

## ***POSTERIOR SPINE FUSION***

### **Why does my child need this surgery?**

This surgery is indicated for a child whose curvature of the spine has progressed to the point where the child is no longer able to sit comfortably. It is also indicated for a child whose curve is certain to progress to a severe degree. Often a brace can be used to position a child comfortably. However, the brace cannot stop the curve from worsening. The curve also becomes stiffer as it progresses, making it impossible to brace the child comfortably. Parents may choose to not address the curve with surgery. However, it must be understood that eventually the child may not be able to sit upright. This, of course, will impact the child's ability to leave the home and interact within the community, but is an option for the parents.

### **What does the surgery involve?**

The surgery may address any of several spinal deformities including scoliosis, kyphosis, or lordosis.

The surgery involves roughening the bone surfaces of the spine and removing the joints to allow the individual vertebrae to heal together as one long, straightened bone (fusion). This is accomplished with the addition of bone graft and the placement of a metal rod, which is wired to the spinal column in the straightened position. The bones "fuse", become

a solid bone, after several months. The area can no longer move and thus the correction lasts a lifetime. The rod typically used is called a "Unit Rod" and it provides the ability to straighten the deformity and to support the spine as it fuses.

Some children, who have curvatures that are very severe and or very stiff, will sometimes need a procedure to loosen the spine from the front before the back is addressed (anterior release.) This is a separate smaller operation, which can be avoided by addressing the deformity before it becomes too severe or stiff.





## **What are the incisions like?**

The incision is made from just below the neck, down the middle of the back, to the base of the spine. It is very narrow, but long. If an anterior release needs to be done first, that incision is on the side, along the rib cage.

## **What happens immediately after surgery?/casts?**

No cast is necessary after this surgery because the unit rod fixation is very strong. The child is transferred from the operating room to the Intensive Care Unit and remains there for 2-7 days. In our practice, the children are placed on a ventilator for comfort during these first few days. When the child is stable, he is moved to a regular hospital room and usually remains there for approximately 10 days. During that time physical therapy will be started; the child will progress to sitting and modifications will be made to his/her wheelchair. Children who are ambulatory will progress to standing and taking assisted steps. The child's nutritional status will also be carefully monitored.

## **Will my child have pain?**

Yes. However, the pain will be controlled with pain relievers and muscle relaxants. If, after your child returns home, you feel that he/she is having inappropriate pain or side effects from the medications, please call the office.

## **Will my child be able to walk? /activity at discharge?**

Most children requiring this surgery are not ambulatory. However, even those who do walk some, will probably need some time before they can walk as they did prior to this surgery. While in the hospital, the physical therapist will encourage walking and determine what is possible for your child.

## **Will my child be able to ride in the car?**

Children who have had this surgery are only limited with respect to their comfort level in terms of riding in the car. They are allowed to ride and have no restrictions. However, at first they can only tolerate short rides and do have added discomfort with rough rides.

## **Will my child need physical therapy?**

Specific physical therapy is not usually needed after a spine fusion. There will be no restrictions on gentle, range of motion of the arms and legs. For children who can walk, physical therapy is often prescribed to help return the child to his/her pre-surgical walking ability.

The social worker will help with arranging for therapy. However, individual insurance coverage will often dictate what therapy is possible. It is very helpful for families to inquire about their coverage prior to surgery in order to facilitate the process of obtaining what is needed for their child.

## **When will my child need to return to see the doctor/x-ray?**

The first return visit is usually three to four weeks after discharge and x-rays will be necessary at that visit. The next visit is typically scheduled two months from that first post-op visit and x-rays may or may not be necessary.

The following visit is then scheduled for 4 months (which will be roughly 7 months from the surgery date). After that visit, the child will be seen on the normal routine check-up every 6 months, with x-rays if the doctor wants them done.

## **Will my child need to be lifted or handled differently after a spine fusion?**

Your child will no longer be able to bend through the back, but will bend through the hips. There will be an adjustment period in which you will perhaps sense a different positioning of your arms when lifting the child. However, the surgery should make the child easier to handle and certainly easier to position in his/her seating.

## **When will my child be able to return to school? /bus?**

Typically, children are in the hospital for approximately two weeks after a spine fusion. They usually are not back to eating well and sitting for long periods of time for another few weeks. However, as soon as a child feels well enough to return to school, he/she may do so. Some children return for ½ days at first. Some children actually do much better when they return to school as they are distracted from their discomfort and enjoying the company of their friends. In short, the answer to when can a child return to school is very variable but there are no medical restrictions on the return to school.

The bus ride can sometimes be the one factor that limits the child's ability to return to school. If the child has a lengthy ride, the bouncing on the school bus can produce a good bit of discomfort. This would be a reason to delay the return to school, unless alternate means of transportation are available. The bouncing is not likely to cause damage to the spine or rod, but could cause discomfort.

## **How long will it be until my child has completely recovered?**

This is also very variable. If there are no complications, such as delays in getting back to sleeping and eating well, or infections, most children are recovered by six months. However, there are a number of factors that influence how quickly any individual recovers. Sometimes the child who you expect to have the most difficulty recovers the most quickly and the child, who had very few problems before surgery, takes longer to recover.

## **Will this surgery ever need to be repeated?**

Re-operation is extremely uncommon. Once the spine is solidly fused, permanent correction is expected.

## **What are the possible complications associated with this surgery?**

Children need blood transfusions with this surgery. There is an expected large blood loss because of the magnitude of this surgery. The risks associated with transfusions include Hepatitis and the AIDs virus transmission. The blood bank of Delaware has an exceptionally safe supply of blood.

The surgery involves working around the spinal cord and there is the risk of damage to the cord. In children who walk, or transfer, a specialist called a neurophysiologist to minimize the risk carefully monitors the spinal cord.

Infection is always a risk in any surgical procedure. Antibiotics are given prophylactically to minimize the risk.

Pulmonary complications can include aspiration and pneumonia. Antibiotics and the use of the ventilator are in place to reduce these risks.

Due to the magnitude of the surgery, there can be gastrointestinal complications, including nausea, constipation, and inability to take in enough calories. Sometimes patients need to be temporarily supplementally fed during the post-op period.

Your child's surgeon is very aware of all these possible complications and will make every effort to avoid them.

