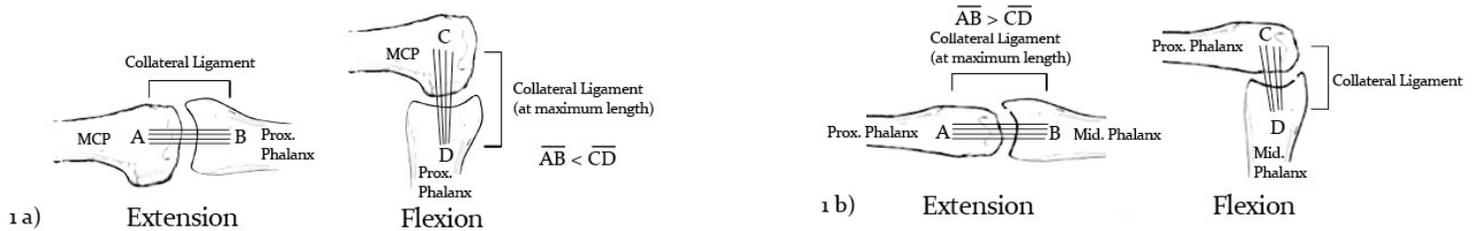
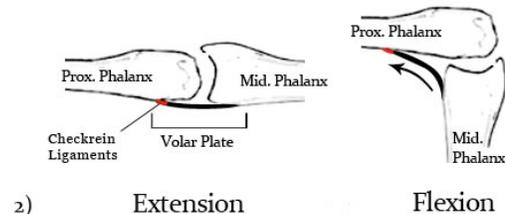


Splinting

- Importance of proper joint position:
 - Keep collateral ligaments at maximum length
 - Keep volar plate stretched (IP joints)
 - If this is not done properly, permanent joint contractures may result
- 1. Collateral ligaments:
 - a) MCP → due to shape of metacarpal head, collateral ligaments longest with flexion
 - b) IPs → due to shape of phalangeal heads, collateral ligaments longest with extension



- 2. Volar plate (IP joints):
 Want digits in extension at DIP and PIP to keep volar plate maximally stretched → if held in flexion: a) volar plate is not stretched → moves proximally; b) checkrein ligaments attached to the volar plate will also be shortened and tightened = resulting proximal pull to volar plate

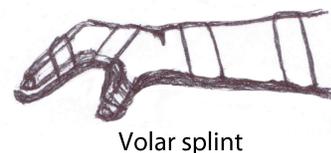


Types of splints	Indications for use (examples)
Volar (blocking) splint	Index, long and ring finger fracture; extensor tendon repair D1-5; post-dislocation reduction (index, long and ring finger joints), splinting hand infections (comfort + prevent contractures)
Dorsal (blocking) splint	Flexor tendon repairs D1-5
Thumb spica	Thumb fracture, post-carpometacarpal (CMC) arthroplasty, post-ulnar collateral ligament (UCL) injury, post-reduction thumb joint dislocation
Ulnar gutter	Little finger fractures
Volar splint + ulnar gutter combination	Multiple extensor tendon repairs, multiple metacarpal fractures

Volar splint:

Position of Safety:

- Wrist extended @ 30-40°
- MCP flexed @ 60-90° (if splinting repaired extensor tendon, use ~ 30°)
- IP joints extended @ 180°
- Tailor for thumb (MCP & IP extended)



Dorsal splint:

- Wrist flexed @ 30-40°
- MCPs flexed @ 90°
- IP joints extended @ 180°
- Tailor for thumb (MCP & IP flexed)



Dorsal splint

Thumb spica

- Thumb in natural position for CMC & MCP
- IP joint extended at 180°



Thumb spica

Ulnar gutter

- Position of safety with only ring & little finger



Ulnar gutter splint

Making the splint:

- 1) Wound dressing if needed
- 2) Wrap fingers and arms with cling or webroll (put gauze between fingers that will be in the splint to wick away moisture and prevent skin maceration in finger webs)
- 3) Measure length of plaster needed + trim as needed
- 4) Prepare sheets of webroll that will be used to sandwich plaster (so plaster can easily be removed to check wounds, do dressing changes, etc. and put back on)
- 5) Immerse plaster into **room-temperature** water (the hotter the water, the faster the plaster will set; plaster heats up after contact with water → can cause burns if water was too hot to begin with which means +++ heat once plaster contacts)
- 6) Put plaster between webroll sandwich = splint
- 7) Place splint along area of finger/hand/arm to be splinted (make sure plaster goes to tip of fingertips)
- 8) Ask patient to support proximal end of cast while you wrap the splint on with tensor bandage + apply metal clips (put tape on top since these tend to fall off)
- 9) Mold splint
- 10) Make sure you can see all fingertips at the end (to make sure no fingers were flexed within the cast)
- 11) Prepare sling (hand on affected side should be as high as contralateral shoulder) – instruct patient to remove sling a few times a day and range shoulder (prevent shoulder stiffness)
- 12) Instruct patient on cast care (keep dry, put bag over it with tape seal when for showers)

