

Limb Lengthening and the TAYLOR SPATIAL FRAME

Sometimes we use circular fixators (Ilizarov-type procedures) or we use combinations of different types of fixators. The principles of surgery and lengthening are the same regardless of the type of fixator that is used.



The biggest problem with limb lengthening is the duration of the procedure and having to wear an external fixator for many months. It is cumbersome, but rarely painful. It takes a long time for the bone to heal enough for the support to be removed. Six months is the average total time wearing the fixator, but it can be as long as a year when the bone is slow to heal. Pin infections can occur and require pin changes under anesthesia. Delayed bone healing may require bone grafting. Failure to obtain the desired length can occur if muscles or tendons get too tight during lengthening. Joint instability can occur at the joints above or below the bone being lengthened. Nerve stretching or injury can cause loss of sensation or strength. After the device is removed, the bone is weak for two months and fractures can occur unless the patient is careful following removal of support. Our experience has been published in scientific studies and we have noted that problems are fewer with shorter lengthening (less 5-7 cm). Overall, we found that one in five patients experienced an unexpected problem that required an additional return to the operating room for an additional procedure that was unplanned at the beginning of the lengthening.

In spite of these potential complications, we are usually able to achieve our goals and this is a better choice than shortening the bone when there is more than a 5 centimeter (2 inch) difference in leg lengths.

Your child may use the TAYLOR SPATIAL FRAME External Ring Fixator after surgery. The principles behind the TAYLOR SPATIAL FRAME system are really not too hard to understand. The TAYLOR SPATIAL FRAME is made up of 2 circular or half circle rings that are joined by 6 struts of different lengths. The frame will be held in-place by pins placed in the bone.



The frame has 6 struts that are designed to work together to correct bone healing. A specific day-by-day prescription for correcting a deformity has been created by your doctor. If your child is having a limb lengthened or correction, you will be required to assist in adjustment of the struts and you will receive a schedule for this.

After the surgery, your child will have often clinic visits to check on the progress. These visits could be as often as once per week after surgery. These visits will include an x-ray as well as strut adjustments and these visits could last from 30 minutes up to a few hours depending on what needs to be done.

Activity

- Allow more time for normal daily activities such as dressing and bathing.
- Allow for commitment to frequent doctor's visits.
- Wear loose comfortable clothing and comfortable shoes.
- Your activity will be advanced per your doctor's instruction which may include physical therapy or an exercise program.
- Keep as active as possible with activities such as movies, visiting friends.....etc. This will help stress and may reduce pain.
- Your body will require more rest between activities and more sleep, due to the body's increase need for energy.

Positioning

- Immediately after surgery, the affected limb should be elevated above the heart until there is no longer concern about swelling.
- To elevate the extremity properly, place a pillow under the heel of your foot so the knee is extended.
- To move the affected extremity, the fixator must be moved together as a unit. The amount of assistance needed depends on your ability to control you leg during the move.
- Sleeping is limited to one position—your back. Elevated your leg with pillows to secure positioning.

Pain management

- Elevated the affected extremity while at rest, securing the position and alignment to decrease swelling.
- Avoid over the counter anti-inflammatory medications and use the pain medication prescribed by your doctor.
- Use medication 30 minutes prior to strenuous activities, doctors visits....etc. This will allow your child to move easier and relax muscles.
- Use relaxation and distraction for pain management.

Pin site care

- During the first few days, expect yellow and bloody drainage from the pin sites.
- You may reinforce the original dressing, but the doctor will change the dressing at the first visit after surgery.
- Shower 5-7 days after surgery. Use cotton balls or swabs with water to remove dried blood from pin sites. Use gentle motion without irritating the skin.
- No contaminated water swimming (lake, oceans....etc.) Backyard chlorinated pools are OK.
- Your doctor may order whirlpool to promote wound healing.

Call your doctor with the following:

If your child develops a fever of 100.5 F or greater orally.

If your child has excessive swelling or pain.

If your child has thick cloudy drainage or odor from pin sites.