2006, I had two titanium rods and twenty-two screws affixed to my spine. My biggest concern was that I wouldn't be able to dance for a year.

Leah Stoltz (Founder)

How did Curvy Girls begin?
My intention was simple--- I wanted to talk to other girls who were going through the same thing---feeling alone, different, angry that I had to wear a brace, and worried about having to have surgery. After an all adult group meeting, I said, "I wish they had this for kids" to which my mom said that I could make my own group. So I did. At my orthopedic appointment I told them about my idea and they offered to send out flyers to all their "scoli" patients. That's when the calls started coming in. I held our first group in 2006 right before my before my fourteenth birthday with 4 girls—one of which was me! At our first group we talked about clothes and I brought down shirts to show how to disguise their brace by layering tops.

What do you talk about in group? We discuss things like how to tell other kids about your scoliosis. We give each other clothing tips. We talk about regular stuff that teenagers talk about. Most of all we support each other so we don't feel alone.

What makes Curvy Girls a success?
It's a kids group run by a kid! There are several groups in the tri state area so check out their website to see what group is closest to you. They may offer attending the group virtually so reach out to the group closest to you and then go from there.

Curvy Girls Website
http://www.curvygirlsscoliosis.com/

Places to Eat

Aqua Marina – Italian Location: 4060 Broadway (212) 928-0070	**Famiglia Pizza** Location: 4020 Broadway/corner of 169th (212) 927-3333	**Las Palmas – Spanish/Mexican** 3891 Broadway, NY NY 10032 (917) 521-0349
Broadway Slice – Pizza Location: 3932 Broadway, NY NY 10032 (646) 813-2214	**Fort Washington Public House** American cuisine/Bar Location: 3938 Broadway (646) 813 - 2210	**Mike's Bagels** 4003 Broadway/corner of 168th (on same side of street as MSCHONY) (212) 928-2300
Carrot Top The best carrot cake/muffins plus soups, salads, and sandwiches Location: 3931 Broadway b/w 166th and 167th (on same side of street as MSCHONY) (212) 927-4800	**Havana Heights – Spanish/Cuban** 4083 Broadway, NY NY 10033 (646) 590-9734	**The Lobby Cafe** Café featuring baked goods, soups, sandwiches, salads and drinks Location: CHONY Tower Building Main Lobby (212) 342-8489
Chick-Fil-A Location: 601 W 181st, NY, NY 10033 646-351-6711	**The Heights Cafe** Cafeteria featuring hot food, deli, sandwiches, salads, sushi, soups, beverages, and desserts Location: Milstein Hospital (177 Ft. Washington Ave/168th St), 2nd Floor (212) 305-4527	**Subway** 3922 Broadway b/w 164th and 165th (across the street from MSCHONY) (212) 740-9180
Chipotle - Mexican grill 4009 Broadway b/w 168th and 169th (on same side of street as MSCHONY) (646) 412-5429	**Hilltop Perk Deli / Grocery** Location: 83 Haven Ave (646) 649-4616	**Pure Green Juice & Smoothie** Bowls, Smoothies, and healthy bites 4026 Broadway (917) 262-0357
Dallas Barbeque 3956 Broadway/corner of 166th (across the street from MSCHONY) (212) 568-3700	**Jersey Mikes Subs – Sandwiches** Location: 4055 Broadway, NY NY 10032 (332) 219-0504	**Rain II – Thai** 1095 St. Nicholas Ave; (646) 767-0014
Dunkin Donuts 4030 Broadway/between 169th and 170th (212) 923-2222	**Kozy Fresh – Salads/Soups/Sandwiches** 603 W 168 St. NY NY 10032 (212) 927-1234	**Ramen Ku- Raku** 3952 Broadway, NY NY 10032 212-568-8866
El Malecon Restaurant – Spanish/Dominican 4141 Broadway and 175th (212) 727-2775	**Kung Fu Tea – Poke Bowls/Bubble Tea** 4053 Broadway, NY NY 10032 (212) 568 – 0088	**Salento Colombian Coffee & Kitchen** Bakery and Coffee 2112 Amsterdam Avenue, NY NY 10032 (646) 767-0680
Starbucks 4001 Broadway at 168th street (917) 521-0342 Another Location: Milstein Hospital Lobby 177 Fort Washington Ave, NY, NY 10032	**Taco Bell** 3924 Broadway, NY NY 10032 (646) 300-9377	**Tasty Deli** 4020 Broadway, b/w 169th and 170th (212) 923-0700
Wingstop Location: 4051 Broadway, NY NY 10032 (929) 977 – 9464	**Wendy's** Fast food chain featuring hamburgers, etc. Corner of 165th and Broadway (212) 928-0321	**Tung Thong Thai** Location: 561 W 169st, NY NY 10032 (212)795-5995

Publications

At Columbia Orthopedics we are committed to advancing orthopedic care through innovative clinical outcomes research. The following is a list of our most recent publications from 2024. If you would like to view publications from prior years, please visit pediatricscoliosissurgery.com/Michael-vitale-md-mph/publications

2024

1. Lee NJ, Lenke LG, Arvind V, Shi T, Dionne AC, Nnake C, Yeary M, Fields M, Simhon M, Ferraro A, Cooney M, Lewerenz E, Reyes JL, Roth SG, Hung CW, Scheer JK, Zervos T, Thuet ED, Lombardi JM, Sardar ZM, Lehman RA, Roye BD, Vitale MG, Hassan FM. A Novel Preoperative Scoring System to Accurately Predict Cord-Level Intraoperative Neuromonitoring Data Loss During Spinal Deformity Surgery: A Machine-Learning Approach. J Bone Joint Surg Am. 2024 Nov 20. doi: 10.2106/JBJS.24.00386. Epub ahead of print. PMID: 39813599.
2. Givens RR, Malka MS, Lu K, Mizerik A, Bainton N, Zervos TM, Roye BD, Lenke LG, Vitale MG. Making wrong site surgery a "never event" in spinal deformity surgery by use of a "landmark vertebra" to eliminate variability in identifying a target vertebral level. Spine Deform. 2024 Nov 20. doi: 10.1007/s43390-024-00996-8. Epub ahead of print. PMID: 39565550.
3. Morgan SJ, Brown ZC, Ahmed MM, Bauer JM, Murphy JS, Roye BD, Truong WH. Assessment of Adolescent and Parent Willingness to Participate in a Comparative Study of Scoliosis Braces. J Pediatr Orthop. 2025 Feb 1;45(2):75-80. doi: 10.1097/BPO.0000000000002840. Epub 2024 Oct 17. PMID: 39466278.
4. Givens RR, Brown M, Malka MS, Lu K, Zervos TM, Roye BD, Pinyavat T, Flynn JM, Vitale MG. Do teams of strangers create health care dangers? The effect of OR team consistency on operative times in a adolescent idiopathic scoliosis. Spine Deform. 2025 Jan;13(1):123-133. doi: 10.1007/s43390-024-00964-2. Epub 2024 Sep 25. PMID: 39320701.
5. Malka MS, Givens RR, Zervos TM, Berube E, Lu K, Bainton N, Vitale MG, Roye BD. Spontaneous Resolution of Kyphoscoliosis Secondary to Guillain-Barre Syndrome: A Case Report. JBJS Case Connect. 2024 Aug 8;14(3). doi: 10.2106/JBJS.CC.24.00113. PMID: 39133783.
6. Fields MW, Zaifman J, Malka MS, Lee NJ, Rymond CC, Simhon ME, Quan T, Roye BD, Vitale MG. Utilizing a comprehensive machine learning approach to identify patients at high risk for extended length of stay following spinal deformity surgery in pediatric patients with early onset scoliosis. Spine Deform. 2024 Sep;12(5):1477-1483. doi: 10.1007/s43390-024-00889-w. Epub 2024 May 3. PMID: 38702550.
7. Fields MW, Rymond CC, Malka MS, Givens RR, Simhon ME, Matsumoto H, Marciano GF, Boby AZ, Roye BD, Vitale MG. Improvement in axial rotation with bracing reduces the risk of curve progression in patients with adolescent idiopathic scoliosis. Spine Deform. 2024 Sep;12(5):1345-1353. doi: 10.1007/s43390-024-00888-x. Epub 2024 May 2. PMID: 38698106.
8. Plachta S, Levine SB, Carlberg K, Cirrincione PM, Vitale M, Lenke LG, Roye BD, Selber PRP. Sagittal spinopelvic alignment in ambulatory persons with cerebral palsy. Spine Deform. 2024 Jul;12(4):1099-1106. doi: 10.1007/s43390-024-00866-3. Epub 2024 Apr 17. PMID: 38632183.
9. CreveCoeur TS, Iyer RR, Goldstein HE, Delgardo MW, Hankinson TC, Erickson MA, Garg S, Skaggs DL, Andras L, Kennedy BC, Cahill PJ, Lenke LG, Angevine PD, Roye BD, Vitale MG, Mendiratta A, Anderson RCE. Timing of intraoperative neurophysiological monitoring (IONM) recovery and clinical recovery after termination of pediatric spinal deformity surgery due to loss of IONM signals. Spine J. 2024 Sep;24(9):1740-1749. doi: 10.1016/j.spinee.2024.04.008. Epub 2024 Apr 12. PMID: 38614157.
10. Nnake CO, Concepcion-Gonzalez A, Malka MS, Berube E, Ferris A, Bainton N, Vitale MG, Roye BD. Preoperative Echocardiogram Does Not Contribute to Surgical Risk Assessment in Patients With Large Curve Scoliosis and No Cardiac Risk Factors. J Pediatr Orthop. 2024 Aug 1;44(7):443-447. doi: 10.1097/BPO.0000000000002692. Epub 2024 Apr 5. PMID: 38584340.
11. Concepción-González A, Sarmiento JM, Rymond CC, Ezeh C, Sinha R, Lin H, Lu K, Boby AZ, Gorroochurn P, Larson AN, Roye BD, Ilharreborde B, Vitale MG; European Pediatric Orthopaedic Society Spine Study Group, Pediatric Spine Study Group, Harms Study Group. Evaluating compliance with the best practice guidelines for wrong-level surgery prevention in high-risk pediatric spine surgery. Spine Deform. 2024 Jul;12(4):923-932. doi: 10.1007/s43390-024-00836-9. Epub 2024 Mar 21. PMID: 38512566.
12. Heffernan MJ, Leonardi C, Andras LM, Fontenot B, Drake L, Pahys JM, Smith JT, Sturm PF, Thompson GH, Glotzbecker MP, Tetreault TA, Roye BD; Pediatric Spine Study Group; Li Y. Lowest instrumented vertebrae in early onset scoliosis:

is there a role for a more selective approach? Spine Deform. 2024 Mar 21. doi: 10.1007/s43390-024-00842-x. Epub ahead of print. PMID: 38514530.
13. Concepción-González A, Sarmiento JM, Rymond CC, Ezeh C, Sinha R, Lin H, Lu K, Boby AZ, Gorroochurn P, Larson AN, Roye BD, Ilharreborde B, Vitale MG; European Pediatric Orthopaedic Society Spine Study Group, Pediatric Spine Study Group, Harms Study Group. Evaluating compliance with the best practice guidelines for wrong-level surgery prevention in high-risk pediatric spine surgery. Spine Deform. 2024 Mar 21. doi: 10.1007/s43390-024-00836-9. Epub ahead of print. PMID: 38512566.
14. Vorhies JS, Hauth L, Garcia S, Roye BD, Poon S, Sturm PF, Glotzbecker M, Fletcher ND, Stone JD, Cahill PJ, Anari JB; Pediatric Spine Study Group. A New Look at Vertebral Body Tethering (VBT): Through the Modified Clavien-Dindo-Sink (mCDS) Classification. J Pediatr Orthop. 2024 Mar 8. doi: 10.1097/BPO.0000000000002653. Epub ahead of print. PMID: 38454491.
15. Bonsignore-Opp L, Malka MS, Ball J, Simhon ME, Matsumoto H, Sturm P, Pahys JM, Vitale MG, Larson AN, Roye BD; Pediatric Spine Study Group. Institutional Variability in Anesthesia Time for Mehta Casting in Early-Onset Scoliosis (EOS). J Pediatr Orthop. 2024 Feb 14. doi: 10.1097/BPO.0000000000002644. Epub ahead of print. PMID: 38353100.
16. Tetreault TA, Phan TN, Wren TAL, Heffernan MJ, Emans JB, Karlin LI, Samdani AF, Helenius IJ, Vitale MG, Andras LM; Pediatric Spine Study Group. Osteotomies At The Time of Graduation Surgery: How Much Do We Get from Them? Spine (Phila Pa 1976). 2024 Aug 29. doi: 10.1097/BRS.0000000000005139. Epub ahead of print. PMID: 39206787.
17. Ezeh CE, Cooper HJ, Vitale MG, Butrico ER, Camera DA, Lu K. The Impact of the Comprehensive Unit-Based Safety Program on the Perioperative Efficiency and Patient Safety of Adult Hip and Knee Arthroplasty Procedures: Retrospective Comparative Study. J Arthroplasty. 2024 Aug;39(8):1946-1952. doi: 10.1016/j.arth.2024.03.027. Epub 2024 Apr 4. PMID: 38582371.

Notes

Notes

We thank you for entrusting your child's care in our hands. We are here to support you throughout the process. Please reach out to our team (contact information on page 5) with any further questions that you may have.

Division of Pediatric Orthopedics
NewYork-Presbyterian/Morgan Stanley Children's Hospital
Columbia University Medical Center

3959 Broadway, 8 North
New York, NY 10032

Tel: 212.305.5475
Fax: 212.305.8271

columbiaortho.org

ColumbiaDoctors | *Pediatric Orthopedics*