



SpineHope



## *Patient Guide for Surgery*

INFORMATION FOR PATIENTS WITH SPINE CONDITIONS  
ON TREATMENT OPTIONS AND RECOVERY

- Introduction to Spine Hope
- Spinal Deformities
- When Surgery is Recommended
- Treatment / Halo Traction
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SpineHope

## OUR MISSION

SpineHope transforms children's lives worldwide through spine surgery, education and research.

SpineHope is a 501(c)(3) nonprofit organization dedicated to bringing advanced medical treatment to youth in underserved communities around the world. Our focus is to assist youth suffering from spinal deformities and other complex spine conditions in order to improve quality of life, alleviate pain and, when possible, prevent paralysis. We offer direct services to patients as well as education, training and support to surgeons and medical staff worldwide.

## U.S. HUB PROGRAM:

We partner with local hospitals, corporate sponsors, equipment and product donors, volunteer service providers, and other healthcare organizations to bring youth with complex spine conditions to the United States of America for evaluation, surgery (if cleared), and initial recovery. The approximate stay for each patient selected is 6-8 weeks with all medical and hospitalization services provided at no cost to the patient. Airfare, lodging, food, and transportation costs are covered by SpineHope.



## DISCLAIMER:

This document is intended to offer educational information and helpful tips to patients and their families on spinal deformities and possible treatment options. This information is intended to serve as a general guide and should **NOT** replace instructions or medical advice provided by your child's physician and healthcare team. Please consult your physician (or surgeon) for specific information and a detailed treatment plan.

## OVERVIEW: COMMON SPINAL DEFORMITIES

**Scoliosis** - Scoliosis is an abnormal sideways curvature of the spine. While most cases are thought to be hereditary, other causes can be spinal column abnormalities at birth or neurological disorders. As the curve progresses, it can result in rotation of the spine and rib cage. Untreated severe scoliosis can be debilitating and cause health complications including pain, mobility impairment, breathing difficulties, and potential damage to organs.

**Kyphosis** - Kyphosis is an abnormal forward-bending curvature of the spine and can be viewed as a round back or slouched posture. Like with scoliosis, untreated severe kyphosis can be debilitating and cause health complications including pain, mobility impairment, breathing difficulties, and potential damage to organs.

**Lordosis** - Lordosis is a condition consisting of an excessive inward curve of the spine causing the body to improperly distribute mechanical stress from movement. This condition usually appears in the lower back but may also be seen in the neck.

# TREATMENT OPTIONS FOR SPINAL DEFORMITIES

**Monitoring:** A curve is treated based on its likelihood to progress. Often, curves of less than 20 degrees are monitored with X-rays every couple months while growth is occurring.

**Bracing Treatment:** Back bracing is one of the most common treatments in less severe cases. Back braces may be recommended for children still growing to prevent progression for curves greater than 20 degrees. The brace applies pressure to the trunk and pelvis, in some cases preventing the spinal curvature from worsening.

**Alternative Therapies:** Physical Therapy including the Schroth Method, ScoliYoga, Pilates, and Massages are alternative therapies and exercises that may provide relief and offer some improvement. These therapies focus on muscle strengthening and back stretching.

**Corrective Spine Surgery:** Severe curves, as identified by your physician, may require surgery to prevent extensive progression. This surgery is performed in the operating room while the patient is under anesthesia. An incision is made along the spine where metal or titanium screws and/or hooks are placed on the vertebra. These screws and hooks anchor long rods which are maneuvered to the correct alignment.

**Minimally-Invasive Surgery:** This may be an option for some patients. The procedure is similar to an open surgery, except that smaller incisions are made instead of one large incision.

# WHEN SPINE SURGERY IS RECOMMENDED FOR YOUNG INDIVIDUALS

Once a young patient's spinal curve is measured greater than 40 degrees, surgery may be recommended. In this case, if the patient has stopped growing and has reached skeletal maturity, a spinal fusion surgery may be recommended to prevent further progression of the curve. For patients still growing, multiple surgeries over time may be required as growth occurs or the use of growing rods might be recommended. Treatment plans are determined based on a combination of the surgeon's physical evaluation, ordered test results, and spinal imaging requested (including X-rays, MRI, and/or CT myelogram).

## HALO-GRAVITY TRACTION

For patients with severe spinal curvatures or compressions, Halo-Gravity Traction is a method sometimes recommended prior to corrective spine surgery to gently stretch the spine and reduce the risk of damaging the nerves or soft tissues around the spine during surgery. Traction which takes place over the course of days, weeks or months (depending on the severity of the curve), can help straighten and decompress the spine. Please note that Halo-Gravity Traction is not a replacement for surgery.



**Application:** The metal halo ring is applied during a short surgical procedure while the patient is under anesthesia. Expect six to eight pins securing the halo ring to the skull. These pins do not extend into the brain. After surgery, a headache is possible, but is controllable with pain medication.

**Traction:** Your physician will then attach the traction, pulley system to the bracket on the ring. The traction weight will be adjusted in increments over time by your physician up until the spine surgery date. The goal is for the patient to be in traction most of the day (approximately 22-23 hours per day). Traction will be used on a walker, on a wheelchair, and while in bed. The surgery team and hospital staff will monitor to ensure the traction is at the appropriate level by performing frequent checks (including ensuring the patient is able to move eyes from side to side while keeping their head steady, can stick their tongue out, can swallow, has hand grip strength, and is able to show their teeth).

### Things To Watch For:

Any strange feelings of tingling sensations or difficulty swallowing should be reported to the physician immediately. If any drainage from pin sites, loose pins or redness around the pin sites are detected, notify the medical staff.





## Other Notes - if in Halo Gravity Traction:

- When eating, using the toilet or taking a shower, the traction will be removed by the instruction and care of the hospital staff.
- A button up shirt or hospital gown are recommended since a pullover shirt cannot go over the halo ring.
- Use caution while walking, as balance could be off.
- The halo ring pins will leave small wounds on the forehead skin when they are first removed. These lesions will scab over within a few days. Small scars may appear on the forehead and usually fade, becoming less noticeable over time.

# PREPARING FOR SURGERY



This information is intended for education and information purposes only. Consider the information provided below as **general or rough guidelines**. Please follow the specific instructions provided by your surgeon as different surgeons often have their own preparation directions, protocols, preoperative medications, and schedules.

## DAYS LEADING UP TO SURGERY: POSSIBLE INSTRUCTIONS

\*Please refer to your surgeon's specific protocols/surgery preparation requirements. If you have any questions, contact your surgeon's surgical staff.

### 6 weeks before surgery

Any steroid medications should be stopped and not resumed until 6 months after surgery as these can lower immunity. However, inhaled steroid medications **do not need to be stopped**. Other medications may be ordered to stop in the days or weeks leading up to the surgery. Be sure to discuss these medications with your surgeon.

### 5-7 days before surgery

Depending on your surgeon's protocols and surgery prep requirements, special preoperative showers using an antimicrobial and antibacterial soap might be requested to lower the chance of infection during and after surgery. Please refer to your surgeon's protocols/surgery prep requirements regarding showering.

- Do not** apply any lotions or perfumes after these showers (skin lotion application can be resumed after surgery)
- Do not** scrub skin.
- Do not** use swimming pools or bath tubs once these showers have started.
- Do not** shave the surgical area.



## 7 days before surgery

Depending on your surgeon's protocols and surgery prep requirements, Mupirocin ointment **may be required to start 7 days prior to surgery** to reduce the chance of infection. Cotton swabs should be used to apply the ointment in each nostril.

## A few days before surgery

A pre-admission testing appointment will be scheduled a few days before the surgery during which a series of tests (including bloodwork, EKG, and possible chest x-ray) will be conducted.


## The day before surgery

Be sure to eat well, drink a lot of water and fluids, wash sheets before bed, and do activities that help with relaxation.

## The night before surgery

NO food or drinks (including water) should be consumed after 10pm (or time determined by the surgeon).

**\*NOTE:** You will be notified of the specific time of arrival and surgery, schedule, and instructions for you and your family either by phone or at the pre-admission testing appointment a few days prior to the surgery date.



# THE MORNING OF SURGERY

The morning of surgery, NO food or drinks (unless instructed) should be consumed. Wear comfortable, loose fitting clothing (pajamas as an example).

The morning of surgery you will see your surgeon and anesthesiologist where they can answer any questions you might have. The surgery generally lasts 5-8 hours.

Parents/guardians will be given updates every 1-2 hours by a surgical team member. Please make sure to arrive early or on time the day of surgery. A delay in arrival time can cause a delay in other surgeries that are scheduled that day.



## WHAT TO BRING ON SURGERY DAY...

### REQUIRED ITEMS

- ✓ Passport (if international) or other identification cards
- ✓ List of Daily Medicines with Dosages
- ✓ Bring Chewing Gum for after surgery (helps with digestive system)

### OTHER ITEMS

- ✓ Favorite comfort items (like a stuffed animal, cozy blanket, etc)
- ✓ Toiletries (toothbrush, toothpaste, hairbrush, etc)
- ✓ Slip on shoes or slippers (shoes with rubber soles is recommended to prevent slipping)
- ✓ A book, magazine, phone or tablet for activities
- ✓ Phone Charger and Headphones
- ✓ "Horseshoe" neck pillow
- ✓ Comfortable, loose fitting clothing (shirts with buttons or zippers)

# AFTER SURGERY

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\* Please refer to your surgeon's specific protocols/surgery preparation requirements.  
If you have any questions, contact your surgeon's surgical staff.

## Immediately After Surgery (First Night)

- Once the surgery has concluded, the patient will either be taken to the Recovery Room or the Intensive Care Unit (ICU) as determined by the surgeon.
- You might be a little loopy upon waking up from anesthesia.
- Having Several Attached Wires and Devices is Normal - Expect to wake up from surgery 1-2 IVs in arms (for fluids and medications), 1-2 back drains, monitoring wires (to measure pulse, blood pressure and oxygen levels), and a catheter. The catheter should be removed within 1-2 days once you are able to get up to use the toilet. Over the next few days, tubes will gradually be removed and monitors will be disconnected.

### **Diet:**

Will be determined by your surgeon and hospital care team.

### **Activity:**

The night of surgery a nurse will help the patient get out of bed to sit in a chair or to sit on the side of the bed. With the help from the care team, you will make a log-roll turn every few hours. The incentive spirometer, for breathing exercises, will be used every hour to help keep the lungs clear.

### **Possible Medications and Treatment:**

- IV fluids
- Antibiotics to help prevent infection
- Medication for upset stomach or constipation

### **Possible Medications for Pain Management:**

Could include any or a combination of the following or similar medications:

- Tylenol (acetaminophen)
- Valium (muscle relaxer)
- Toradol (anti-inflammatory)
- Gabapentin (nerve pain)
- Morphine or Dilaudid (pain)
- Oxycodone, Hydrocodone, or Norco (narcotic pain reliever) -

**Remember to eat a little 30-45 minutes prior to taking narcotics to help reduce constipation and nausea. Preferably carbohydrates of some kind to help the stomach tolerate the medication (crackers, chips, fries).**

## Day After Surgery (Post-Operative Day 1)

The goals for the first day post-surgery are to get pain under control, get up and walk a little and sit up in a chair with the help of physical therapy, do breathing exercises, and eat or drink a small amount.

### Diet:

Clear liquids to regular diet depends on what you can tolerate.

### Activity:

Physical therapy will come 1-3 times daily. The log roll will be explained and should be used to get in and out of bed. Use the incentive spirometer often to help keep the lungs clear. Reposition yourself in bed every 2 hours with help from staff. Try getting out of bed at least 3-4 times with the help of a nurse or care team member.

### Possible Medications and Treatment:

- IV fluids
- Antibiotics to help prevent infection
- Medication for upset stomach or constipation



### Medications for Pain Management

*(Might include any of the following or similar medications):*

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**Remember to eat a little 30-45 minutes prior to taking narcotics to help reduce constipation and nausea. Preferably carbohydrates of some kind to help the stomach tolerate the medication (crackers, chips, fries).**

## Post-Operative Day 2 to the Day of Discharge



### Diet:

Regular diet if tolerated. Include fiber-rich foods, protein, and carbohydrates. Whatever and however much you can tolerate comfortably. Drink lots of fluids.

### Activity:

Physical Therapy will continue. Use the incentive spirometer often to help keep the lungs clear. Walk at least 3-4 times a day around the room and in the hospital hallways. Expect some pain medications to be reduced or eliminated. Be sure to tell your care team if your pain level gets above a 4 of 5. Ask your care team about bathing options.

## Hospital Discharge Checklist

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- ✓ Make sure instructions, a medication list, and a medication schedule are provided when discharged from the hospital. Make sure to ask questions if anything is unclear.
- ✓ It is important to consider the post-surgery car ride. We advise you to sit in a back seat if possible with a proper seat belt. You can place a pillow behind your back for additional comfort if needed. We strongly advise against laying down in the back seat. If it is a long car ride, we recommend stopping every couple of hours for walking breaks.
- ✓ It is important to pay attention to the medication list and schedule.  
**Be sure to eat something 30-45 minutes prior to taking narcotics.**

## After Leaving the Hospital Checklist

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- ✓ NO BENDING, TWISTING or HEAVY LIFTING (until your surgeon says it is okay)
- ✓ Drink 6 to 8 glasses of fluid daily. This includes sport drinks, juices and water with the use of a bendable straw if needed.
- ✓ Eat foods that contain fiber to help the digestive system and protein to help the healing process.
- ✓ Use stool softeners and laxatives as needed for constipation. Walk as much as possible to maintain regular bowel movements. Eating prunes or drinking prune juice can also help with constipation.
- ✓ Plan activities accordingly as your body will get tired more easily and you will need to rest often.
- ✓ Log roll to get in and out of bed on your own.
- ✓ Walking will be your main exercise during your recovery. After 1 week from your surgery, start the following walking program:
  - Starting gradually, put on your shoes and take a short walk outside followed by a rest break. It is important to get up and to take several walks throughout the day.
  - Increase how far you go as you are feeling better with the knowledge that you will have to walk back!
  - Eventually, your goal is to walk 2 miles per day!

## WHEN TO CALL YOUR SURGEON

Loss of appetite after surgery is something to monitor. Weight loss that takes patients below an ideal weight range for their height is NOT recommended.

Less than 1% of adolescents will have a postoperative infection. However, please monitor for:

- Temperature of 101.4 degrees °F or greater
- Increased redness, swelling, tenderness, pain or warmth at the incision site
- Drainage or foul smell at your incision sites
- Any open areas along the incision line
- Pain that does not get better with pain medicine
- Numbness or tingling in your arms, legs or feet
- Change in bowel or bladder control
- Vomiting

## HOW TO TAKE CARE OF THE INCISION

**Keeping the incision site clean and dry is an essential step to prevent infection.**

Follow specific wound care protocols from your surgeon.

Be sure to wash your hands with soap and water before changing any dressing if applicable.



## TAKING A SHOWER (NO SOAKING IN BATHTUBS)

Your surgeon will tell you when you are allowed to shower. Until this time, give yourself sponge baths. Sponge baths will keep water away from the incision site.

Things to note once you can shower again:

- For the first few showers, you may feel a little dizzy or faint. Be sure to have someone nearby.
- Use lukewarm water rather than hot water.
- If you feel lightheaded, place a waterproof chair in the shower to sit on.
- After showering, pat your incision dry with a clean towel to dry off

**Important Note - DO NOT** sit in bathtubs or soak in water until instructed by your surgeon. Sitting in water can expose your incision to bacteria and increases the chance for infection.

## WASHING YOUR HAIR

You can wash your hair. The following are some ways to wash your hair before you are allowed to shower:

- If your bathroom sink is short enough, place a chair in front and sit facing away from the sink. Tilt your head back using a towel as padding between your neck and the sink. This method is similar to what you do when your hair is washed at a salon.
- Take a trash bag and make a slit at the bottom. Align the slit over head and pull the bag down. Sit on a chair in the shower and have someone wash your hair. For extra precaution, wrap a towel around your neck to prevent water down your back.



# RECOVERING AFTER SURGERY



**1**

**WALK OFTEN!** - You will feel very sore for about 2-4 weeks as your body is recovering from the surgery. Some days will be better than others. Listen to your body and make sure you walk often to reduce soreness and stiffness.

**2**

**EAT WELL!** - Eat a diet rich in protein and calories.

**3**

A follow-up appointment with your surgeon will be scheduled **3-4 weeks after surgery**.

**4**

Expect to still feel sore from time to time for the **first 2 months after the surgery** as your body adjusts to its new posture and continues to heal.

**5**

Resume daily activities as instructed by your surgeon.

# ACTIVITY GUIDELINES

You should get an activities schedule and instruction sheet from your surgeon, but below are general timelines and recommendations to review ahead of time.

## GENERAL TIMELINE OF ACTIVITY CALENDAR:

### 0 TO 8 WEEKS POST OPERATION

#### OKAY

- ✓ Most activities of daily living
- ✓ Ease into bending & twisting
- ✓ Housework (less than 25 lbs)
- ✓ Walking & Elliptical
- ✓ Light Weights (less than 25 lbs)

#### AVOID

- ✗ Lifting more than 20-25 lbs
- ✗ Running
- ✗ High Impact Activity (ie. NO jumping)
- ✗ Submerging incision in water
- ✗ Riding lawnmower/tractor/ATV

### AFTER 2 MONTHS POST OPERATION

#### OKAY

- ✓ All of the activities listed previously
- ✓ Most activities of normal life
- ✓ Okay to soak in bathtub, lake, pool - if no scabs or raw areas to the incision

#### AVOID

- ✗ High impact activity / sports

### 8 WEEKS TO 1 YEAR POST OPERATION

#### OKAY

- ✓ All of the activities listed previously
- ✓ Horseback riding (NO jumps)
- ✓ Roller Coasters
- ✓ Snow Skiing (green level)
- ✓ Ease back into sports

#### AVOID

- ✗ High impact sports (ie. football)

## GOING BACK TO SCHOOL AFTER SURGERY

Most patients are ready to go back to school around 4-6 weeks after surgery. Energy levels and stamina are frequent barriers to returning to school full time. However, some patients may feel well enough to return to school sooner. Important things to consider going back to school:



- Talk to your school about having two sets of textbooks - one for the class and one for home - this can be helpful in limiting the amount of weight carried in your backpack.
- Riding the school bus is okay, if comfortable.
- During the 4-6 months after surgery, you will need to avoid any physical activity classes or sports.
- If your school needs a doctor's note to provide information about restrictions, ask your surgeon's office.
- Consider taking a pillow to prop behind back in school chairs.

## GOING BACK TO WORK AFTER SURGERY



If working, consult with your surgeon regarding the type of activities that will be required of you and when they think it will be safe to return to work.

## REFERENCES

*About us.* (2022). SpineHope. <https://www.spinehope.org/>

*Activity Restriction Following Spine Surgery: Children and Adolescents.* (2017). Seton Brain & Spine Institute.

Boston Children's Hospital Spine Division. (2020). *Halo-Gravity Traction.* Boston Children's Hospital. <https://www.childrenshospital.org/conditions-and-treatments/treatments/halo-grty-traction>

*Coming to America.* (2020). SpineHope.

*5 Year Impact & Gratitude Report.* (2020). SpineHope.

[https://www.spinehope.org/Wp-content/uploads/2020/04/SpineHope-5-Year-Impact-Report\\_-2015-2020-F.pdf](https://www.spinehope.org/Wp-content/uploads/2020/04/SpineHope-5-Year-Impact-Report_-2015-2020-F.pdf)

*A Guide to Spine Surgery.* (2019). Dell Children's Medical Center of Central Texas.

*Halo Traction: Patient Education.* (2019). Dell Children's Medical Center of Central Texas / Ascension.

*Information about Surgery: Pediatric Scoliosis and Kyphosis.* (2016). Scoliosis Texas.

McConnell, J. (2017). *Long-Term Outlook for Adolescents Who Have Scoliosis*

Surgery. Spine-health. <https://www.spine-health.com/conditions/scoliosis/long-term-outlook-adolescents-who-have-scoliosis-surgery>

*Pediatric Halo Traction Management Guidelines.* (2019). Dell Children's Medical of Central Texas / Ascension

*Pediatric Surgery Passport .* (2013).

Dell Children's Medical Center of Central Texas / Ascension.



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