# MAGEC® Growing Rods

**What is scoliosis?**
An abnormal curve to the spine that can get worse as your child grows. The curve is measured by x-ray. A curve of more than 50 degrees can lead to heart and lung problems. Once a curve reaches 50 degrees, surgery to place growing rods would help your child.

**What are growing rods?**
The rods keep the curve stable as your child grows. The MAGEC® growing rods can be lengthened from outside the body during clinic visits. There are also fewer x-rays needed as the process is checked by ultrasound. Once your child is done growing, the next step is spinal fusion surgery. Your child's surgeon will talk about this with you.

**Preop Clinic Visit**
You will meet with your surgeon in clinic to learn about the procedure and process of MAGEC® growing rods. You may also meet with a pediatric anesthesiologist. When you schedule your visit, please let us know if you would like a tour of the hospital.

A consent form will need to be signed. Please let us know if you are the guardian or the parent. Please bring FMLA paperwork if needed. Let us know if your child needs letters or notes for school.

During the visit your child will have:

- a physical exam
- lab work
- maybe an x-ray

**The Day of Surgery**
You and your child check in at the 3rd floor of American Family Children's Hospital (AFCH). You are brought to a private room. A pediatric anesthesiologist and your surgeon will answer questions before starting the procedure. You may go back to the OR with your child until he falls asleep. The procedure may take 4-6 hours.

**Monitoring**
Spinal cord monitoring is used to make sure your child is safe. It follows nerve function during the surgery to reduce the risk of spinal cord injury or paralysis. Monitoring is closely followed by a neurologist. If there is a change noticed, the surgery is adjusted right away to prevent injury.

**How are the rods placed?**
The MAGEC® rods are made up of 2 titanium spinal rods. They are placed using pedicle screws, hooks and connectors. The rods have a small magnet. The magnet allows the rod to lengthen without needing surgery.

**What are the risks?**
Due to the length and type of surgery there is a risk for blood loss. Before surgery, your child's blood type is tested in case a blood transfusion is needed.

**How big will the scar be?**
There will be one incision along the middle of your child's back. The length depends on the type of curve.

## Hospital

**How long will my child be in the hospital?**
3-5 days.

**Will my child have pain?**
An IV is placed in your child's hand or arm during surgery. IV pain medicine is given through a pump that has a button for extra doses. This medicine is managed by a pediatric anesthesiologist. Once your child can eat, pain medicine is given by mouth.

**Will there be physical therapy (PT)?**
Physical therapists work with your child to help with moving or transfer needs. Before PT your nurse should give your child pain medicine.

## Discharge

**What kind of pain medicines will my child use at home?**
Your doctor and nurse will review how to give your child the oral pain medicine used in the hospital. They also tell you how to slowly stop it. While your child is taking this medicine, also give medicine to prevent constipation. If you need a refill, please call the pediatric orthopedic clinic.

**What are my child's activity restrictions?**
Your child should not bend, twist or pick up anything for 3 months. This will help the anchored parts of the hardware to heal. Please ask your surgeon if you have any questions about activities including PT.

**How much school will my child miss?**
Your child may get tired, but should start feeling better about 4 weeks after surgery. At first it may be best to return to school part-time. Time missed from school may be 3-6 weeks.

**When do I change the dressing?**
You will receive supplies and learn how to change the dressing when your child is ready to go home.

**When can my child take a bath?**
Your child may bathe about 2 weeks after surgery and soak the incision in a bathtub 3 weeks after surgery.

## Follow Up Visits

**How are the rods lengthened?**
The magnetic portion of the MAGEC® rods is found by ultrasound and a magnet. An electric motor driver is held over the magnets. The motor driver triggers the magnet in the rods causing it to rotate and lengthen.

**How often do the rods need to be lengthened?**
The first time is 6 months after surgery, then every 3 months. Your child will need x-rays twice a year. The magnetic part of the rod is seen by ultrasound and measured before and after the rods are lengthened.

**Will my child need new MAGEC® rods?**
It depends on your child's age and how much growing is left. If needed your child would have surgery to take out the rods and put in larger ones.

**Will my child's spine still grow?**
Yes. The MAGEC® growing rods support your child's scoliosis to keep it from getting worse. The rods are lengthened which allow the spine to keep growing.

**What happens when my child is done growing?**

Your surgeon will let you know when your child is ready for a spinal fusion. The MAGEC® growing rods and hardware will be taken out and replaced with spinal fusion hardware. A spinal fusion is the final surgery to treat progressive scoliosis. This corrects your child's scoliosis curve. Spinal fusion hardware is permanent unless there is a reason to take it out.