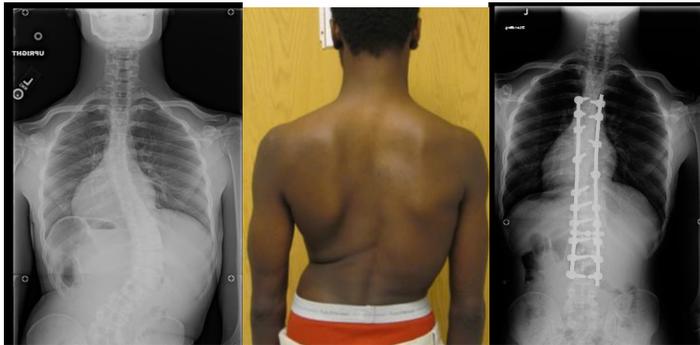
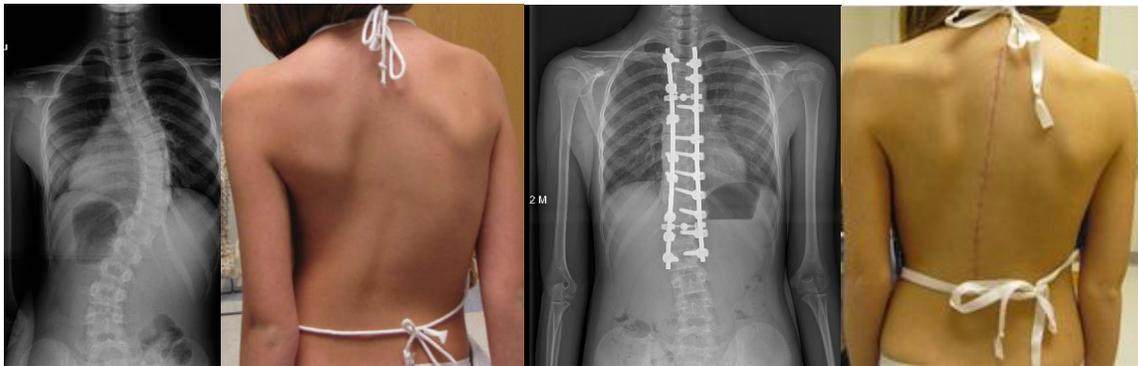


Dr. Scott Luhmann Spine Education Booklet



The Spine

The Spine is consisted of 26 bones known as vertebrae (7 cervical, 12 Thoracic, 5 Lumbar, the sacrum and the coccyx). Each vertebra is separated (except the top two in the neck) by a disc. Each disc has a soft jelly like center surrounded by a tough outer layer of fibers known as the annulus. Discs, bony structures ligaments and strong muscles stabilize the spine.

The spinal cord is composed of nerves leading to and from the brain. It controls and transmits all muscle movement and sensation for the trunk, arms and legs. Nerve roots come from the spinal cord and carry electrical impulses to and from muscles, organs and other structures. These nerve roots can become pinched or irritated by abnormal conditions.



Types of Spinal Fusions:

1) Posterior Spinal Fusion

The incision is down the middle of your back. The length depends on the number of vertebrae needing to be fused.

The majority of spinal fusion incisions made by Dr. Luhmann are completed this way

2) Anterior Fusion

The incision will be on your side near your rib cage.

3) Anterior/posterior Fusions

The incisions will be both on your back and on your side.

What is spinal fusion surgery?

This is a surgical procedure that is completed to fuse the vertebrae of the spine by using bone graft, pedicle screws and rods. The fused segments will be fused therefore motionless.

What is the goal of spinal fusion surgery?

The goal of surgery is to prevent further progression of the scoliosis and to correct the spine as much as possible in a safe manner.

How does Dr. Luhmann make a “surgical plan” for my child?

Dr. Luhmann reviews the patient’s age, diagnosis, history, x-rays, diers scan, MRI or CT (if needed), physical exam and clinical photos to determine the exact surgical plan for each patient.

You, your family, and Dr. Luhmann have made the decision to move forward with the spine fusion, what next?

- 1) Date of surgery scheduled
- 2) Date of pre-operative appointments scheduled (Dr. Luhmann, anesthesia, pulmonary function tests, and other provider appointments made if needed.)

Please let surgeon and anesthesiologist know all Medications!

Common questions?

STOP!!!STOP!!!STOP!!!

- ALL NON-STEROIDAL ANTI_INFLAMMATORY medications/arthritis medicines (such as Advil, Aleve, Ibuprofen, Motrin, Clinoril, Indocin, Daypro, Naprosyn, Celebrex, Vioxx, etc.) **two weeks** before surgery. Tylenol products are suggested for pain.
- STOP SMOKING and family members should NOT smoke in the household... it decreases healing time! Dr. Luhmann usually does not do spine fusion if you smoke or use smokeless tobacco
- Anesthesia staff will let you know during your preoperative visit which of your current medications should be stopped prior to surgery.
 - Some antidepressants will need to be stopped a few days to 1 week prior to surgery.
 - Some medications such as Insulin and Prednisone have specific instructions that may need to adjust prior to surgery.
 - ASPIRIN products and BLOOD THINNERS (Coumadin, Persantine) need to be stopped 1-2 weeks prior to surgery.

I have other implants in my body, what should I do?

- Notify Dr. Luhmann and the anesthesiologist
- Patients with pacemakers will need to check with their cardiologists to see if the pacemaker settings need to be reset 1-2 days prior to surgery. The electrical currents in the operating room could alter pacemaker rhythm if the settings are not adjusted.
- Patients with Deep Brain Stimulators or Vagal Nerve Stimulators may need to see the neurosurgeon prior to surgery.

How do I prepare my home?

- You **cannot** sleep on a waterbed or on a mattress on the floor
- Have a chair with armrests and a firm seat available that appropriate for your height
- Grocery shop prior to surgery and stock up on liquids (water, Gatorade, juice) and light snacks you enjoy
- Sleep on clean sheets the night prior to surgery

Can my mom, dad or caregiver stay at the bedside?

YES, we strongly recommend parents to be an active partner in your child's Post-Operative care.

What do I need to do the week prior to surgery?

- 3 Consecutive Days Prior to surgery wash your entire body below your neck with Hibiclens. Patients are given a sample and this can be found at your local pharmacy, Walgreens, CVS, Target Wal-Mart, etc.



- Pack your bag for the hospital

What do I need to bring to the hospital?

- Current List of Medications, dosages and frequency
- T-shirt/undershirt (under armor or off brand helps wick the sweat) for under brace, if necessary
- Robe
- Slippers
- Personal Items of comfort (blanket, stuffed animal, books, movies)
- Toiletry items you feel you will need during your stay (tooth brush, tooth paste, hairbrush, etc)
- Comfortable clothes for day of going home

What do we do the night before surgery?

- If you live far away, you may want to stay at a local hotel because you will be required to be here early. (Approximately 6 am) .There are discounts for parents and patients of St. Louis Children's and the current list is found at: <http://www.stlouischildrens.org/patients-families/visiting/lodging>
- Please shower thoroughly shampooing your hair and cleaning your entire body the night prior to surgery. Remember to use the Hibiclens back wash on the entire body below the neck for the last night.
- Please remove any nail polish, and be sure your nail beds are clean for surgery.
- The patient may NOT have anything to eat or drink after Midnight

When will I be notified of the time of surgery?

The Same Day Surgery phone nurses contact you the day prior to surgery between 4-6 pm to notify you of the exact time to be here. Most patients are told between 545 and 6 am arrival times.

Walking Through the Spine Surgery Steps...



Home-Same Day Surgery-Operating Room- PACU-ICU-Floor-Home

Dr. Luhmann: will see you at the preoperative visit. He does not typically see patients the morning prior to surgery. If there are any questions or concerns prior to surgery, please call Debbie or Kim before the day of surgery.

Same Day Surgery:

The 6th Floor Same Day Surgery Unit is where you and your family will begin your journey.

- ❖ The day of surgery you will be able to meet with the orthopedic resident or fellow, anesthesiologist, nurses, and child life therapist.
- ❖ Your weight, height and vitals signs will be obtained.
- ❖ You will change to a hospital gown, pants and socks.
- ❖ Girls will be asked to give a urine sample.
- ❖ You may be given medication prior to surgery by the nurse to decrease anxiety.
- ❖ You will have an IV catheter placed in a way that is Ouchless as possible.
- ❖ Your parents or the nurse will wipe your back with Hibiclens wipes prior to going to the operating room.

Operating Room:

While you are asleep:

- ❖ Your back and or abdomen/chest will be cleaned during surgery with special soap by the nurses.
- ❖ Gel pads and pillows will be used to have you placed in a comfortable position for surgery.
- ❖ We will have special electrodes placed on your body to check for neuro/sensory movement. If there is a question of the monitors not picking up, we will ask you to move parts of your body. You will not fully be awake. You will have pain medication that will keep you comfortable at all times during the surgery.



YOUR Family

Parents will be in the Same Day Surgery waiting room in either a cubicle or a room. Parents are called every couple of hours during the surgical procedure to notify them of where their child is in the process of the surgery. Parents are given a pager if they leave the area that works **ONLY** in the hospital.

Post Anesthesia Care Unit (PACU):

We will wake you up when the surgery is complete. You will then be wheeled in a bed to the PACU. When you are awake, we will be able to ask your parent(s) or caregiver to come to the PACU with you. In the PACU, you will be closely monitored by the doctors and nurses.

Pediatric Intensive Care Unit (PICU):

Patients will typically stay at **one** night in the PICU. The PICU stay is for the patients to have more one on one nurse care. The nurses in the PICU will have 1-2 patients at a time depending on the acuity.

Parents are allowed to visit, and one parent is allowed to sleep in the PICU. There is a parent lounge with lockers to hold personal items and chairs that pull out for sleep.

Parent involvement in care is **KEY** to Post-Operative success.



Surgical Floor/ 10th Floor:

Patients are typically transferred to the 10th floor which is home to the orthopedic patient after the night in the ICU.

This is a 30 bed unit with both single and double rooms. You may have a roommate.

The 10th floor nurses typically have 3-4 patients during the day and 4-5 patients at night.

The 10th floor has a parent lounge and small kitchen with a refrigerator and microwave.

Parent involvement in care is **KEY** to Post-Operative success.

Pain Control

You will have Pain. It is our goal to get your pain to a manageable level.

1)The day of surgery and the day after surgery you will have a Patient Controlled Anesthesia (PCA).

This is monitored by the Pain Service Team. The pain service team is a special team of doctors (anesthesiologists) and nurse practitioners who are trained in assisting in managing your post operative pain. If the patient is able to comprehend, the patient will be able to press the button for pain medication. The patient may also be delivered medication continuously through the PCA.



2) Day 1 Post-Operative you will be transitioned to oral medication. This will be a combination of over the counter medications (ie Tylenol), narcotics and anti- spasmatic meds if there is a need for this medication. The pain team works to individualize each patient's pain regimen.

3) You will be discharged with the same oral medications you are taking in the hospital. You will be told how to use these medications when you go home, and how to wean off the medications as time progresses from surgery.

NO IBUPROFEN for 6 months post operative.

Incision Site The actual incision will be closed with sutures and glue that does not need to be removed.

- 1) Immediately after the surgery the incision site will be covered with a dressing. This will remain intact until the orthopedic resident removes this on day 3.
- 2) The incision site should then remain intact. Do NOT pick at or remove the glue.
- 3) NO Showers for 7 days Post-Operative – sponge bath suggested at that time.
- 4) NO swimming in chlorinated pools for 2 weeks post operatively.
- 5) **NO swimming in natural body of water for 6 weeks.**

Activity

- Patients will be turned approximately every 2 hours using the log roll method. The nurses and physical therapists will go over with the family how to turn the patient properly.
- The physical therapist will be available to get the patient out of bed for the first time the morning after surgery with the assistance of the family. The goal is to be out of bed 3 times a day to chair and 3 times a day to walk.
- The parents will work together with the nurse and therapist to encourage and assist the patient to MOVE!
- The goal (if ambulatory prior to surgery) is to be up sitting, walking and to use the stairs prior to leaving the hospital.

Diet

- Day of Surgery-Patients will also be receiving Intravenous Fluids (IV fluids) and only first allowed ice chips/clear liquids.
- Day 1 Post-Operative patients are started on clear liquids and diet is advanced as tolerated. This can be a slow process after spine surgery.
- It is important to encourage frequent fluid intake and small frequent meals. You may have to start with crackers and slowly progress as tolerated.
- Nausea can occur and we can give medications to alleviate symptoms.

Pulmonary (lungs)

- ❖ It is important for you to use the incentive spirometer or blow bubbles 10x an hour in order to prevent pneumonias
- ❖ If you have a history of pulmonary issues, you may be seen by a respiratory therapist every 4 hours.



When can we go home?

Patients are ready to go home when:

- ❖ Pain is at manageable level by oral medications, remember pain is expected
- ❖ Tolerating liquids, light diet (i.e. crackers)
- ❖ Cleared from physical therapy
- ❖ The patient may NOT have had a bowel movement, but will be given instructions on management at home.

When is the best time to leave the hospital?

Plan your pain medication timing with leaving the hospital.

The ride in the car can often be bumpy! Bring your pink bucket home just in case you get sick to your stomach.

Idiopathic Spine Fusion Discharge Instructions	
Hospital to HOME:	4 days
Diet	<ul style="list-style-type: none"> ▪ High fiber and high protein- encourage small frequent meals with plenty of hydration ▪ Minimum of 6-8 glasses of water daily
Activity	<ul style="list-style-type: none"> ▪ Encourage getting moving ▪ Daily 30 minute walks which can be broken down into three ten minute intervals ▪ Physical therapy exercises three times a day
Medications	<ul style="list-style-type: none"> ▪ Refer to the calender provided by the pain service that references weaning off medications ▪ Continue stool softeners and MiraLAX if you are on narcotics to prevent constipation
Restrictions	<ul style="list-style-type: none"> ▪ NO Physical Education for one year ▪ NO spine twisting/torsion ▪ Refer to Post op activity spine guide ▪ NO IBUPROFEN or type products for 6 months post operatively ▪ No Driving for 4 weeks then may return if off all narcotics and physically able to slam on breaks ▪ Do Not Carry more than 10 pounds on your back
Shower	1week- gentle soap such as Dove recommended

Baths	2 weeks- only if incision completely healed
Swimming	<ul style="list-style-type: none"> ▪ ONLY when incision completely healed ▪ 2 weeks in chlorinated pool ▪ no natural bodies of water for 6 weeks post operatively
NO PEIRCING or tattoos	6 weeks post operatively
School	<ul style="list-style-type: none"> ▪ return to full time in 4 weeks and may return sooner if you wish ▪ Refer to back to school note: do not carry more than 5 pounds on your back, 2nd set of books, 5 minutes in between classes, NO PE for 1 year
Incision care	<ul style="list-style-type: none"> ▪ No creams, lotions or ointments to incision site ▪ Keep incision site out of sun by covering for 2 weeks Post-Operative and then if incision site exposed in the sun use SPF skin protection
When to call the DOCTOR?	<ul style="list-style-type: none"> ▪ Fevers greater than 101.5 ▪ vomiting ▪ incision site redness, warmth or drainage ▪ numbness tingling or weakness in your arms or legs ▪ change in bowel or bladder pattern ▪ rash ▪ increased pain not relieved by pain medication ▪ Patients MUST call prior to any dental procedures or surgical procedures for 5 years after surgery. We will give antibiotics prior to procedure to prevent any risk of infection.
When to Follow Up?	<ul style="list-style-type: none"> <input type="checkbox"/> Six weeks <input type="checkbox"/> Six months <input type="checkbox"/> One year-with Pulmonary Function Testing <input type="checkbox"/> Two years- with Pulmonary Function Testing <input type="checkbox"/> Three years- with Pulmonary Function Testing <input type="checkbox"/> Five years

Online Resources:

www.slch.org

www.ortho.wustl.edu

www.posna.org

www.aaos.org

You Tube – “Abby’s Scoliosis Surgery”

NO DIRECTED DONATIONS ACCEPTED FOR BLOOD:

Beginning in 2013, the blood bank at St. Louis Children's Hospital will no longer accept blood from directed donors (family and friends) for transfusion to patients, except in cases of medical necessity, *i.e.* when only a family member's blood would be optimal for transfusion.

The American Red Cross lists the following concerns about blood from directed donors*:

- "There is no evidence that patients can select safer donors than the volunteer blood system provides."
- "Social pressure associated with directed donations may compromise the reliability of the donor's answers to health-history questions."

We encourage family members and friends of patients to consider blood donation through the volunteer blood system as a way to give back to the St. Louis community. They can set up an appointment to donate or search for blood drives in their area through the American Red Cross website (<http://www.redcrossblood.org/>) or through other regional blood providers.