

Shilla Procedure Dr. Scott Luhmann



Important Phone Numbers



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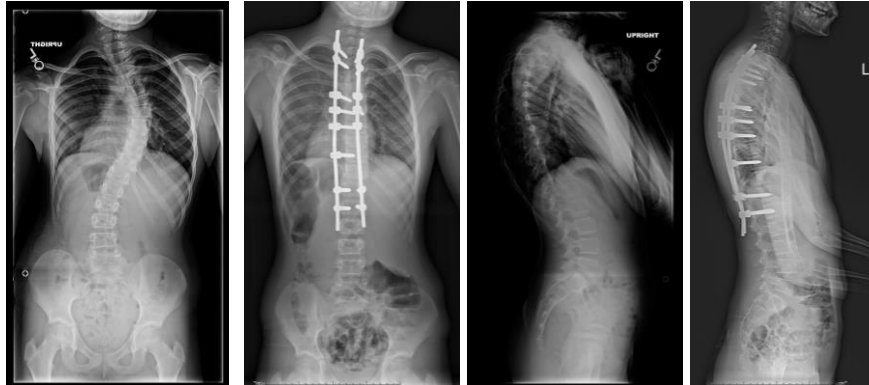
<u>Saint Louis Children’s Hospital</u>	<u>Phone</u>	<u>Hours</u>
Orthopedics Appointment Desk	(314)454-2500	8am-430pm M-F
Main Number	(314)454-6000	
Same Day Surgery-6 th Floor	(314)454-6174	
PICU 7 th Floor	(314)454-6213	
10 th Floor	(314)454-6038	
After Hours Number	(866)582-8055	
Outpatient Pharmacy- 1 st Floor	(314)454-4123	

Checklist prior to Surgery:

- Pre op Visit with Dr. Luhmann (Suite 1B) date and time _____
- Anesthesia consult (6th Floor) date and time _____
- Lab work and MRSA screen (2nd Floor)
- Clearance from other physician specialties seen

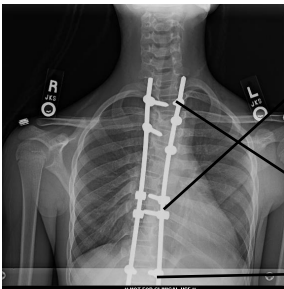
What is the Shilla Procedure?

- This a technique used that allows the natural growth of the spine and correction of the spine at the same time.
- The Shilla is similar to a track and trolley system. The rods are placed but are partially fixated to the spine. This allows the system to “grow with the spine”.
- Rod breakage can occur and this is a normal outcome. When rod breakage occurs, surgery is indicated.
- This is a newer technique being applied at leading centers across the country.



Pedicle Screws are inserted at specific points in the spine.

These in the center are holding the rods in place. The rods Attach/fixate there.



The rods are loosely held here. This allows for the spine to move and elongate at either end.

How would you know if a rod is broken?

- pain or discomfort
- visible clinical changes
- incidental find on X-ray

What happens if the rods break?

- The patient is evaluated at that time for the amount of growth remaining, curve size, and physical appearance of the spine, chest and trunk.
- This is not an EMERGENT, but an URGENT issue.



Broken Rod

There are several options when the rods break:

- 1) The system can be removed.
- 2) The system is removed, and the patient has another Shilla placed.
- 3) The system is removed, and the patient goes on to a spinal fusion procedure.

What is the average length of initial implantation of Shilla?

- From 4 to 6 hours

What does the surgical procedure involve?

- Typically patients are hospitalized for approximately 3-4 days.
- The patients usually go to the orthopedic floor. (10th floor)

What is the typical Post operative care?

- Patients work with physical therapy in the hospital only
- Patients will take it easy for six following the surgery
- Patient's incision will be covered by a dressing.
- The patient's incision is closed with dissolvable sutures and medical glue. The glue usually dissolves in 10 to 14 days.

Will the patient be on pain medication post operatively?

- **Yes**, Children are followed by the pain service team while in the hospital. At first the patient will be given IV medications. These will be discontinued after 24 hours and switched to oral medications.

- The oral medications will be the **same medications** that the child is sent home on.
- Typically at home most families report that the children take the pain medication for 10-14 days. This is variable and depends on each child's pain tolerance.

Will the patient have spinal cord monitoring?

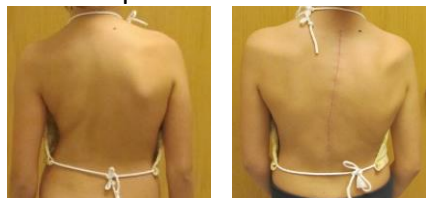
- This is decided on a patient by patient basis. If the patient has normal neurological functioning prior to the procedure, then there will be spinal cord monitoring.

How long are patients out of school?

- Patients typically are out of school approximately 10-14 days. Children should not return to school if they are still taking narcotic pain medications.

What does this incision look like?

- This is done through a single incision in the back of the spine
- Below is patient with shilla before and after photos



Will my child have the final spinal fusion type procedure?

- This decision is made by Dr. Luhmann, patient and the family.
- It would be suggested when near the end of the child's growth or if clinically is needed sooner.

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

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

Please bring a list of medications to your preop appointment!

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 medications such as Insulin and Prednisone have specific instructions that may need to adjust prior to surgery.
 - **If your child takes aspirin or blood thinners, we will need to contact the prescribing doctor for pre-op and post-op instructions.**

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 will need to have them turned off just prior to surgery and turned back on after.

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.



What do I need to bring to the hospital?

- Personal Items of comfort (blanket, pillow, books, tablets. There is Wi-Fi at SLCH)
- Toiletry items you feel you will need during your stay (tooth brush, tooth paste, hairbrush, etc)
- Comfortable clothes for day of going home
- 2 packs of sugarless gum- this can be chewed post op to help stimulate the GI tract.

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 braid hair if it is long enough.
- 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; this means no candy, gum, mints, etc.

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.

The Morning of 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 anesthesiologist, nurses, and child life therapist.
- ❖ Your weight, height and vital 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 antibacterial wipes prior to going to the operating room.

Operating Room:

- ❖ First you will go to sleep. You will not wake during surgery. You will wake up after surgery.
- ❖ We will place electrodes placed on your body to monitor spinal cord function. We will place additional IV lines and a urinary catheter after you are asleep.
- ❖ You will have pain medication that will keep you comfortable at all times during the surgery.



❖ The Day of 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) or recovery room:**

- ❖ We will wake you up when the surgery is complete. You will be asked to do a “wake up test”. You will then be wheeled in a bed to the recovery room (PACU). When you are awake, we will be able to ask your parent(s) or caregiver to come to the PACU with you.



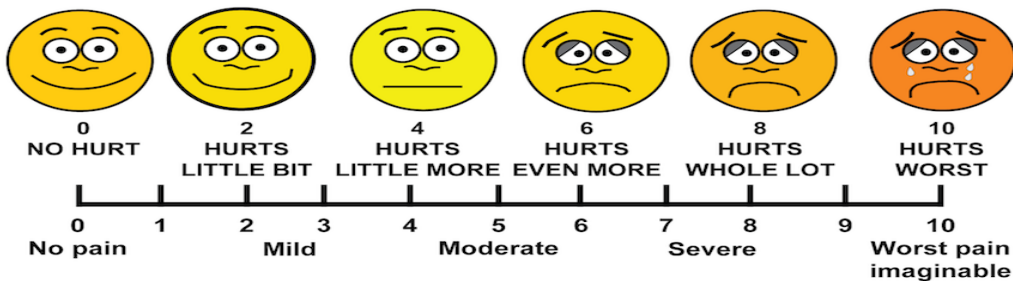
❖ **Surgical Floor/ 10th Floor:**

- ❖ Patients are typically transferred to the 10th floor after the PACU which is home to the orthopedic unit.
- ❖ There are both single and double rooms. You may have a roommate.
- ❖ 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. The expectation is a 5-6 out of 10.

PAIN MEASUREMENT SCALE



Pain Control

- 1) Starting the morning of surgery your pain will be managed by the Pain Team. This team consists of doctors and nurse practitioners from anesthesia.
- 2) After surgery you will get medications through the IV. You will be transitioned to oral medication within 24-48 hours. This will be a combination of over the counter medications (ie Tylenol), narcotics and muscle relaxers, 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 or NSAIDS for 6 months postoperative.

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 post-op day 3.
- 2) The incision site should then remain intact. Do NOT pick at or remove the glue. Do not put lotion on the incision site.
- 3) NO Showers for 2 weeks 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 patient and 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 evening of surgery or the am 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.
- ❖ Many children will get breathing treatments 4 times per day to help prevent pneumonia.



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 when leaving the hospital. Ask your RN for help with this. The ride in the car can often be bumpy! Bring your pink bucket home just in case you get sick to your stomach.

Shilla	Discharge Instructions	
HOME:	Return	3-4 days hospitalization
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 • three times a day PT exercises 	
Restrictions	NO PE NO organized sports for 6 weeks	
Shower	2 weeks	gentle soap suggested (Dove)
Baths	3 weeks	
Swimming	<ul style="list-style-type: none"> • 2 weeks in chlorinated pool • no natural bodies of water for 6 weeks post operatively 	
NO PIERCING or tattoos	6 weeks post operatively	
School	<ul style="list-style-type: none"> • return full time in 2 weeks; • may return sooner if family wishes • NO PE for 6 weeks 	
Incision care	<ul style="list-style-type: none"> • No creams or ointments to incision site • Keep incision site out of sun for 2 weeks Post-Operative and then if incision site exposed in the sun use SPF skin protection 	
Future Follow up		
Dr. Luhmann	6 weeks and then every 6 months	
Expect hardware to break	<ul style="list-style-type: none"> • Warning signs and symptoms of hardware breaking: visible bump, back pain or seen on x-ray • call office; not an emergency but will be treated in timely manner 	
Dental cleaning and procedures	Call our office prior because Dr. Luhmann will order an antibiotic for infection prevention for the first 2 years.	

Online Resources:

www.slch.org

www.ortho.wustl.edu

www.posna.org

www.aaos.org

You Tube – “Abby’s Scoliosis Surgery”

www.srs.org