



2023 World Symposium on Congenital Malformations of the Hand and Upper Limb

Minneapolis, Minnesota, USA May 17-20, 2023

Learn more at assh.org/2023congenital

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2023 World Symposium on
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Pollicization: why start therapy early

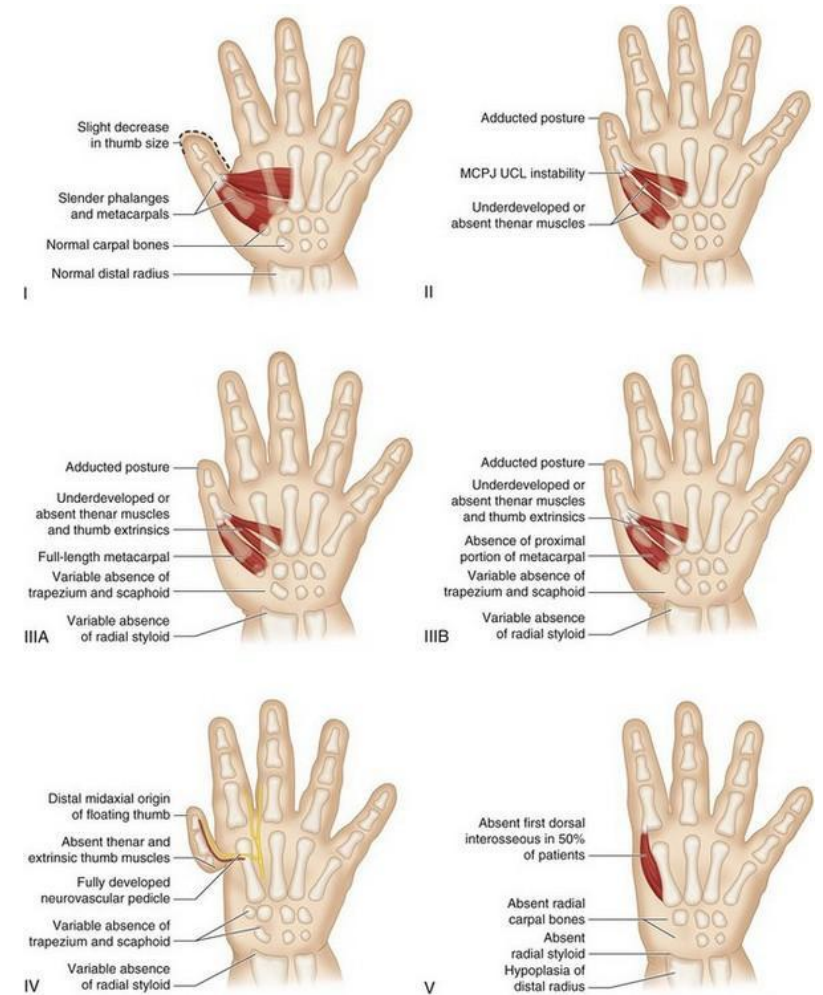
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Assuming that:

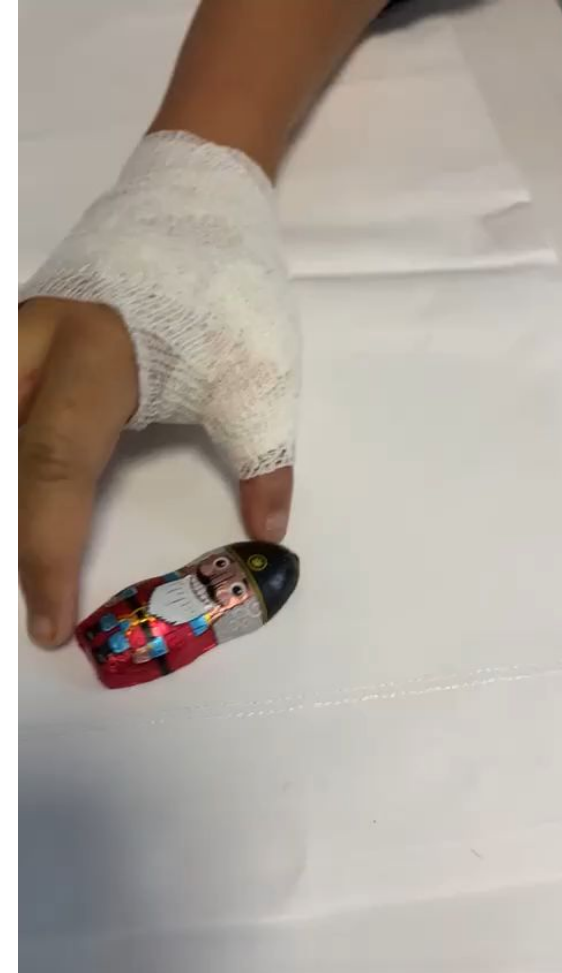
- Well accepted procedure of treatment from 1971 reviewed for more than 30 years (*Zlotolow, 2014*)
- Absence of the thumb results in a loss of 40 % of hand function (*Lighhdale-Miric, 2016*) up to 70% (*Hellevuo, 2020*)
- **The thumb can't be replaced by any other digit** (*Tomhave, 2019*)
- Pollicization is the procedure of choice for thumb hypoplasia and aplasia (*Zlotolow, 2014*) for Blauth IIIB, IV and V
- Suggested approximately around 1 year of age (*De Almeida, 2012*), (*Buck-Gramko, 1971*)





What is the GOAL?

- Create a better cylindric grip and pinch grip between the new thumb and the long fingers
- Have a spontaneous grip
- Have multiple choices of grasps
- Have a good aesthetic result, which also helps for acceptance by the caregiver *(Sandvall, 2022)*
- IMPROVE FUNCTION OF THE HAND





After surgery from Literature

- 4/5 weeks with a spica splint and then splint worn all day except quiet supervised activities. Then, from 5 to 12 weeks to wean from the removable splint with OT and supervised exercises (*Kozin, 2012*)
- 3/6 weeks (*Almeide, 2022*)
- 4-6 weeks and then family training for passive and active motion, buddy tape for 3/4 finger (1/2 time a week for 6 weeks) (*Lightdale-Mine, 2014*)
- What about you all?



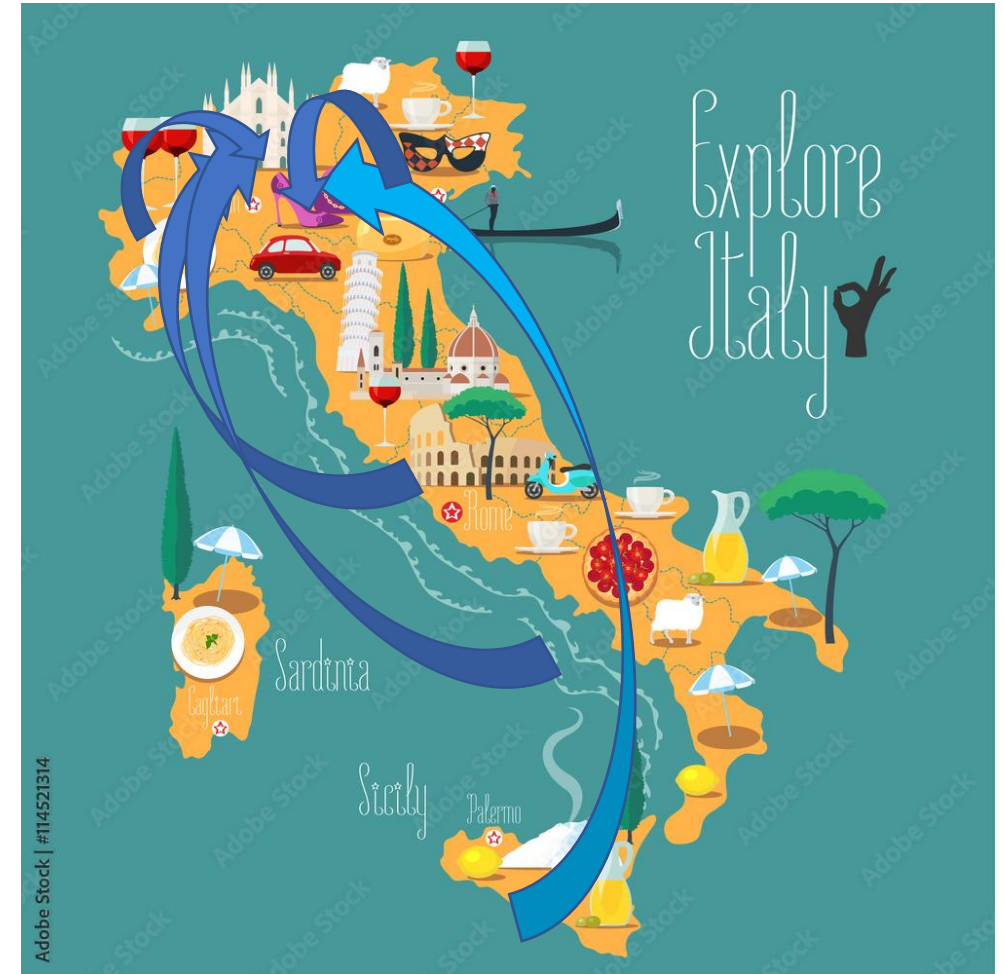


San Giuseppe Hospital, Milan



1996-2023

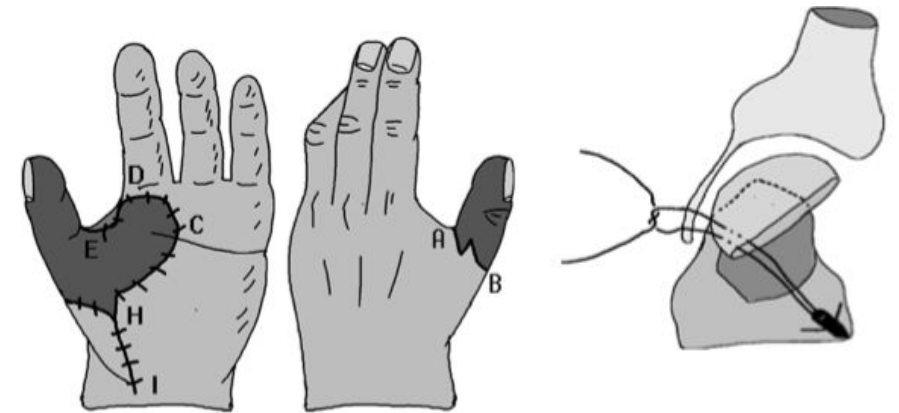
104 pollicized hands





Why did we start moving early?

- At San Giuseppe's Hospital, Milan our surgeon choose the Foucher technique
(no K-wire but Micro anchor Mitek resorbable)
- 10 years ago we started moving at 10 days and now we move even at 7 days
- Avoid stiffness
- Start early means gaining time (corticalization and grip milestones)
- Follow patients that are far away from home
- All our patients have surgery with the national health system



Methods



- 6 patients (3M, 3F)
- 7 New thumbs
- 3 years and 2 months average age
- Patients included: pollicization from September 2021 to August 2022 older than 18 months
- T-gap a T0 (pre op), T1 (7-10 days), T2 (21 days)



Our protocol: 0-7/10 days



- Immobilization with a cast made by the surgeon (elbow not included)
- At 7/10 days removal of the cast under anesthesia and □ removable antibrachius-metacarpal splint with IP joint of the new thumb free. Thumb in opposition paying attention to widen the newly created first web



7-21 days



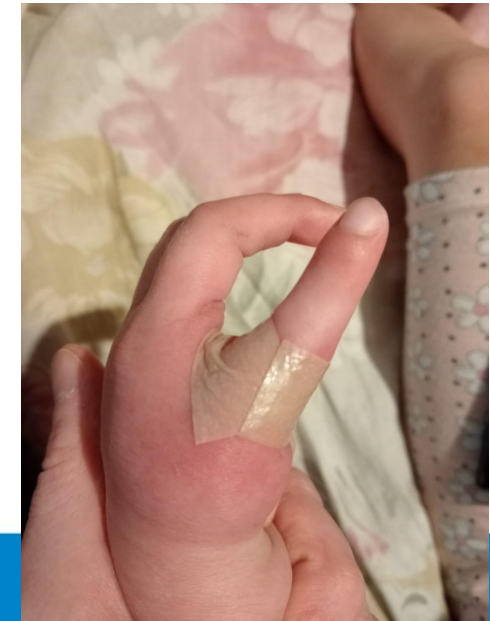
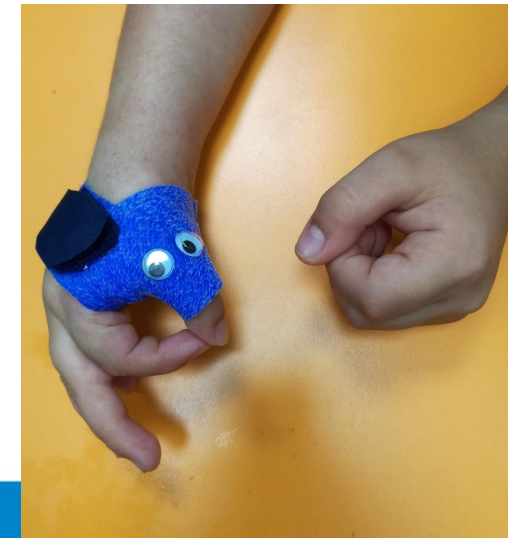
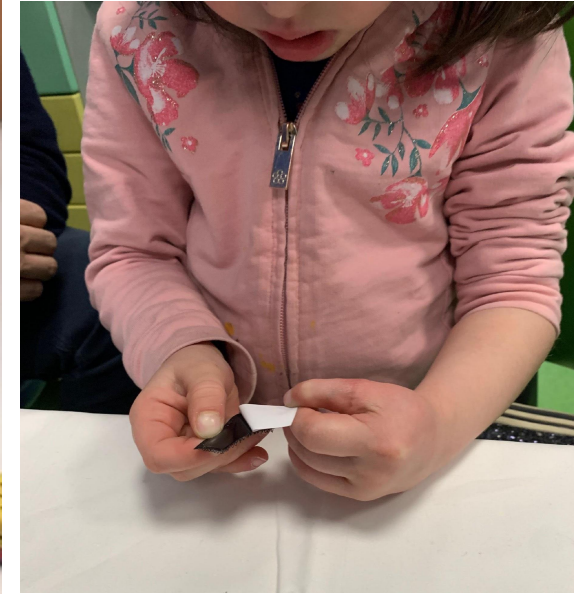
- 7/10 days -14 days splint is removed just during therapy sections at hospital and passive mobilization of IP joint
- From 14th day parents can remove the splint at home while the child is playing under supervision, at first for bimanual activities and then to try to grasp medium objects, start of the work at home with a home program
- Kinesiotape on the dressing to maintain a correct alignment of the 1st ray
- Everyday, also twice a day at the clinic





21-28 days

- Scar management with massages and thin silicon sheets for the night
- Higher requests for the new thumb: different sizes
- Passive but gentle mobilization of the CMC joint
- Buddy tape if needed
- Smaller day time/functional splint
- Home program is crucial
- 3 session/week



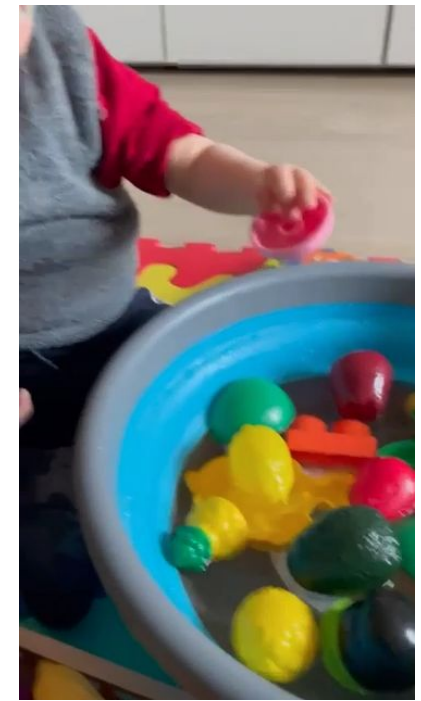
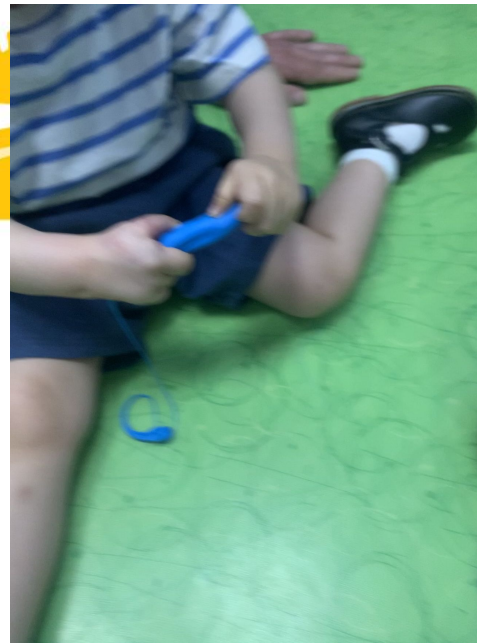
5th week

- Passive mobilization of the MCP joint is safe now
- Long splint for the night and functional splint for the day (wrist excluded)
- Sensitivity
- Care about 1st web
- 2/3 session/week



6th week

- Increase of ROM
- Strengthening
- Dexterity
- Dynamic/static progressive splints if needed
- Electrostimulation as a biofeedback
- 1 session/week



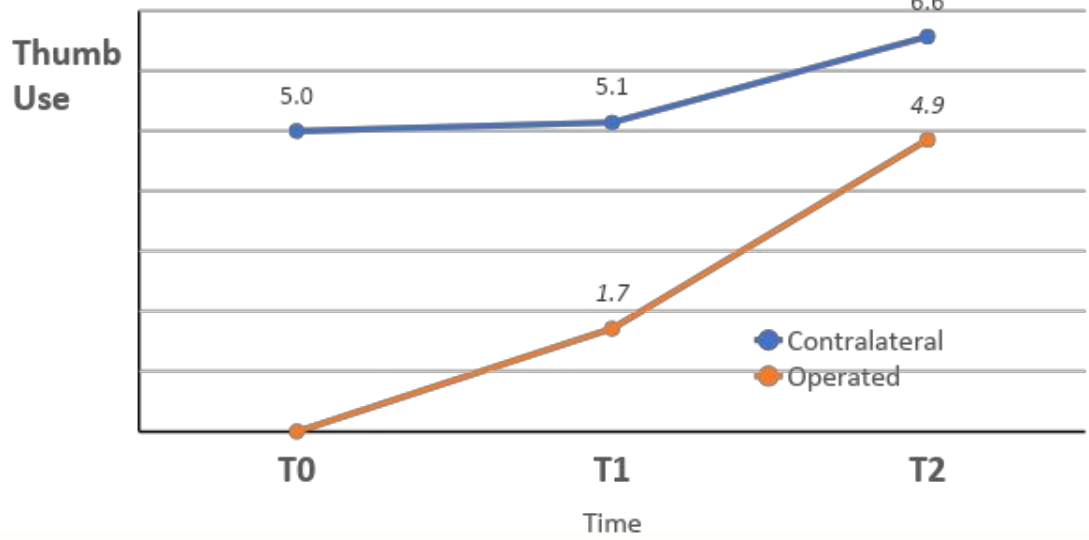
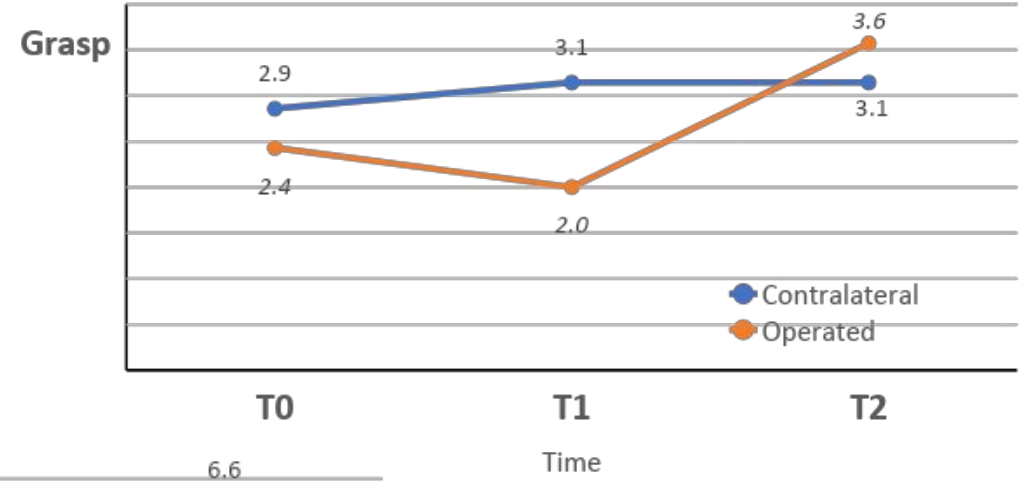
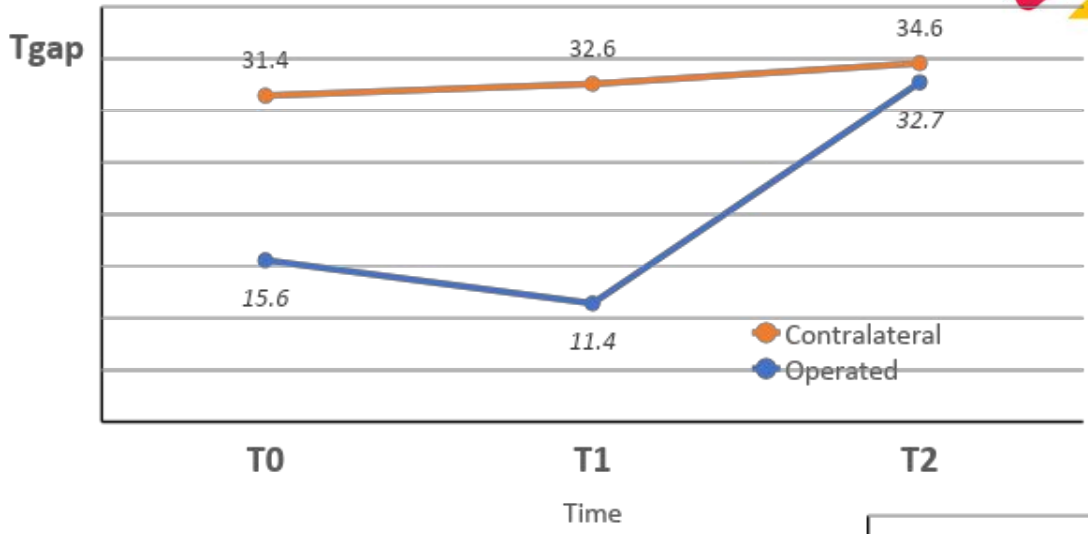
After 12 weeks



- Wean from all the splints during day, keep it for 3 more months during the night to keep 1st web wide
- All the activities are allowed



Results and discussion



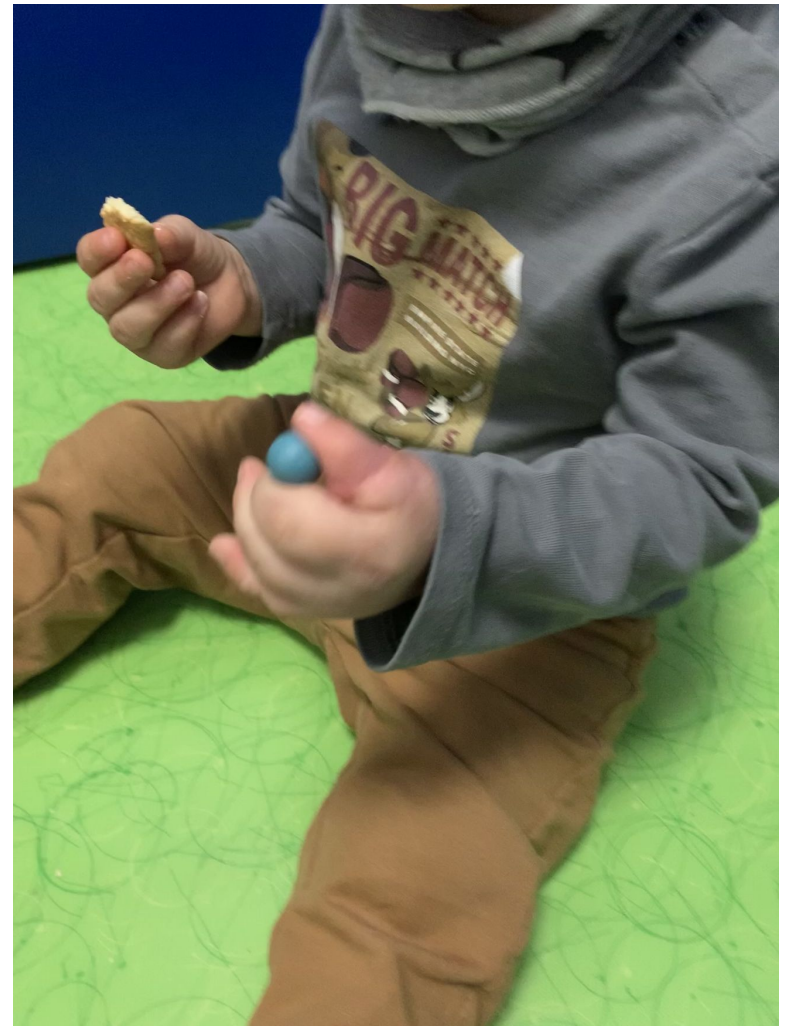
T0=Pre-op T1=7-10 days T2=21 days

This protocol is a guide but every child is different!



- How the transferred finger starts (axis, mobility, sensitivity)
- How the pre surgery patterns are
- Age
- Family support
- Child compliance





The harder the path, the greater the achievement!

Conclusions



- Early mobilization helps the families taking part in in the rehabilitation process
- Maintain the widening of the 1st web because we can check on it during the healing process
- Good grip, aesthetic result and patient's and caregiver's satisfaction
- Only 2 thumbs needed a dynamic splint to improve ROM: so early mobilization may help to avoid stiffness
- Two of the older kids sometimes integrate the scissor grip in addition to the thumb grip to be able to catch more than 1 object at the time
- The pollicization shows (statistically) relevant and significant improvements in the operated hand from T2 (before the average immobilization time)
- Some relevant improvements are seen already from T1 on the thumb Use, this means that all the majority of the patients starts to involve the thumb at 7/10 days
- In our experience, the early mobilization can be a good tool to follow the patient from the beginning and save time for the corticalization process





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THANK YOU!
AND
WE WAIT YOU
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