Serial Casting in Lower Extremities

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What is it?

• “Serial casting is a noninvasive procedure that helps children and adults improve their range of motion so they can perform daily activities with less difficulty. It is a process in which a well padded cast is used to immobilize a joint that is lacking full range of motion.” ("Serial Casting”, www.sbjhealth.org)

• Specialized technique used in conjunction with therapy to provide increased range of motion. ("Serial Casting Program", www.ucpcleveland.org)
How is it done?

- The casts are repeatedly applied and removed weekly
- Each application the joints are set in a specific alignment
- Continue until range of motion is achieved
- Days to weeks
C Appearance of casts and foot

1st | 2nd | 3rd | 4th
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[Images of casts and feet]

[Images of casts on a board]
Who?

- Cerebral palsy
- Traumatic brain injury
- Duchenne Muscular Dystrophy
- Clubfoot
- Idiopathic toe walking
- Spasticity
- Decreased range of motion
- ("Serial Casting of the Lower Extremity", 2009)
Contraindications:

- Skin not intact
- Uncontrolled hypertension
- Edema
- Decreased bone density
- Arthritis
- Circulation
- Fixed contracture
Benefits:

- Increased PROM
- Improved passive manual stretching
- Cost
- Can help fit for orthotics
Therapists Role:

- Patient Education
- Stretching
- Passive ROM
- Measurements
Study

- 16 children were treated with intense stretching
- 16 children were treated with casting
- Treatment was done consecutively, both groups, during their first two months of age
- Then at four months the children were given a Knee Ankle Foot Orthosis
- The children were then reassessed using the Clubfoot Assessment Protocol
Study - Results

- The results showed that after 2 years, the children from the casting group had increase in mobility and quality of motion. This group also required fewer corrective surgeries when compared to stretching alone.

- (Andriesse & Hagglund, 2008)
Additional information:

- Cincinnati Children’s Hospital Medical Center
- Rainbow Rehabilitation Center
- St. Joseph’s Hospital
References

References (continued)


