



## Lower Extremity Serial Casting Program

Welcome to the lower extremity serial casting program at Lurie Children's Hospital. We would like to use this letter to share with you important information about our program and the serial casting process. Below are some frequently asked questions related to the casting program.

### General Info

#### *What is serial casting?*

Serial casting is a process in which a joint or joints, which lack full range of motion, are immobilized with a well-padded plaster and fiberglass cast. The casts are applied and removed every one to two weeks. During this procedure the affected joints are gradually set in a more physiologically correct alignment, resulting in an increase in the range of motion.

#### *Why might my doctor refer my child for serial casting?*

- Serial casting is a conservative approach (i.e. non-surgical) to reduce the soft tissue contractures around an affected joint resulting in an increase in joint range of motion.
- To help obtain the optimum biomechanical alignment of a joint to prepare the extremities for further orthotic interventions (i.e. Ankle Foot Orthoses (AFOs)).
- To decrease the chances of an orthopedic deformity developing or progressing due to improper weight bearing over the foot.

#### *How will my child's participation in this program impact my family?*

It is important to recognize that this program may be inconvenient or stressful to the parent, the caregiver and the family. It can be very disruptive to family routine due to many required trips to the clinic for cast changes. The child's school schedule may be impacted. Despite everyone's best efforts, the length of the program is not predictable. We will work with you and your family to make this process as smooth as possible.

#### *What Documents Do I Need to Start the Program?*

You will need a recently signed order from your physician, in addition to the forms required by your insurance company. Our office staff will work with you to ensure all forms are completed and assist you in the insurance authorization process. If there is a break in the casting sessions for any reason, or your insurance changes, it may be necessary to obtain new physician orders and re-approval from your insurance company in order to continue with casting.

#### *How Long Does an Appointment Last?*

Casting appointments run two to three hours. The appointments are always at the same day and time. Casting appointments include cast removal, skin cleansing, measurement of joint range of motion and muscle circumference, manual muscle testing, observational gait analysis, reapplication of new casts and education concerning cast care, gait and home exercise program.



#### *What if I Arrive Late for My Appointment?*

It is very important that you arrive on time for your scheduled appointment. If you arrive late, the team will discuss with you what can and cannot be accomplished within the time remaining in the session. Please call if you know you will be late.

#### *How many children are involved in the lower extremity serial casting program at one time?*

The casting program is extremely busy. Generally, there are 4 children being treated at the same time. Our goal is to offer this program to as many children as possible. *We do not offer casting in the summer due to past experience with skin problems arising due to the heat.*

#### *What happens with my child's physical therapy sessions while my child is in serial casts?*

The physical therapists involved with the casting program will be training you in important alignment and gait activities which must be done while the child is in serial casts. We will be glad to discuss the specific activities and goals of the program with your child's school or private PT. It is important that the entire team caring for your child be able to successfully and effectively communicate in order to reach the program's goals. We have experienced a higher rate of success when the patient's primary physical therapist both understands and supports the casting program.

## **Casting Sessions**

#### *What happens during the first casting session?*

During the first session, baseline measurements of the joint range of motion, muscle strength, and muscle circumference are taken before the casts are applied. The orthotist and physical therapist will complete a gait or weight bearing analysis of your child. The first set of casts is then applied by the orthotist, physical therapist and an orthotic technician. We will provide you with any special instructions or precautions about the casts. Your child will be instructed in exercises to be done at home for one hour daily, which can be broken up through the day.

#### *How many cast changes will my child need?*

Once the casting begins, the casts are changed every one to two weeks until an acceptable range of motion goal is achieved. It is difficult to predict how many weeks of casting will be needed to achieve the desired result. It depends very much on how your child responds to the casting procedure. Some children have achieved desired results in as little as six weeks, while others have needed sixteen weeks or longer to achieve their goals. On average, a casting session lasts from eight to twelve weeks. There is no guarantee that the child will reach the target goal. If two weeks pass with no range of motion improvement, your referring physician will be contacted for further instruction.



*What will my child not be able to do with casts on?*

- No crawling
- No use of a walker or other ambulatory aid
- No w-sitting
- No hamstring stretching
- No trampoline or bounce house
- No monkey bars
- Casts cannot get wet

*When my child is in the serial casts will they be able to use the bathtub or shower for bathing?*

No. Plaster casts are not waterproof and should never get wet. We recommend sponge-bathing techniques to wash your child. A wet cast needs to be removed immediately.

*Are there any risks related to the casting and what should a parent do about them?*

There are risks associated with casting and it is important that every parent be very aware of what might occur.

- Decrease in balance and coordination due to the weight of the cast, which the child may not be able to adjust to. This may necessitate cast removal or additional physical therapy to better acclimate to the new cast.
- Cast saw cut/burn – a rare problem, but one that can occur.
- The following require cast removal:
  - Muscle spasms and/or pain
  - Pressure sores
  - Allergic reaction to materials
  - Swelling and or other signs of circulatory constriction, such as numbness, tingling, sensations, discoloration of nail beds
  - Damage secondary to compression to the peroneal nerve resulting in muscle weakness

The team will carefully review all of these issues with you. If you note any of the above problems, contact the Orthotics Department at 312-227-6210. If you are unable to speak with anyone, please bring your child to the nearest hospital emergency room for cast removal. We will provide you with a cast removal letter to facilitate communication with the emergency room staff.

*Are there any signs or symptoms one should be aware of while in casts?*

- Refusal to bear weight on either or both casted legs
- Unusual odors coming from the cast
- Cracks or dents in the cast
- Significant changes in your child's sleeping habits, general affect, or behavior
- A cast that appears to be wet
- Knowledge of small objects, like coins, beads, or Legos have been dropped into the cast

All of the above signs require prompt assessment of the casts and usually immediate removal.



*What happens if my child is sick on the day of my serial casting appointment?*

Please call us at 312-227-6210 to cancel your appointment if your child is sick. It is fine for your child to be in a multi week cast.

## Completing Casting

*What happens when my child achieves the target range of motion?*

Once the range of motion goal for the joint and/or joints has been achieved, the orthotist will take molds for weight bearing AFOs and night AFOs. While the AFOs are being fabricated a final cast is applied for two weeks. AFOs will be fit when the final casts are removed. To maintain the corrections achieved during casting, consistent use of the day and night AFOs is essential.

*Once the casts are finally removed, are there any issues of concern related to this procedure?*

In most instances, once the casting session is complete, your child is able to proceed with his/her daily routine. Occasionally, a child could experience one or more of the following:

- Children may require an adjustment period when transitioning from casts to AFOs
- The range of motion gained during the casting may be lost due to factors such as patient growth rate, effectiveness of follow-up therapy, illness of the patient, parental follow-up and /or pressing family concerns which preclude focus on follow-up.
- Re-casting may be needed every 1-2 years to regain or maintain adequate muscle length.

It is important to understand that therapy, bracing and consistent effort are needed to maintain the corrections obtained during the serial casting program.