World-Class Pediatric Rehabilitation

SERIAL CASTING
Welcome

Children’s Specialized Hospital is the largest and most preeminent pediatric rehabilitation hospital in the United States.

Our hospital is dedicated to improving the lives of patients through delivering superior specialized healthcare and medical services in a safe and caring environment. Through a blend of innovative therapies, personalized attention and compassionate support, our award-winning doctors and skilled pediatric therapists make a difference for children and their families each and every day.
Serial casting uses a well padded cast to immobilize a joint that is lacking full range of motion. The cast can be made of several different materials; including plaster, fiberglass and/or flexible cast. The material is chosen based on goals and your child’s needs. The casts are applied and removed in succession, usually changed weekly, over several weeks. The duration usually lasts between 6 and 8 weeks but will depend on individual patient progress and tolerance. During this procedure the affected joint(s) are gradually and repeatedly set in more physiologically correct alignment, resulting in an increase in the range of motion and change in muscle length.

**Why my child might be referred for serial casting?**

1. Serial casting is a conservative approach (non-surgical) to improving limited range of motion and functional mobility due to soft tissue tightness around an affected joint(s).

2. Serial casting may help obtain the optimum biomechanical alignment of a joint(s) to prepare the extremities for further orthotic interventions (braces, splints, foot orthotics).

3. Serial casting may decrease the changes of an orthopedic deformity developing and/or progressing due to improper weight bearing over the foot.

4. Serial casting may provide your child with appropriate sensory experiences while standing and walking by maintaining the foot and lower leg in optimal alignment for appropriate weight distribution, resulting in improved gait mechanics.

5. Serial casting may be recommended after botox or alcohol block procedures to obtain maximum benefit.
Some things you might notice if your child has tight calf muscles:

1. Frequent falls or difficulty walking due to poor balance, lack of heel contact (toe walking), toe dragging or catching the toes on the floor.
2. Pain or discomfort in the foot or ankle.
3. Your child gets tired quickly when walking.
4. Your child is unable to stand with feet flat on the floor.

The Evaluation Process:

According to Physical Therapy regulations, all children referred for serial casting performed by a physical therapist trained in casting, must undergo a physical therapy evaluation. At this initial evaluation, baseline measurements of joint range of motion, postural alignment, strength, gait and functional ability assessments will be performed. Having this evaluation allows us to identify if your child requires supplemental therapy along with casting to optimize their results. Your evaluating therapist will discuss any necessary recommendations at this time and develop a plan of care with you.

The First Casting Appointment:

The therapist will explain the casting process and provide you with any special instructions and precautions about the casts, their activity while in the casts or any special exercises to perform while the child is in the casts. Your therapist will also give you a written version of these instructions that you will need to sign, and this will serve as the “Patient Family Agreement”. Baseline measurements of joint range of motion are taken again before the casts are applied. The therapist may also do a brief gait assessment to help guide decision making for cast fabrication. The casts are then applied, taking into consideration any special padding...
or fabrication needs. The soles/heels of the casts will be modified with posting material if necessary to allow for full heel contact and weight bearing, as weight bearing will be essential in the success of serial casting.

**Frequently Asked Questions:**

**What is my job while the casts are on?**

It is your job to:

- Monitor your child’s skin and tolerance to casting.
- Help avoid getting the casts wet using the instructions provided to you at your first casting appointment.
- Remove the casts the night before your next appointment. You will be given instructions regarding cast removal based on the type of material that is used to fabricate the casts.
- Follow through on any specific recommendations to do at home while casts are on.
- Encourage walking for children who weight bear as walking will be important during this time.

**What happens during the follow-up casting sessions?**

Your child’s gait will be briefly assessed, their skin will be assessed and cleaned and dried. The therapist will take new range of motion measurements and identify any new concerns to be considered for padding or application. Casts will then be reapplied with improved alignment and range of motion. Changes to posting material will be made each week as necessary.
How many cast changes will my child need?
Once casting begins, the casts are generally changed weekly until the goal range of motion and alignment are achieved. It is difficult to predict how many weeks of casting will be necessary to achieve the desired result. It depends very much on how your child’s body responds to the casting procedure. Some children have achieved desired results in as little as four weeks while others require as much as eight to ten weeks. Unfortunately, there is no guarantee that the child will reach their target goal and if two weeks pass with no range of motion improvement, the therapist may choose to terminate casting and contact your referring physician to discuss progress.

How long does an appointment last?
Serial Casting appointments can be booked from 45 minutes to 90 minutes. Appointments are booked based on whether your child is having one or both limbs casted and the material being used, as well as any environmental factors the evaluating therapist might consider. These recommendations will be discussed with you at the time of your initial evaluation. With our best efforts we will book appointments at the same time and on the same day each week for consistency of schedule.

What if I arrive late for my appointment?
It is very important that you arrive ON TIME for your scheduled appointment. If you are late, we may not have adequate time to complete the casting process and therefore have to reschedule your casting appointment to the following week based on availability. Breaks in the casting process may slow your child’s progress. If you arrive late, the therapists will discuss with you what can and cannot be accomplished within the time remaining in the session.
What happens when my child achieves the target range of motion?

Once the range of motion goal for the joint(s) is achieved, your therapist may fabricate any recommended maintenance cast, whether it is a bivalve or univalve. If new braces are to be made at the time of casting your therapist will work with you and your orthotist on planning the timing of casting and delivery for new braces. To maintain the corrections achieved during casting, consistent use of recommended day orthotics and night casts are essential. It will then be important for your child to strengthen the joint in its new available range of motion; if your child does not use the range he/she has gained they will often lose it rapidly.

Are there any problems or precautions 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. A list of precautions to be aware of will be included in the Patient Family Agreement form mentioned before.

Some things that may require early cast removal include:

1. Muscle spasms and/or pain may occur.
2. Pressure sores
3. Allergic reaction to materials used
4. Swelling and or other signs of circulatory constriction (for example: numbness, tingling or discoloration of nail beds)
5. Damage secondary to compression of nerves resulting in weakness and requiring cast removal.
6. Decrease in balance and coordination due to the weight of the casts that the child is unable to adjust to, which will require cast removal.
7. Cast saw cut/burn – a rare problem but one that can occur.
If you note any of the above problems, it will be important to contact your casting therapist with the contact numbers that will be provided to you at your first casting appointment.

**When my child is in serial casts will he/she be able to use the bathtub for bathing?**

No. Casts are not waterproof and should never get wet. We recommend a shower or sponge bath with cast covers appropriately put on. A wet cast needs to be removed immediately.

This also means that if your child is involved in any aquatic program, he/she will be unable to participate while the casts are on.

**What would additional therapy sessions include, if recommended?**

Serial casting works to improve muscle length and range of motion, when this occurs; it often requires an adjustment in your child’s center of gravity and weight bearing alignment. Specific goals of a therapy program are, of course, tailored to the needs of each individual child however; treatment may include weight shift training, balance training, strengthening and gait training.

**How will my child's participation in this program impact my family? Is the program as demanding as it sounds?**

Serial casting is a very successful treatment approach for many of our patients and families, however, it is important to recognize that this procedure may be inconvenient and/or stressful to the parent, the caregiver and the family. It can be very disruptive to family routines secondary to the numerous required trips to the hospital for new casts. The child’s school schedule can be impacted as well. Despite
everyone’s best efforts, the length of the program is not predictable. The program may last longer than originally anticipated for a variety of reasons. Prior to beginning the program, it is important to understand all of the demands and stresses, which might occur, with you and your child secondary to the casting process itself and/or to the specifics of the program at Children’s Specialized Hospital.

One of our staff specially trained in serial casting would be happy to speak to you should you have further questions about the program.
An affiliate member of the Robert Wood Johnson Health System, and a member of Children’s Miracle Network Hospitals.

Children’s Specialized Hospital treats children and adolescents from birth to 21 years of age with a wide variety of medical, developmental, educational and rehabilitative needs.

We invite families to visit our hospital and outpatient centers, get to know us, and learn more about our nationally recognized rehabilitative programs.

For further information on serial casting, you can contact your referring physician, or phone Children’s Specialized Hospital, directly:

Mountainside: (908) 518-5841  
Toms River: (732) 914-1100 x 3815  
Hamilton: (609) 631-2800 x 2123

To schedule an appointment, find information on services, how to volunteer, or donate, contact us at:  
**1-888-CHILDREN (244-5373)**

Or, visit our website  
[www.childrens-specialized.org](http://www.childrens-specialized.org)