

To help you understand your child's upcoming surgery, please read the following information. Feel free to ask us any questions that may come to mind. We are here to help ease your fears and make you feel comfortable about your child's surgery. We will take the time to discuss the surgery, so you will have a complete understanding of the goals as well as the possible complications of this type of surgery. We know this is a stressful time for you and your family, and we are here to provide any support you may need.

We have considered alternative methods of treatment before deciding upon surgery for your child. When other methods offer an equal or better chance of correcting your child's problem, we will choose the other method first.

The main purpose of this operation is to fuse the spine so that its position is maintained and no further curvature will occur. We will stabilize the spine by connecting metal rods to the vertebrae. In the average case this reduces the curvature by 50 to 60 percent, which is usually enough to make the spine appear straighter. This correction is maintained by fusing the bones over the area that is curved. This requires using bone graft taken from the patient's pelvis or from several ribs. These sites may be painful after surgery, but the bone readily grows back and there will be no external change in the pelvis. In some cases – to help make your child's surgery successful – bone from a bone bank also may be required. We will not do this without discussing the option with you and getting your consent.

Initially after the operation, your child may need to lie flat on the bed and may have restricted movement. Your child may start walking about two days after surgery. In some cases, a back brace may be used after the operation. The brace will be used for approximately two to three months, possibly more, to help with balance and to prevent local injury. Most patients who have had this surgery returned to school within one month of surgery. It will take six to 12 months for the spine to become completely fused. Your child will have returned to non-contact activity and school long before the fusion is complete.

In understanding your child's surgery, we feel it is important that you are aware of possible complications, although they are rare. Please do not hesitate to ask questions or discuss your concerns.

1. **Growth:** A fusion stops the growth of the spine in the area of the fusion. This usually does not present a problem except in very young children. By straightening out the curve, the operation actually makes the spine longer, and the lengthening makes up for the loss in growth. After about 10 years of age, there normally is not much increase in height from growth in the spine. Most growth comes from the legs. Even in very young children, when a spinal fusion is necessary, the amount of height lost is more than made up by the correction of the curvature.
2. **Stiffness:** The portion of the back that is fused will be completely stiff. In the usual case, however, this does not present a problem because the fused area is not necessary to the normal motions of the back. Most bending and twisting occur at the very bottom of the spine – an area we typically do not have to fuse. After our usual type of operation, your child will be able to touch their toes as easily as before by bending at the hips.

3. **Loss of Position of the Rod:** We take many precautions to avoid having the rods lose their position. The rods are placed in the spine in such a manner as to obtain maximum stability. Your child will be treated very carefully after the operation to prevent loss of rod position. If loss of rod position should occur, your child will have to undergo a second operation. The second operation would be much shorter than the first.
4. **Rod Breakage:** When your child's X-rays are evaluated at a check-up visit and a broken rod shows up, the physician suspects a false joint, an area where the bone graft and the vertebra did not fuse. When this happens, there will be movement in that area. This movement – over a period of time – places pressure on the rod and eventually may cause the rod to break. A repeat operation would be necessary only if there is significant loss of correction.
5. **Infection:** Occasionally, as in any operation, an infection can develop. This usually occurs within the first few weeks. The infection can come from two different sources – from bacteria that enter the operating area during the operation and from the bacteria that can enter the operating area from the patient's blood stream. The chances of this happening can never be reduced to zero. Every human being has some bacteria in their blood stream from time to time, and every roomful of air, no matter how carefully filtered, will have some bacteria as well. Antibiotic usage before, during, and after the operation helps prevent this from happening. It is important to let us know if there is any drainage from the wound or drain site following return to home.

If we detect an infection, a second operation may be necessary. This will involve cleaning out the infected material, washing out the operated area with antibiotics, and placing tubes into the back so we continually can clean out the infected material. The grafted bone material and the rods will be left in place and your child will be treated intravenously with antibiotics after the operation.

Occasionally a long-term, chronic infection (usually after one year) may occur. Unusual bacteria that do not respond to antibiotics typically cause these infections. Most often, operative drainage and removal of the rods are necessary to clear out the infection.

6. **Reactions to Blood, Drugs or Anesthesia:** Whenever someone is given anesthesia, blood or drugs, an unexpected reaction can occur. These reactions can vary from a minor rash, which goes away easily, to a very serious problem. A serious reaction is very rare and dangerous, but it usually can be treated effectively when it occurs in a hospital.

Hepatitis can develop after a blood transfusion or after anesthesia; however, it is very uncommon. Our blood bank thoroughly screens all our blood, and we only administer the necessary amount of blood. Due to the extent of this operation, additional blood usually is needed. Often patients can donate their own blood prior to surgery, diminishing or eliminating the need for blood from the blood bank. Even though our blood bank is extremely effective in testing blood and keeping it safe, it will never be as safe as your child's own blood. If for some reason that is not possible, we also allow you to select a donor for your child, for example a parent or relative.

7. **Loss of Eyesight:** Blindness, *ischemic optic neuropathy*, is an extremely rare and unusual condition following spinal fusion. There are fewer than 100 cases worldwide, and less than five have occurred to those younger than 30 years of age. We are aware of this potential complication, but have no ability to prevent it. Fortunately, it is extremely rare.
8. **Pressure Sores:** Although we take great caution in positioning and padding your child prior to this lengthy surgery, occasionally the pressure on the skin causes irritation and skin problems. Careful attention is directed toward prevention, however if it occurs, prompt treatment is initiated.

Post-op patients in braces also may have skin pressure problems. If you notice a stain or your child complains of pressure, burning or stinging under the brace, please let us know.

9. **Paralysis or Paraplegia:** In medical literature there have been reported cases in which surgery for a curved spine, especially a severely curved spine straightened a great deal, results in paralysis. We think this is caused by the stretching of the arteries that nourish the spinal cord, causing them to go into spasm. We want to emphasize that this is ***an extremely rare circumstance***. We have taken special precautions to detect any amount of paralysis early enough to completely reverse the problem. We have set up a program utilizing preoperative informed suggestion so we can awaken the patient during the operation and have them move their lower legs to evaluate any problems. This allows us to evaluate spinal cord function with no discomfort to the patient, and it gives us information at the exact time at which paralysis would occur. If we notice a problem, the rods will be removed immediately. In high-risk cases with severe deformity, we often utilize electronic neurophysiologic sensory and motor monitoring of the spinal cord. Early detection usually will result in reversal of the problem.
10. **Risks Specific to Anterior Spine Surgery:** If your child's surgery includes anterior spine surgery, some additional risks must be considered. Because anterior surgery may involve work close to your child's lungs, a special chest tube for drainage purposes is required. Some risk of pneumonia (lung infection) can occur. Some patients will notice temporary warmth and redness of one leg. In males, anterior spine surgery of the lumbar spine carries a small but real risk of impairing male sexual function.
11. **Smoking:** If your child smokes or is exposed to people who do, it can decrease the chances of a successful surgery. Smoking has shown to diminish the ability of bone to fuse or heal properly.
12. **Death:** Although it is rare, anytime someone undergoes an operation, death can occur. The possibility of death during this procedure is minimal. Our anesthesiologists have considerable experience with this operation and the special concerns associated with it. Every effort is made to identify possible family conditions (malignant hyperthermia) or allergies your child may have to medications, drugs, fluids or latex.

We would appreciate any information, concerns or relevant family medical history, specifically, reaction to drugs to assist us in making sure the surgery progresses as smoothly as possible.

This information is a summary of what we think is important for you to know about scoliosis surgery. It is intended to help you understand your child's surgery and encourage questions. By giving you information about potential complications, we do not wish to frighten you. We simply want to make sure you are aware of the potential risks involved with surgery. ***In actuality, these complications are quite rare.***

We want our patients to return to their active lives with as few restrictions as possible, fully able to play athletics (except football, heavy contact sports and gymnastics) and have children. We do not want them to have to worry about their backs.

It is extremely important that you and your child are aware of the occasional serious but usually controllable problems that may occur following scoliosis surgery. Fortunately, these complications are rare.

After carefully reviewing this document, please contact the scoliosis coordinator if you have further questions. Please return this signed form to the coordinator at your presurgery visit.

Parent/Guardian Signature: \_\_\_\_\_

Date: \_\_\_\_\_