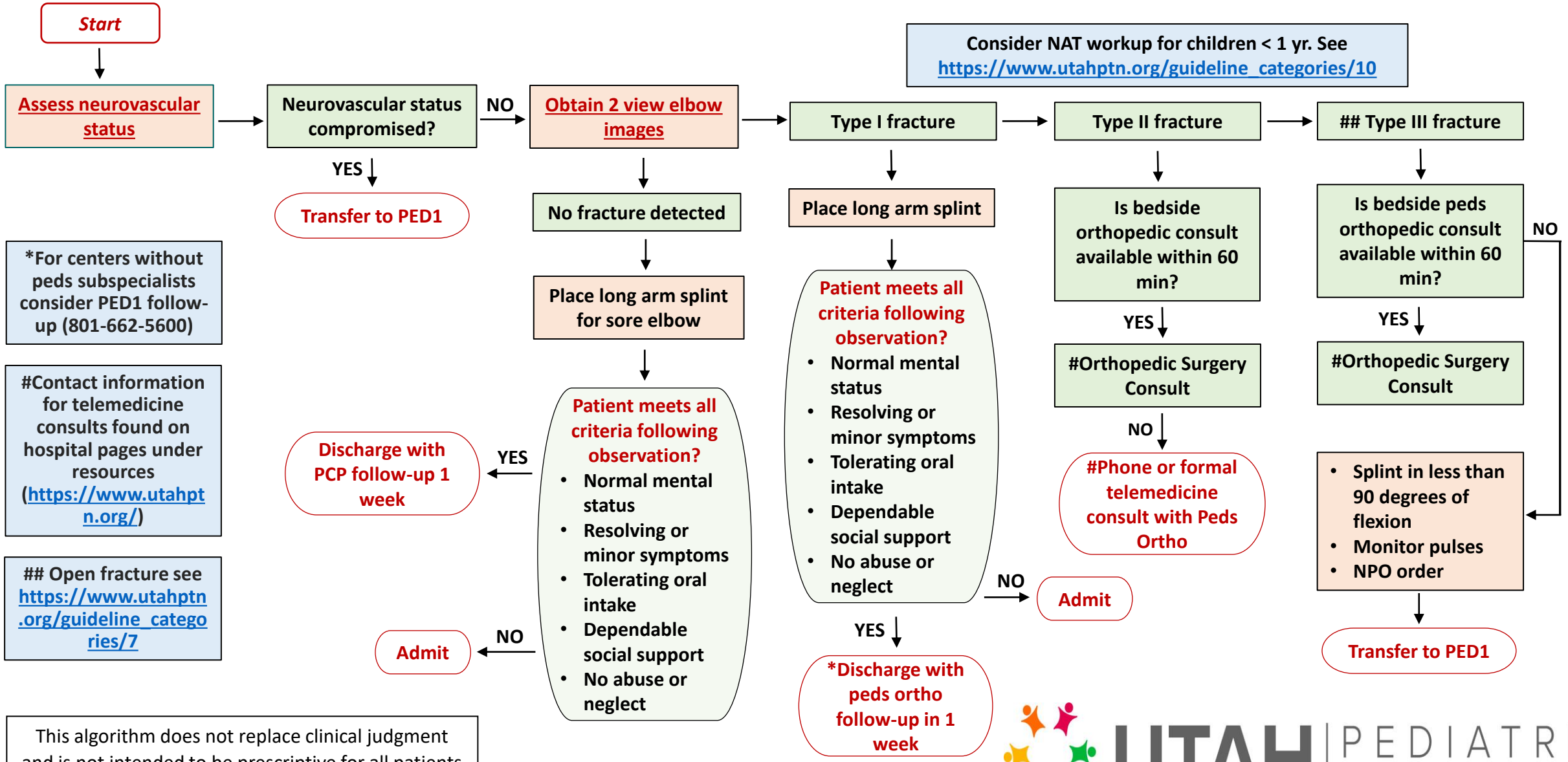
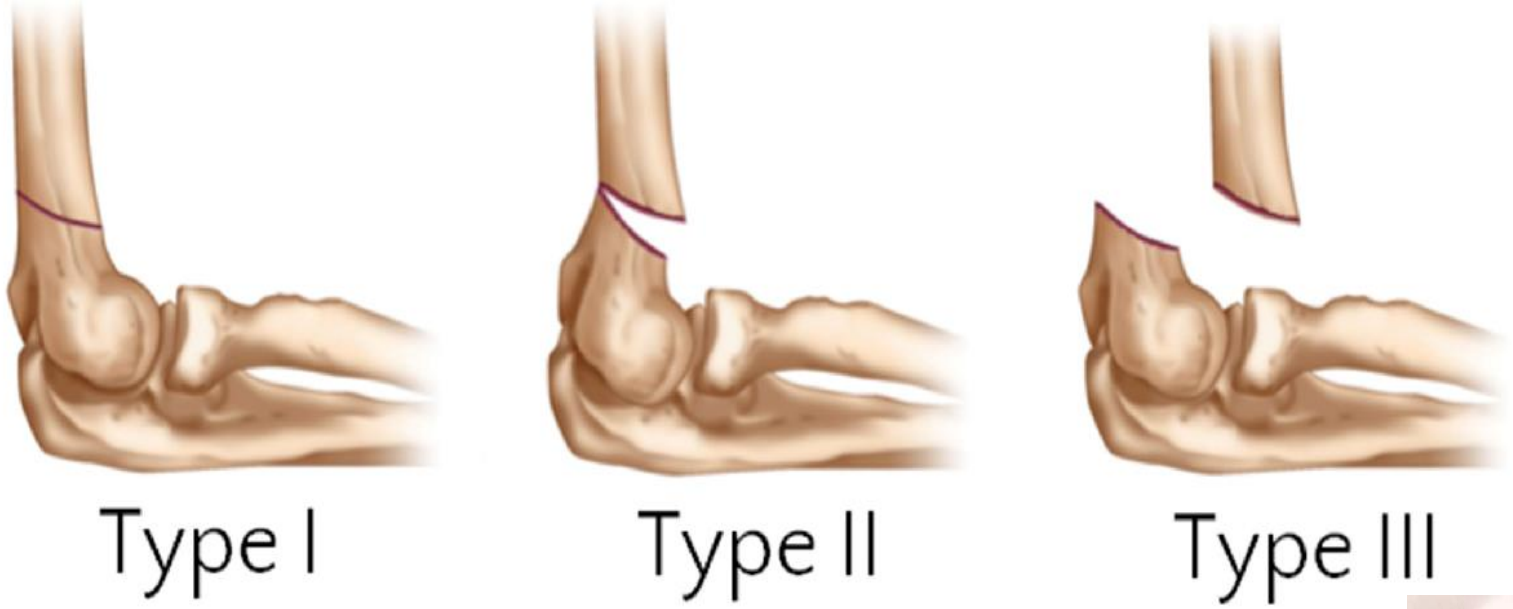
PED+ 2023 Pediatric Supracondylar Humerus Fracture Clinical Guideline



UTAH PEDIATRIC TRAUMA NETWORK

2023 Supracondylar Humerus Fracture Clinical Guideline



Type I	Non-displaced
Type II A	Intact posterior cortex, hinged in extension. No rotation or translation.
Type II B	Intact posterior cortex, hinged in extension, with some degree of rotational displacement or translation.
Type III	Complete displacement.

Assessing the reliability of the modified Gartland classification system for extension-type supracondylar humerus fractures
T. Teo, E. Schaeffer, +8 authors C. Reilly
Published 1 December 2019
Medicine
Journal of Children's Orthopaedics

DOI:10.1302/1863-2548.13.190005Corpus ID: 209892435

2023 Supracondylar Humerus Fracture Clinical Guideline

PEDIATRIC FOREARM AND ELBOW EVALUATION TIPS

4 major anatomical landmarks help the radiologists and surgeons read forearm and elbow x-rays to diagnose fractures & dislocations. Your images will help them determine if surgery is required.

- **ANTERIOR HUMERAL LINE** – can indicate type of fracture and displacement
- **RADIOCAPITELLAR LINE** – shows radial head dislocation
- **FAT PADS and JOINT EFFUSIONS** – abnormal fat pads indicate joint effusions which can indicate occult fractures
- **ANGLE OF DISPLACED FRACTURE** – if angle is less than 20 degrees it might not need surgery. If angle is greater than 20 degrees, the patient most likely needs to be seen by an orthopedic specialist.

ANTERIOR HUMERAL LINE:

A line drawn down the anterior surface of the humerus should intersect the middle third of the capitellum.

When it doesn't, there is most likely a fracture.

***Proper positioning, with no rotation, elbow bent at 90 degrees makes these landmarks reliable for diagnosis.**

Anterior humeral line does not intersect capitellum. Patient MAY HAVE a supracondylar fracture

Anterior humeral line intersects middle third of capitellum. No radiological fracture present.

If line intersects but is outside of the middle third of capitellum, the patient MAY HAVE a supracondylar fracture

https://intermountainhealth.sharepoint.com/sites/DCimaging/_layouts/15/viewer.aspx?sourcedoc={10ebbdd5-3ada-49e0-a937-990fc33bf897}

PEDIATRIC FOREARM AND ELBOW EVALUATION TIPS

RADIOCAPITELLAR LINE:

A line drawn down the middle of the neck of the radius should intersect the middle of the capitellum. It is important to ensure that you draw the line down the radial neck and not along the shaft because of the slight angulation at the neck of the radius.

If the line does not intersect the capitellum, it is likely that the radius is dislocated.

Positioning is crucial for accurate diagnosis of dislocation.

***Proper positioning, with no rotation, elbow bent at 90 degrees makes these landmarks reliable for diagnosis.**

FAT PADS AND JOINT EFFUSIONS:

There are times when there is no radiographically visible fracture. The radiologist will also look for joint effusions by looking at the anterior and posterior fat pads. If they are elevated, it will indicate a joint effusion. Joint effusions could mean occult fractures.

When there is no radiographically visible fracture:

- Skeletally Immature: 25% of those with joint effusions have an occult fracture
- Skeletally Mature: 75% of those with joint effusion have an occult fracture