

## **WHAT IS SERIAL CASTING?**

Serial casting is a common procedure used by physiotherapists at Novita to stretch the calf muscle of the leg.

Children may have shortened calf muscles because of spasticity, limited movement or long term muscle tightness. Spasticity is caused by the brain sending too many messages to the muscle telling it to tighten. Serial casting is commonly done after Botulinum Toxin injections, when the muscle is relaxed, as this provides a good opportunity to stretch the muscle in a series of casts (see Related Information at the end of this document).

Some of the things you may notice about your child when they have a tight calf include:

- frequent falls or difficulty walking due to poor balance, lack of heel contact or toes dragging or catching on the floor
- pain or discomfort in their foot or ankle
- difficulty walking or running
- increased difficulty with physical skills such as jumping, hopping, kicking a ball
- getting tired quickly when walking
- difficulty putting on an orthosis (splint), or pain when wearing an orthosis (sometimes due to the splint rubbing against the leg or foot).

It is important for you and your therapist to have clear goals in mind before starting serial casting. For example, the goal may be for Jessy to be able to wear her splint comfortably. It is also important to plan ahead. For example, serial casting can be uncomfortable during the hotter months. Your child may have other events planned which may be more difficult if they are in a cast, such as a swimming carnival or school camp.

## **SERIAL CASTING – WHAT HAPPENS?**

Serial casting refers to the process of placing one or both of your child's ankles into a cast over a period of one to six weeks. The time in casts varies, depending on the amount of muscle tightness and the stiffness (spasticity) in the muscles.

Before the serial cast is applied the physiotherapist will measure your child's range of movement of each calf. They will also look at your child's walking or other physical skills. When the cast is applied, the physiotherapist will let you know when to remove it. If Softcast™ is used, the cast may be removed at home, allowing a short break between casts and a chance for your child to have a bath. For example, your physiotherapist may ask you to remove the cast after 5 days, allowing your child to walk without a cast for a day or two, before a second cast is re-applied.

There is no set time as to how many weeks your child will require casting, although your physiotherapist should be able to give you a rough idea before the process begins. It will, however, depend on how quickly your child's calf responds to the stretch provided by the casts. Novita physiotherapists generally do casting over 2 to 4 weeks.



### **HOW IS SERIAL CASTING DONE?**

- Movement ranges are measured by the physiotherapist and the allied health assistant.
- Your child lies on their back - the physiotherapist may ask you to assist by holding your child's knee.
- The physiotherapist holds your child's ankle in the desired position, and the assistant places a stocking on the leg up to the knee.
- A soft thin foam is added to any bony areas where pressure could occur.
- A white cotton wool wrap is placed between the toes and around the whole leg from the toes to just below the knee.
- White Softcast™ is wrapped from toes to below the knee - this is the first hard layer applied to the leg.
- The toes are exposed.
- A hard backslab is measured and applied, followed by wrapping another layer of Softcast™ of either red, blue or purple, which your child can decide on.

The child **can not** stand or walk in their casts for **at least two hours**, to allow the casts to dry and harden completely. Your child will be provided with cast boots or shoes to wear over the cast to allow them to stand or walk in the casts once dry.

### **THINGS TO CHECK WHEN THE CAST IS ON!**

While in the cast, your child should not be in any pain, but may feel some mild discomfort or a stretching sensation.

It is important to check your child's toes several times in the first 24 hours after the cast is applied. There is reason for concern if:

- the toes change color to white or blue and go cold or become swollen (this may mean the cast is too tight affecting blood flow)

- the toes are numb, or have a feeling of tingling or pins and needles, or have a loss of feeling (the cast may be too tight and may be squashing a nerve)
- your child complains of persistent localised pain, particularly around the ankle bones or on the heel (there may a blister or pressure sore developing)
- your child awakes at night distressed and crying, not simply due to discomfort, or not being able to move easily in bed.
  - If these concerns arise, contact your physiotherapist immediately.
  - In an emergency, or after hours, remove the cast at home by unrolling the Softcast™ bandage, pulling off the hard backslab and then unrolling the rest of the bandage. It is important to contact your physiotherapist as soon as possible to plan what needs to happen next.
  - If it is after office hours and you feel unsure about removing the cast yourself or have any other questions, your local hospital emergency department or General Practitioner can help.

### **IMPORTANT THINGS TO REMEMBER**

- Keep the cast dry - do not get it wet. This means no showers/baths, visits to the beach, walking on wet grass or puddles!
- Encourage children to stay away from sand and bark chips -these can get into the casts and irritate or injure the foot.
- Wear the cast boot to protect the cast.
- Avoid putting objects between the cast and the skin.
- If using an electric blanket switch it off when your child gets into bed.
- Keep the cast away from direct heat (for example, from a room heater).
- If the cast becomes worn through before the agreed removal time, please call your physiotherapist.
- Some children initially have trouble walking and balancing when the casts are applied - if this happens, allow a day or two for your child to get used to the casts and, if a problem persists, call your physiotherapist.
- It is important to encourage your child to stand with their knees as straight as possible during the casting time to enable the muscle behind the knee to stretch and to make the most of the time in serial casts.

## **BENEFITS OF SERIAL CASTING**

After serial casting your child should be able to move their ankle (assisted or unassisted) through a larger range of movement than previously.

This could mean:

- less falls
- reduced or absent toe dragging
- Improved physical skills
- less discomfort or pain in the leg or foot
- the ability to put their heels down or feet flat when walking
- increased ease in putting on splints and splints becoming more comfortable
- increased confidence when walking/running.

## **RELATED INFORMATION**

See the information sheet titled *Novita Parent Information – Botulinum Toxin* available from the [Factsheets page](#) of the Novita website.

## **NOVITA CHILDRENS SERVICES OFFICE CONTACT NUMBERS**

Early Childhood Services:

Regency Park Office	82438311
Paradise Office	82078940
Christie Beach Office	83295600

Child and Adolescent Service:

Parafield Gardens Office	81821000
Parkside Office	81729200

Physical Rehabilitation Program 82438311

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