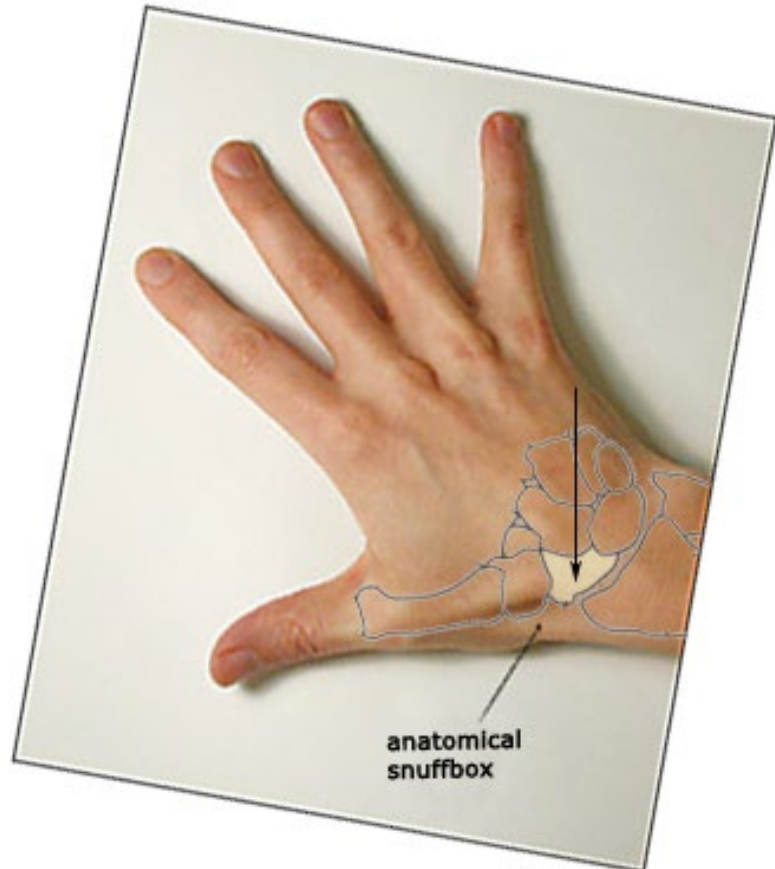


# Rehab of Scaphoid Fractures

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## Overview:

- ▶ Most frequently fractured carpal bone- 60-90% of carpal fx
- ▶ High risk of AVN/nonunion
- ▶ 25% not seen on initial xray- may come to therapy misdiagnosed as a wrist sprain
- ▶ pain in snuffbox and with wrist range of motion out of proportion to dx
- ▶ Proximal pole- poor blood supply- nonunion/AVN
- ▶ >12 weeks nonunion- surgical intervention: ORIF, bone grafting
- ▶ conservative management: thumb spica splint/cast up to 12 weeks- important to improve/maintain finger ROM
- ▶ Some may never be initially diagnosed or treated- longstanding arthritis (SNAC wrist)
- ▶ Salvage procedures: Partial fusion, PRC, full fusion, 4 corner fusion, total wrist arthroplasty

# Things to consider....

- ▶ A wrist salvage procedure will result in restricted wrist ROM, but these restrictions are not necessarily detrimental to adl.
- ▶ Functional range of wrist motion:
- ▶ 5 degrees of flexion
- ▶ 30 degrees of extension
- ▶ 10 degrees of radial deviation
- ▶ 15 degrees of ulnar deviation (Palmar- Rehab of the Hand)

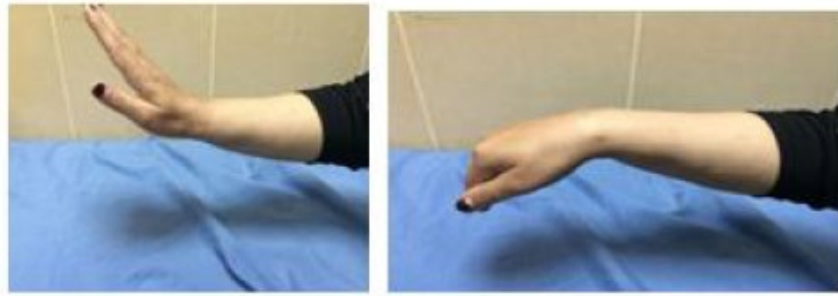


# Rehab Protocol-

- ▶ Not much different for ORIF, conservative or s/p salvage procedure
- ▶ **Range of motion-** may start with only finger and elbow/shoulder A/PROM in cast/splint (thumb spica splint)- important due to prolonged immobilization
- ▶ Important to address soft tissue mobility/scar massage to limit adhesions especially with dorsal incisions
- ▶ Progress to **AROM** of wrist and FA first!
- ▶ **Strengthening-** xrays need to confirm bony healing of fracture/fusion before starting **PRES** and **PROM** (per MD)
- ▶ **Isometrics-** promote strong, stable wrist
- ▶ **Sport/work conditioning**  
Lift/carry, push/pull, grip
- ▶ **PROGRESS CONSERVATIVELY!!!!**
- ▶ **No heavy lifting for 3-6 months!**



# Exercises



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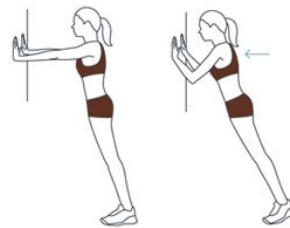
Figure 3: Clinical outcome at final follow up.



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ense



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## Case study #1- ORIF



- ▶ 27 y/o male sustained R distal radius fx, R scaphoid fx, R hamate fx's in bicycle accident
- ▶ 10/27/2020- ORIF R distal radius fx, ORIF R scaphoid fx, closed tx of hamate fx
- ▶ Started OT 12/28/2020 (8 weeks post op)
- ▶ Finger/thumb Range of motion ONLY:  
Thumb mp 0/55  
Thumb IP 0/0  
palm abd/add 40/-5  
opposition to 3  
end range digit stiffness
- ▶ 1/11/2021- (10 weeks post op)- ok to start wrist ROM
- ▶ Pain, 2/10, digit/thumb ROM WFL

	1/11/21	2/17/21	4/6/21
Wrist ext/flex	0/10	30/20	35/35
Ud/rd	5/0	15/10	15/10
Pro/sup	Wfl/65	Wfl/75	wfl

# Case study #2

	8/2020	9/2020	10/2020
Wrist ext/flex	8/15	20/30	25/30
Rd/ud	0/10	5/15	10/15
Pro/sup	75/50	Wnl/75	Wnl/75
Grip		15#	15#

- ▶ 40y/o athletic male- history of multiple previous wrist injuries
- ▶ s/p scaphoid excision, mid carpal fusion 6/12/2020
- ▶ Initial tx: Custom forearm based thumb spica splint, digit/thumb ROM
- ▶ \*no wrist ROM
- ▶ 8 weeks post op- ok to start wrist ROM



## Continued.... Case study #2

- ▶ Referred back to therapy 5/2021 (7 months later)
- ▶ Ulnar sided wrist pain, limited grip, limited PIP ext-dorsal plate
- ▶ Tx did not improve/resolve sx- dorsal wrist hardware prominence
- ▶ 7/21/21- Hardware removal
- ▶ Dorsal wrist incisions have a tendency to develop adhesions- initiate scar massage, soft tissue mobility, edema control early to limit complications
- ▶ - Tx: **AROM**- digits, thumb, forearm , wrist- progress to PROM, strengthening when range improved and is nearly painfree \*isometrics
- ▶ Wrist ext/flex: 25/10 (limited but functional)
- ▶ \*Pain 1/10
- ▶ Goal is not normal range of motion



# Case study #3

- ▶ 65 year old male referred for therapy s/p left Proximal Row Carpectomy 11/8/2019
- ▶ Longstanding arthritis from “old injury” now limiting ability to work in factory and perform adl without pain
- ▶ Tx: arom- digits, thumb, wrist, forearm, edema control, scar massage- progress to prom, strengthening
- ▶ Goals after surgery: functional ROM, functional grip strength
- ▶ Still doing well!!



	11/25/19	3/2020
Wrist ext/flex	14/10	45/35
Ud/rd	8/5	15/10
Pro/sup	Wnl/65	Wnl/80
Grip		38# vs 58#
Palmar pinch		12# vs 18#



# Conclusion

- ▶ **EDUCATE** the patient on the expected outcomes and slow progression, need for compliance due to risk of nonunion and complications after procedures
- ▶ Do not be in the fast lane to start wrist ROM or strengthening early- once the painful arc starts, it is difficult or impossible to go back
- ▶ start with digit and thumb A/PROM, scar management, edema control
- ▶ progress to wrist a/aarom, then PROM- once fusion/healing is confirmed
- ▶ strengthening once wrist/fa active range of motion is not painful or the fused wrist can tolerate activity without pain
- ▶ Partial fusions may have to go to hardware removal or full fusions if pain continues
- ▶ Wrist arthroplasty is not perfected or commonly used especially in this population
- ▶ High demand workers may prefer full fusion for strength/stability

**A strong, stable, painfree wrist with a limited arc of is more functional than a painful, mobile wrist**

**(Rehab of the Hand)**

Thank You for your referral  
to OT!!

Your hand therapy  
specialists at  
AHN!!



