LRI Emergency Department

Guideline for the management of:

Finger Tip Injuries in Children

In the Paediatric Emergency Department (UHL Category C Guidance)

Staff relevant to:	**ED Medical and Nursing staff**
ED Guidelines Group:	**August 21st 2019**
Version:	**6** Re-Approved at ED Guidelines Committee Meeting 17th August 2022
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Finger Tip Injuries

Key Points:

1. Heal well (even amputation) especially in children
2. Use picture leaflet to give to parents
(published by 3M – "before and after" pictures)

Analgesia:

Document a pain score,
Good analgesia is essential. Early consideration of opiate (e.g. IN Diamorphine or Fentanyl) together with oral analgesia to provide good pain relief.

Initial Assessment: -

History

- Timing
- Mechanism of injury e.g. doors, windows

Examination

- Rings? (If Yes, Remove)
- Haemostasis?
    - Compression
    - High arm sling (Elevation 10-20mins)
    - Non-adherent dressing
- Bone exposed? Any deformity? Caution - # / dislocation
- Contusion?
- Contamination?
- Viable skin?

X-ray

- Assess level of injury
- Extent of bony injury

Document

- Deformity, Tenderness, Cold intolerance, Hypoaethesia, or Stiffness

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Consider immunization status and if any tetanus booster is required

IMMUNISATION STATUS	CLEAN WOUND	TETANUS-PRONE WOUND	TETANUS-PRONE WOUND
	Vaccine?	**Vaccine?**	**Human tetanus immunoglobulin?**
Fully immunised (5 total doses)	None required	None required	Only if high risk
Primary immunisations complete, boosters incomplete but up to date	None required unless next booster is due soon and it is convenient	None required unless next booster is due soon and it is convenient	Only if high risk
Primary immunisation incomplete or boosters not up to date	A reinforcing dose of vaccine and further doses as required to complete the recommended schedule (to ensure future immunity)	A reinforcing dose of vaccine and further doses as required to complete the recommended schedule (to ensure future immunity)	Yes: one dose of human tetanus immunoglobulin in a different site
Not immunised or immunisation status not known or uncertain	An immediate dose of vaccine followed, if records confirm the need, by completion of a full five-dose course to ensure future immunity.	An immediate dose of vaccine followed, if records confirm the need, by completion of a full five-dose course to ensure future immunity.	Yes: one dose of human tetanus immunoglobulin in a different site

Tetanus prone wounds:

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- Wounds or burns that require surgical intervention that is delayed for more than 6 hours.
- Wounds or burns that show a significant degree of devitalised tissue or a puncture-type injury, particularly where there has been contact with soil or manure.
- Wounds containing foreign bodies.
- Compound fractures.
- Wounds or burns in patients who have systemic sepsis.

High risk:

Any wound mentioned above that is,

- heavily contained with material likely to contain tetanus spores
- extensive devitalised tissue.

General Principles of Management:

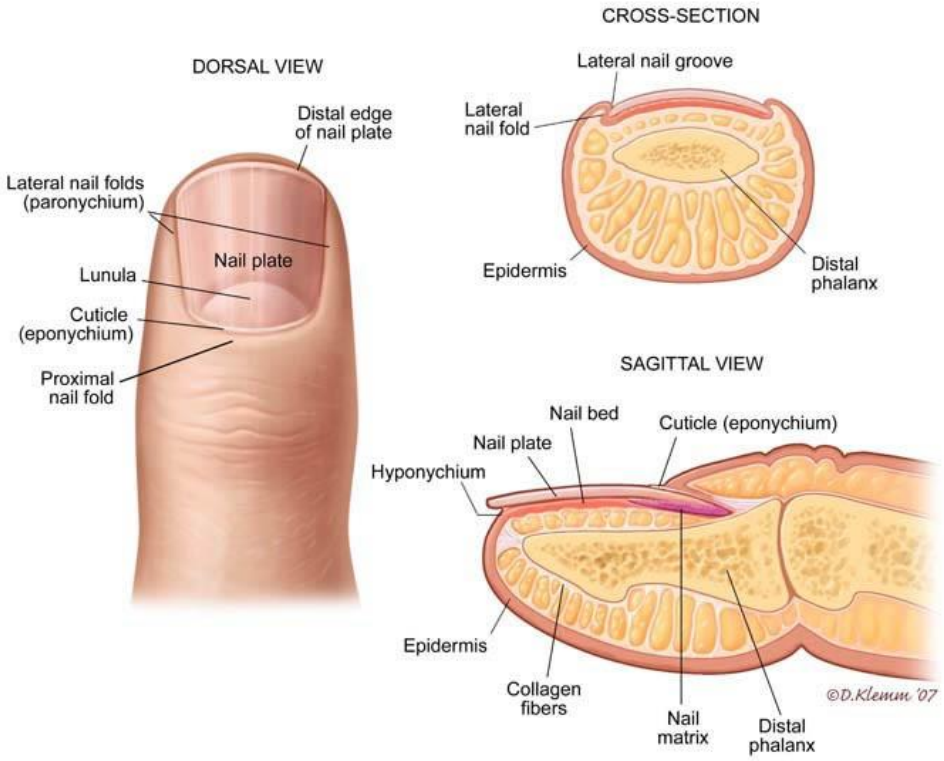
Conservative vs. Intervention

No evidence-based guidelines are currently available.

Generally the outcome is favourable in children with conservative management.

Therefore be as conservative as possible.

Preserving the germinal matrix under the cuticle is the most important principle.

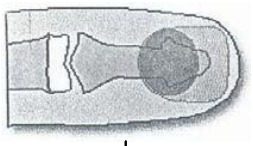


However, if a scar develops because of poor alignment of a laceration of the nail-bed edges, nail deformities can occur during regrowth of the post-traumatic nail.

If in any doubt, discuss with an **ED Senior,** Hand Surgery advice (Orthopaedics or Plastics) may be required.

Specific Injury Types

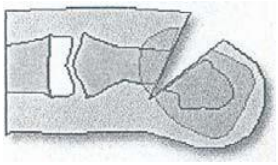
1.Simple skin avulsion



Area < area of child's nail → Simple dressing only **Discharge**

Area > area of child's nail → Simple dressing only **PED review clinic 1 week**

2.Burst Lacerations of Pulp

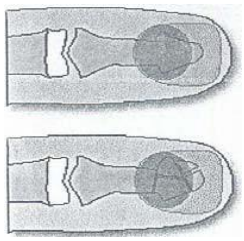


Without a fracture.
(if patient has a fracture follow open fracture advice)

Less than 50% Circumference	Greater than 50% circumference
Pulp is usually stable enough for steri-strips, applied longitudinally not around the circumference	**Pulp may need stabilising with sutures.** **Therefore consider:** • **Digital nerve block** **OR** • **Sedation ⟶ discuss with senior regarding ketamine** **OR** • **General anaesthetic (refer to ortho / plastics).**

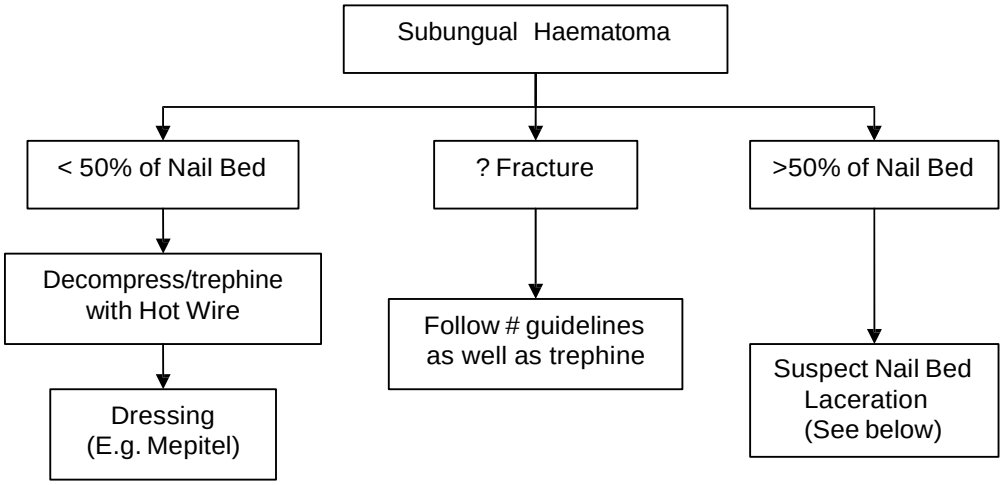
Review in PED clinic 3-5 days

3.**Nail Damage**



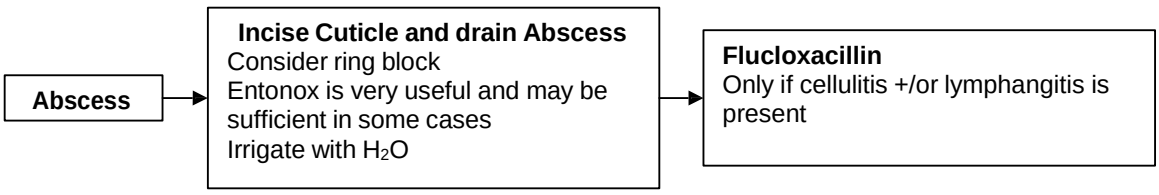
(i) **Subungual Haematoma**

Definition: A closed injury. (usually after a direct blow)
A collection of blood beneath finger nail – blood is trapped under the nail and therefore very painful due to pressure
If nail intact, pressure from haematoma painful. **Worth draining**.
Most likely successful if <24 hours but worth a go up to 3 days post-injury



(ii) **Paronychia**

Definition: Cutaneous abscess at lateral aspect finger nail.
Usually caused by biting nails and or picking skin.



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In-growing toenail: treat as above then refer back to GP

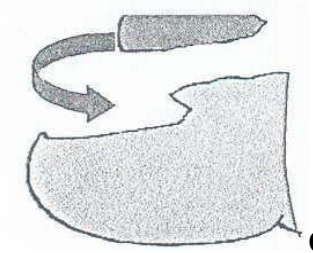
(iii) Nail Bed Injuries

(a)Nail Avulsion

Action: Trim distally if skin attached

If possible, reinsert proximal end of nail into nail bed to "guide" post-traumatic nail growth. Glue in place, steri-strips on top, to hold in position.

If nail too damaged to be worth re-implanting, or lost, use the wax backing of dressing to cut a customised sized nail and use this instead!



Co-Amoxiclav if associated # - See below

(b)Nail Bed Laceration

Suspect if↘ 50% subungual haematoma, or laceration across nail.

Action: Usually, no action necessary, but if older child or especially macerated refer to Ortho/Plastics.

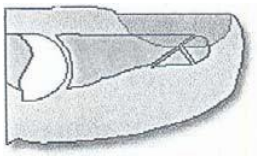
Explore yourself if nail partially avulsed so easy to get underneath.

Maxim: do no further harm – don't pull nail off just to have a look!

Follow up in ED Review Clinic 3-5 days.

For speciality referred patients, plastics review clinic (BPDC) / # clinic follow up.

4.**Fracture**



Have a low threshold for x-ray in crush injuries

x-ray

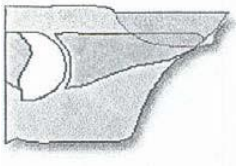
Confined to shaft of Phalanx, **undisplaced**

Anatomically Stable
Co-Amoxiclav if skin broken
Consider Nail bed laceration and treat accordingly

Through Epiphyseal plate (Salter Harris)

Anatomically Unstable
Refer Ortho/Plastics for consideration of fixation

(5) Amputation



Prognosis depends on how much of tip lost. **Don't panic!** Examine and categorise as follows:

1. No loss of nail and nail bed not involved → Excellent prognosis, **ED can manage**
2. Bone spared, pulp +/- nail involved → Shortened digit unusual but possible, **ED can manage**
3. Distal Phalanx involved (Especially at nail base) → poor healing, **refer**
4. Proximal amputation → **refer** for consideration of re-implantation if proximal to DIPJ

Note: Any of 2,3 or 4 can leave a painful scar

Treatment of amputated part

Keep at 1-5^{o}C but not frozen

- Handle tissue as little as possible
- Soak sterile gauze in normal saline and squeeze dry
- Wrap amputated tissue in gauze
- Place in sealed bag
- Place bag within a pot of sterile saline, and place this within ice. (gently cooling to avoid freezer burn)
- Label with patients details
- Make sure tissue does not come into contact with ice or be submerged in fluid.

Dressings overview

Non-adherent dressings, e.g. Mepitel are ideal.

Consider Jelonet, but not if you've used Steri-strips as the greasiness can displace the Steri-strips, jeopardising your repair.

Finger stock and then boxing glove dressing over top of initial dressing.

Get someone to show you the technique if you haven't done it before.