

Paediatric Hand Trauma: - Tendon injuries



Occupational Therapy Department
The Royal Children's Hospital
Melbourne, 2014

Presentation outline

- Incidence & common injuries
- Paediatric specific considerations
- Flexor tendon treatment – A guide
- Extensor tendon treatment – A guide
- Occupation in therapy

Incidence & common injuries

- Lacerations are one of the highest occurring injuries of the hand in the 1-2 year old age group
- Often lacerations to the hand, wrist or forearm can result in tendon damage



Paediatric Specific Considerations

- Healing time frames
- Impact of growth
- Inability to specify or verbalise pain
- Behaviour and occupations
- Mobility - stiffness is not usually an issue



Tendons – treatment

Goals of therapy:

- Protect healing tendon
- Return to normal hand function

Considerations:

- Healing faster in children than adults
- Prone to hypertrophic scarring – long term influence of scar
- Compliance limited by developmental and behavioural factors
- Ability to follow rehab instructions

Flexor tendons

- Most common injury site - Zone II
- Most commonly occurs in three year old children
- Increased surgical difficulty in very young patients – reduced number of core suture strands, decreased repair strength, sacrifice of FDS
- Paediatric treatment is different to treatment in adults

Flexor tendon treatment: A Guide

- Evidence supports immobilisation for up to 4 weeks following a flexor tendon repair, in splint or plaster

Age Considerations

School aged children

Children under 6

Splint or Plaster

Plaster

Wrist: neutral
MCPJ:
40-90° flexion
IPJ: neutral



Elbow: 90 ° flexion
Wrist: neutral
MCPJ: 40-90° flexion
IPJ: neutral



Flexor tendon treatment: A Guide

Week 1-4	Immobilisation
Week 3-4	Synergistic wrist and digit motion
Week 4-6	Cease splint/high risk tasks only Differential tendon glide Light functional hand use
Week 6	Extension splinting (if required) Extension stretches
Week 8-12	Resisted exercises Return to full activity

Extensor tendon treatment: A Guide

Considerations

- Very few problems with stiffness
- Tape beneath splint for skin protection and tape splints on to secure them
- Risk of mouthing / removing / swallowing small splints
- Generally managed with immobilisation approach



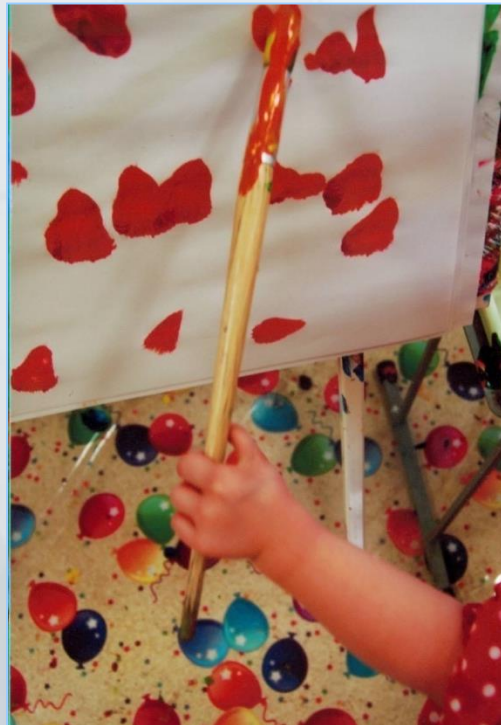
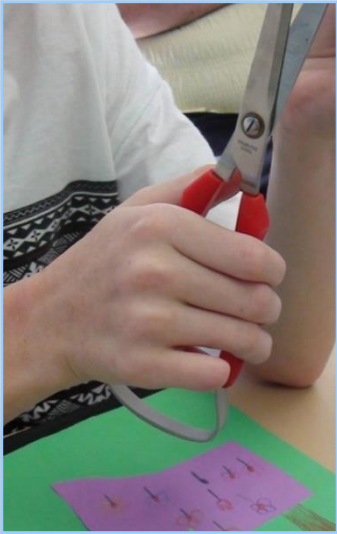
Extensor tendon treatment: A Guide

- Mallet Finger Zone I-II
Immobilise: DIPjt extension for 6-8 weeks
- Central Slip Zone III-IV
Immobilise: PIPjt extension for 4-6 weeks
- Proximal zones V-VIII
Immobilise: all digits & wrist in extension for 4 weeks
- 6-12 weeks – gradual return to flexion, functional hand use and resisted exercises

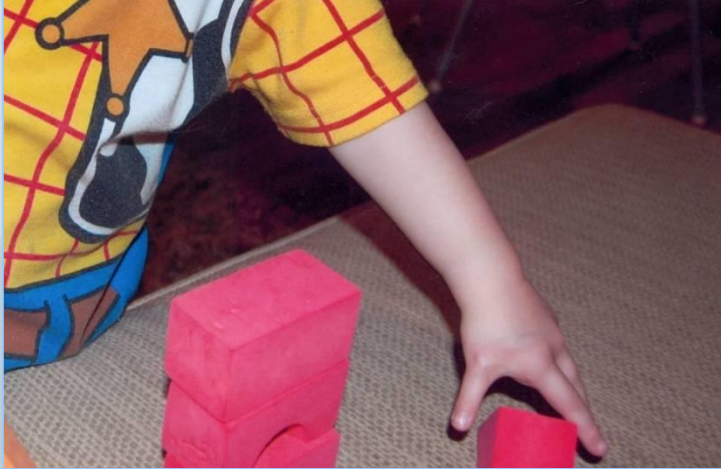


Therapeutic games and activities - general ideas for therapy

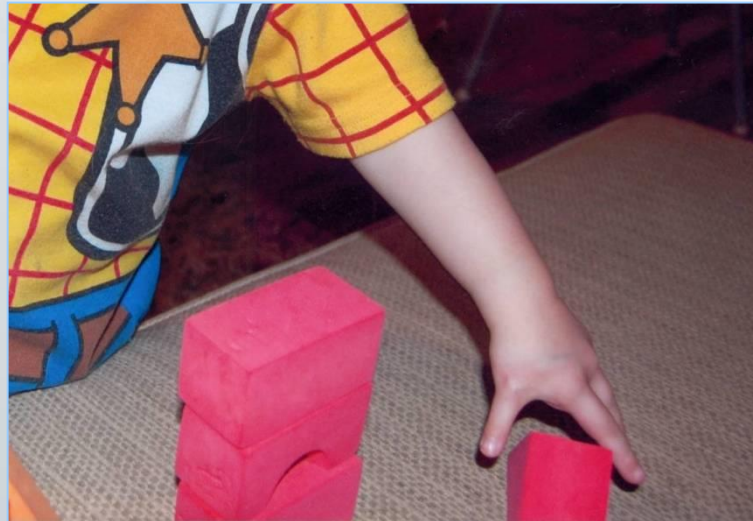
Flexion



Extension



Thumb





Occupational Therapy Department
The Royal Children's Hospital
Flemington Road
Parkville 3052
Phone (03) 9345 9300

With thanks to Tanya Cole and Josie Duncan