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ORTHOPEDIC SURGERY

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SERIAL CASTING CARE GUIDE

Serial casting at the Paley Orthopedic and Spine Institute can be a non-invasive treatment option for any patient with muscle tightness and/or limited range of motion. The most common diagnoses we treat with casting are arthrogyrosis, cerebral palsy, muscular dystrophy, and various congenital abnormalities like club foot and vertical talus.

Serial casting uses a series of plaster or fiberglass casts with padding to stretch soft tissue by holding a part of the body in a 'stretching position' for an extended period of time. The cast(s) is applied weekly and can stay on for five to ten days maintaining the muscle in a stretched position. Changing the position of the body part or targeted joint each time a new cast is applied, gradually increases the flexibility of the muscle. Sequential casts are done to progressively provide a continuous stretch to the joint and increase range of motion. Typically, the time frame for a serial casting treatment can be anywhere from three to six weeks.

The overall goal of serial casting is to improve the patient's function. In addition to treating muscle tightness and limited range of motion, this non-invasive approach also helps correct joint alignment so that a patient can be given the appropriate orthotic device or further treatment options. By allowing the patient to perform functional activities without restriction, serial casting could actually prevent deformity. Serial casting is also a treatment choice to help plan for possible upper or lower extremity surgery and in some cases, to postpone surgery by gaining range of motion.

To schedule a serial casting evaluation or casting session, please contact the Paley Orthopedic and Spine Institute **Rehabilitation Department** at **(561) 844-7878**.

[What to Expect Before and During Serial Casting](#)

Prior to your serial casting session, you will be evaluated by a physical or occupational therapist. The therapy team at the Paley Orthopedic and Spine Institute is highly trained in serial casting and most therapists have vast experience with the procedure and various diagnoses. If you have any questions or concerns regarding the casting, please address them with the therapist at your first evaluation. Instructions about care of the cast and precautions are reviewed further along in this guide. It is important that you remain local during your treatment, please confirm with Dr. Feldman and the team how long they suggest that you stay in town. If you need assistance with lodging, **Jessie Smith** can assist you with making lodging accommodations. Her email is **jsmith@paleyinstitute.org** or she can be reached by phone at **(561) 866-6866**.

At your first casting session, the therapist will apply a fiberglass or plaster cast with proper padding to prevent skin irritation. The extremity will be casted in proper alignment at one or more targeted joints in the maximum available range of motion. The casting session can take anywhere from one to three hours, depending on the number and type of joint(s) being casted. After the first cast is applied, it stays on for a set length of time to maintain a static stretch. On your next visit, the first cast is removed, your range of motion is measured and then a new cast is applied, this time with a slight increase to the degree of stretch. Removing your cast is a painless procedure done with a special tool that vibrates.

Child Life Specialists **Jessie Smith** and **Kaile-Jo Scott** are available prior to and during the serial casting session for children to make things a little less scary, easier to understand and even fun. If you have questions or concerns regarding your child's experience with serial casting, please reach out to them.

- **Jessie Smith: jsmith@paleyinstitute.org or (561) 866-6866**
- **Kaile-Jo Scott: kscott@paleyinstitute.org or (561) 334-9135**

Kristen DeAndrade is Director of Patient Advocacy for Dr. Feldman and Dr. Huser. As a former patient, she is familiar with the surgical and rehabilitative process, and the highs and lows that patients and their families face before, during and after treatment. She was born with dwarfism and has undergone extended limb lengthening, deformity correction, and spinal fusion surgery. Kristen is a direct connection to Dr. Feldman, Dr. Huser and the team and is available to help make the journey as manageable for patients and their families as possible. From a patient standpoint, she can be a valuable resource, please do not hesitate to reach out to her.

- **Kristen DeAndrade**
Patient Advocate for Dr. Feldman and Dr. Huser
kdeandrade@davidfeldmanmd.com

Mia Johnson is the Family Liaison for Dr. Feldman and Dr. Huser. Mia and her husband adopted 4 children internationally with orthopedic needs, who are patients of Dr. Feldman and Dr. Huser. She has thorough experience with limb length discrepancy, cerebral palsy and skeletal dysplasia as well as various orthopedic care procedures, pre-surgical planning and

rehabilitation. Mia is available to provide patients and families with resources and advice in regards to lodging, clinic visits, hospitalization and support services.

- **Mia Johnson**
Family Liaison for Dr. Feldman and Dr. Huser
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**Find Mia and Kristen on Facebook, in the group 'Patients and Families of Dr. David Feldman at The Paley Institute (<https://www.facebook.com/groups/patientsofdrdavidfeldman>) where they can help answer questions and you can connect with other patients and families.

Your casts will be changed on a weekly basis until your range of motion progresses to the targeted functional level discussed with Dr. Feldman and your therapist. Everyone responds differently to serial casting so the number of casts and duration of treatment will be determined by Dr. Feldman and your therapist. Casting can last anywhere from three to six weeks. The patient is able to participate in school and other normal activities while the cast is on. The biggest challenge is keeping the cast dry, especially during the bathing process.

Dr. Feldman will advise what your needs are regarding orthotics after casting, if any. Orthotics or AFOs are generally made and to be worn once your serial casting procedure is complete. These help to help maintain your achieved progress and range of motion. It is generally recommended that the AFOs be worn around the clock to maintain the correction achieved with serial casting. Ideally, they are even worn while sleeping. This is an excellent way to increase the amount of wear time.

Serial Cast Care

Keep your cast dry. A soggy cast can cause your skin to blister or become irritated. Wrapping the cast in plastic bags (umbrella bags work great) or layers of plastic or shrink wrap and sealing the layers with medical tape protects the cast from moisture while bathing. You can also leave the extremity outside of the shower/tub when bathing. The cast should never be immersed in water.

It's important to protect the cast during activity, especially for children. Keep it covered with a sock to prevent dirt from getting inside the cast. If the cast is on a lower limb, be sure to wear a cast shoe.

You can expect itching, especially if you are down in West Palm Beach during the summer months. There is no practical way to prevent itching, which stems from the skin not shedding normally and heat and moisture inside the cast. Keeping the body part cool and dry is the best preventative measure. Avoid scratching it by sticking objects inside the cast, which can damage the cast and cause skin breakdown inside the cast. You can try tapping the outside of the cast with a wooden spoon or using a blow dryer on the cool setting.

Be vigilant with your therapy during your casting and after. Serial casting is not a standalone treatment. Most often, it is done to gain range of motion so you can have improved function,

such as strength and balance. Doing prescribed exercises at home helps to maintain your treatment results and therapy goals.

Serial Cast Precautions

Casts should never cause you pain. In the beginning they may take some getting used to as they can be awkward and heavy to carry around and might feel uncomfortable for the first few days. If pain does occur, you should contact Dr. Feldman and your therapist to determine a course of action.

Things to keep an eye out for include:

- skin reactions like rash, blisters or abrasions
- decreased sensation or poor circulation; weak pulse, nail bed not returning to its original color after being squeezed, cold to the touch, purple/blue skin discoloration and swelling can all be indicators. excessive sweating, sensory issues
- routine pain monitoring; complaints of severe discomfort and point tenderness could indicate muscle spasms or skin breakdown. circulation and skin condition
- keep an eye on the condition of the cast for external or internal damage; unusual odor can suggest that the cast has become wet
- position of the cast: occasionally, due to normal wear and tear daily activities, the cast may slip and no longer be in the position of correction. You can draw a line along the edges of the cast to monitor this.

What to Expect if You Require a Tenotomy

In the case of clubfoot, approximately eighty percent of infants will require a tenotomy after serial casting to achieve full correction. This is a non-invasive procedure to release the deforming force or overly tight achilles tendon. Depending on the child's age, the tenotomy may be done by Dr. Feldman in the office or with sedation in the operating room. In the event that the procedure is done in the operating room, you will receive instructions for the outpatient procedure.

After a tenotomy is performed, the child will be re-casted. This cast will remain in place for approximately three weeks and then the child will transition to orthotics or the proper bracing. These orthotics maintain the alignment achieved long term and prevent regression.

If you have any clinical questions or concerns for the team, please email them and they will respond within a few days.

- **David Feldman, MD: dfeldman@paleyinstitute.org**
- **Aaron Huser, MD: ahuser@paleyinstitute.org**
- **Tiffany Kochheiser, PA-C: feldmanpa@paleyinstitute.org**
- **Alyssa Clarke, PA-C: feldmanpa@paleyinstitute.org**

- **Katie Totten, PA-C: feldmanpa@paleyinstitute.org**

If you need to reach us for a medical question, we can be reached at **(561) 844-5255**. There is someone on-call 24 hours 7 days a week. For medical emergencies, please call **911** and go to the nearest emergency room. If you are staying locally, St. Mary's Emergency Room is the most convenient for Dr. Feldman and his team to be involved in your care.