



University of California  
San Francisco



# Isolated & Associated Radial Head Fractures: Tips for Successful Management

*SF Trauma Course 2023*

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# Tips for Successful Management

- Choose the right indications
- Choose the right procedure
- Beware the PIN

# Indications

## Isolated Radial Head Fractures

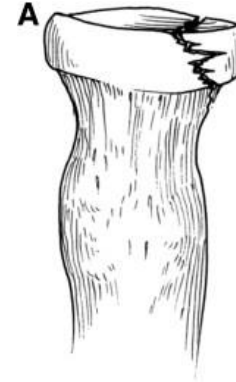
- No history or findings of instability



# Indications

## Isolated Radial Head Fractures

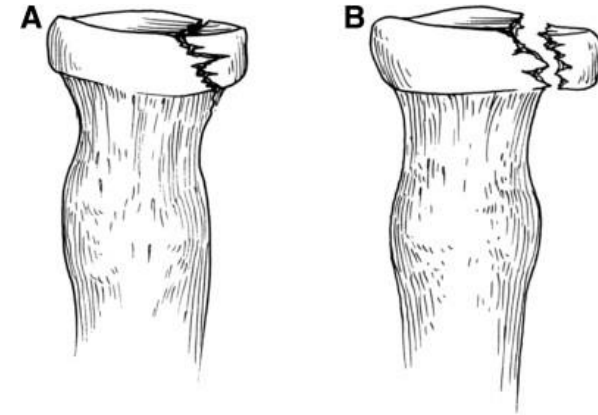
- No history or findings of instability
- Mason I (nondisplaced) → nonoperative



# Indications

## Isolated Radial Head Fractures

- No history or findings of instability
- Mason I (nondisplaced) → nonoperative
- Mason II (displaced > 2mm)



# Indications

## The treatment of isolated Mason type II radial head fractures: a systematic review

Fabian Lanzerath\*, Michael Hackl, MD, Kilian Wegmann, MD, PhD, Lars P. Müller, MD, PhD, Tim Leschinger, MD

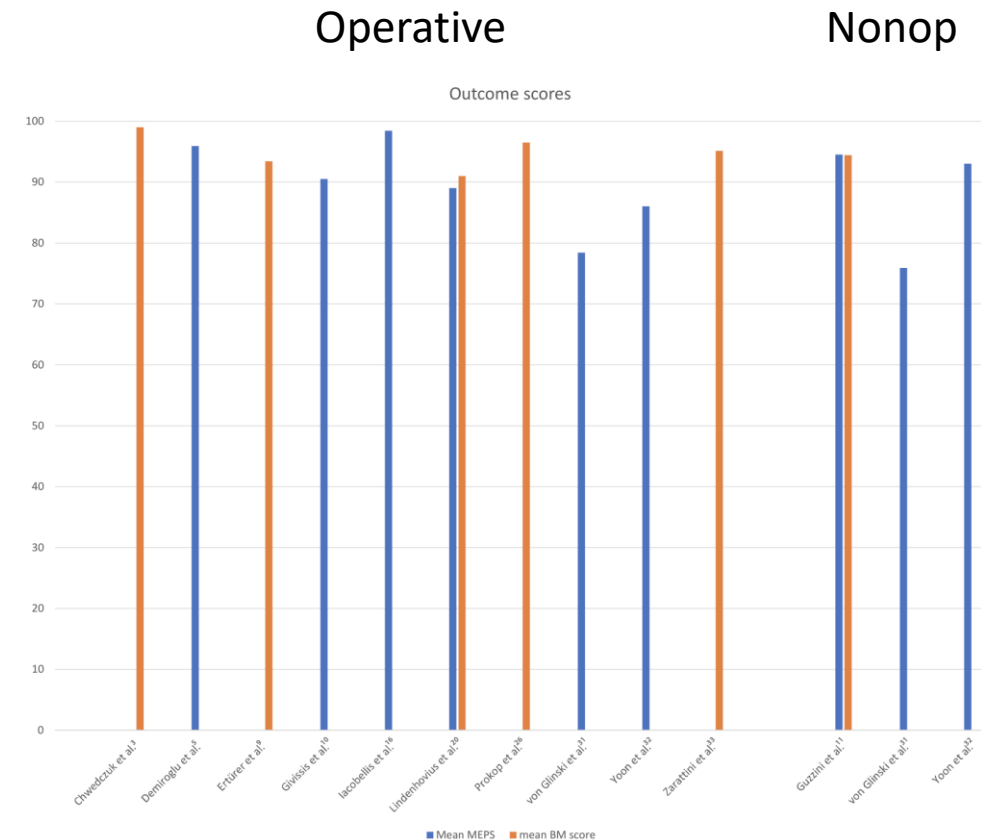
*Department of Orthopedic and Trauma Surgery, University Hospital Cologne, Cologne, Germany*

### Systematic Review

### Nonoperative vs operative treatment Type II RH

#### Key Findings:

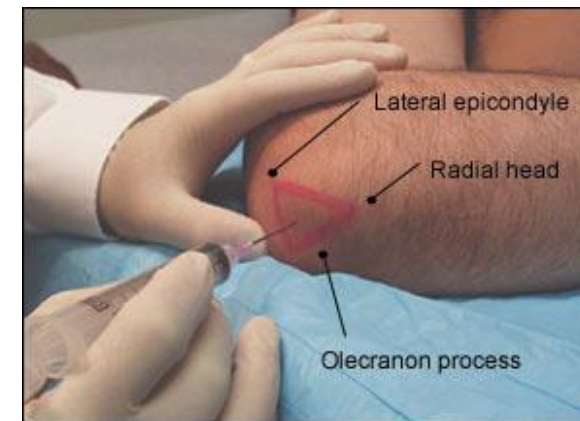
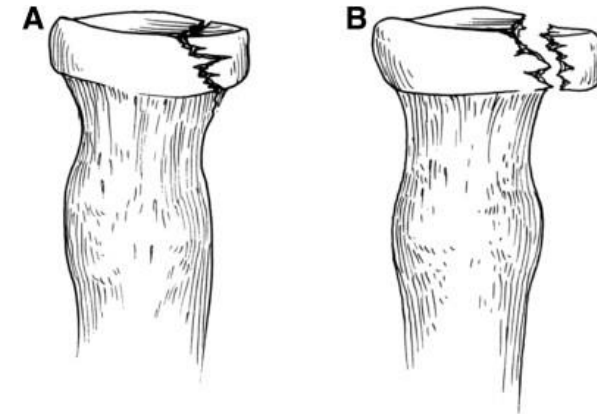
- Comparable functional outcome scores
- Higher rates of OA with nonop Rx (11.9% vs. 5.2%)



# Indications

## Isolated Radial Head Fractures

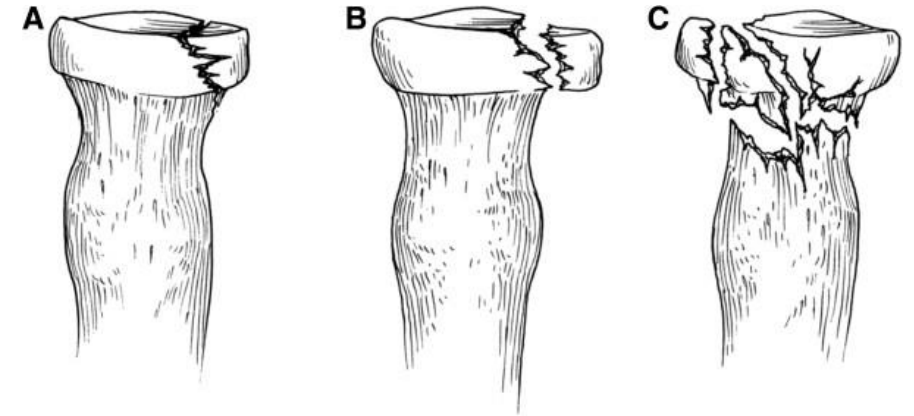
- No history or findings of instability
- Mason I (nondisplaced) → nonoperative
- Mason II (displaced > 2mm)
  - Mechanical rotation block → operative



# Indications

## Isolated Radial Head Fractures

- No history or findings of instability
- Mason I (nondisplaced) → nonoperative
- Mason II (displaced > 2mm)
  - Mechanical rotation block → operative
- Mason III (comminuted) → operative

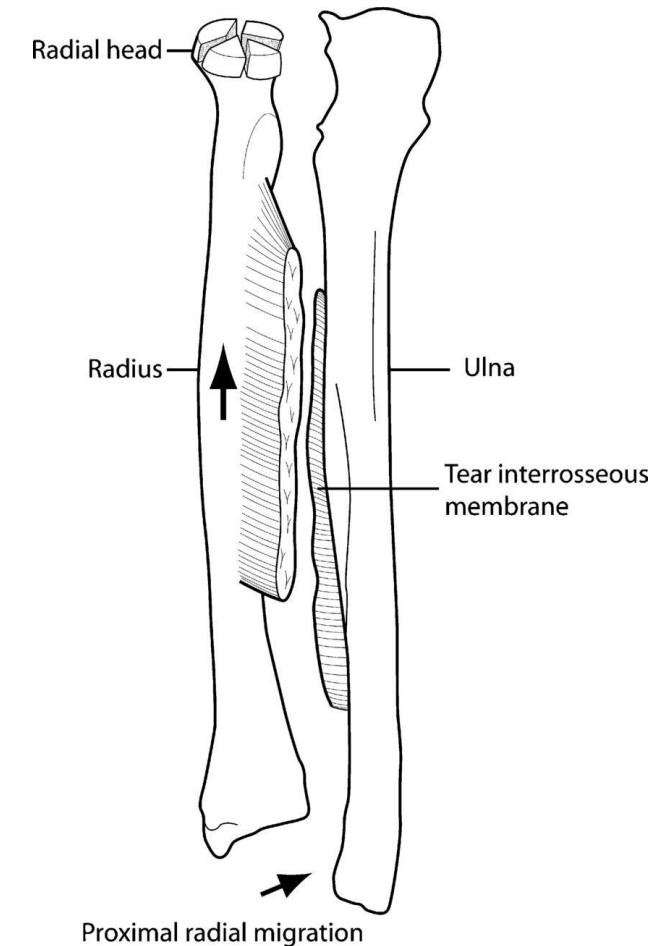
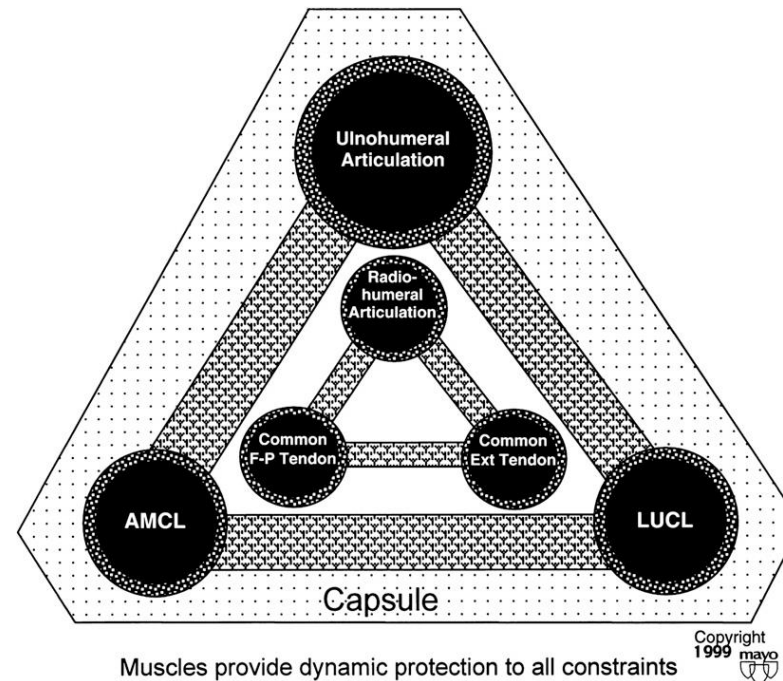


# Indications

## Associated Instability

### RH contribution to elbow stability:

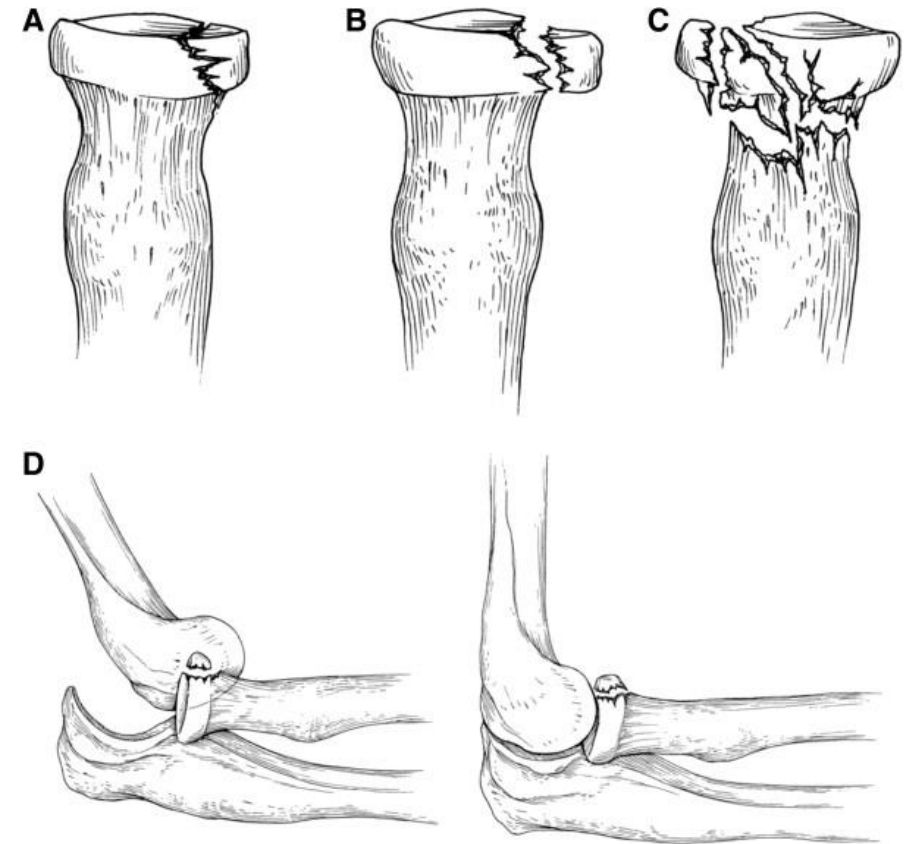
- 2° Valgus Stability
- Longitudinal Stability (Essex Lopresti)



# Indications

Associated Instability

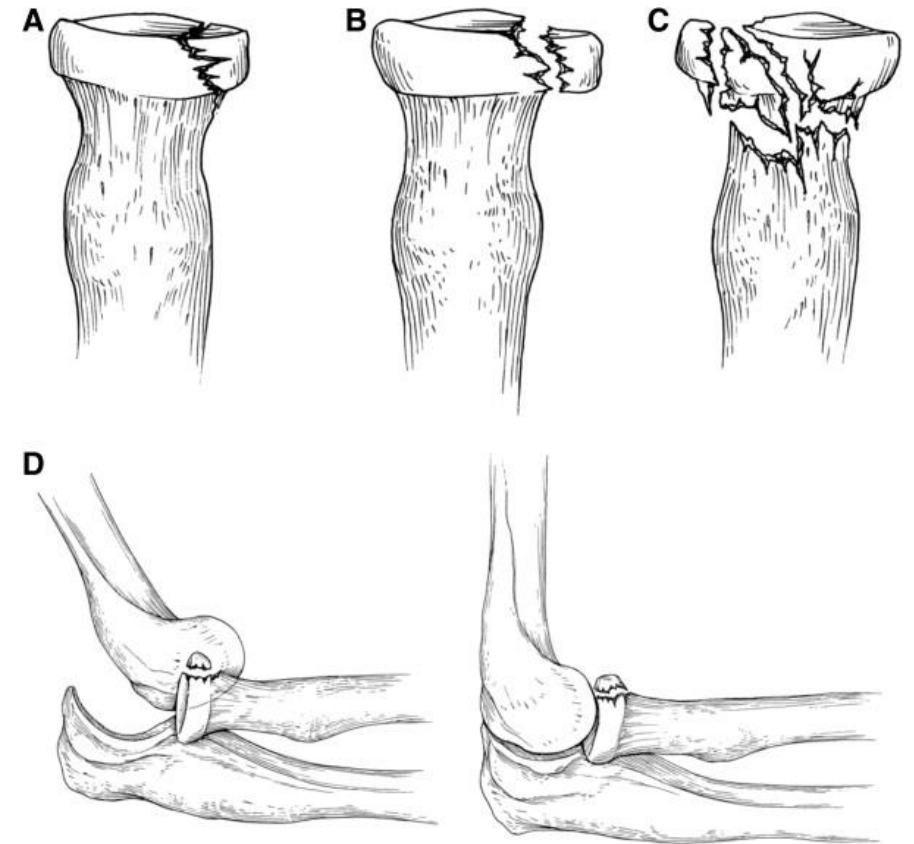
→ **OPERATIVE**



# Indications

Associated Instability

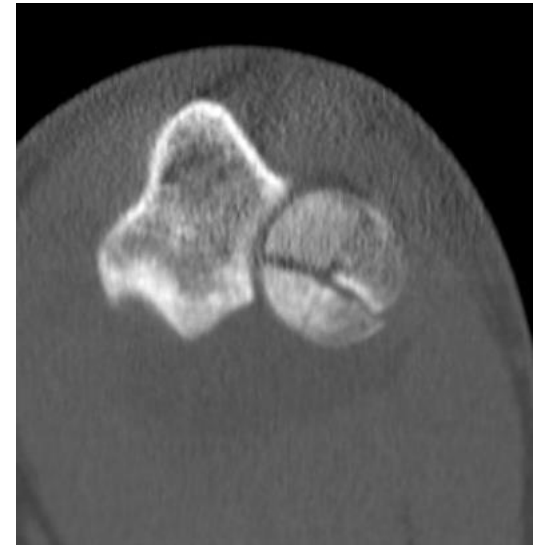
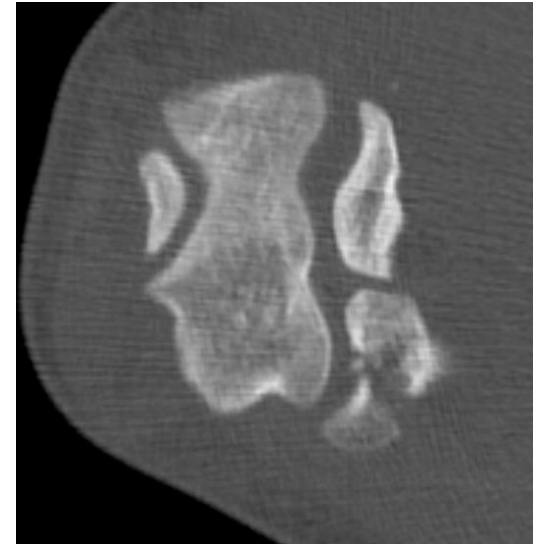
➔ **OPERATIVE**



# ORIF

## Screw Fixation

- Isolated or associated displaced radial head
- Lateral approach to elbow



# ORIF

## Screw Fixation

- Isolated or associated displaced radial head
- Lateral approach to elbow



# ORIF

## Screw Fixation

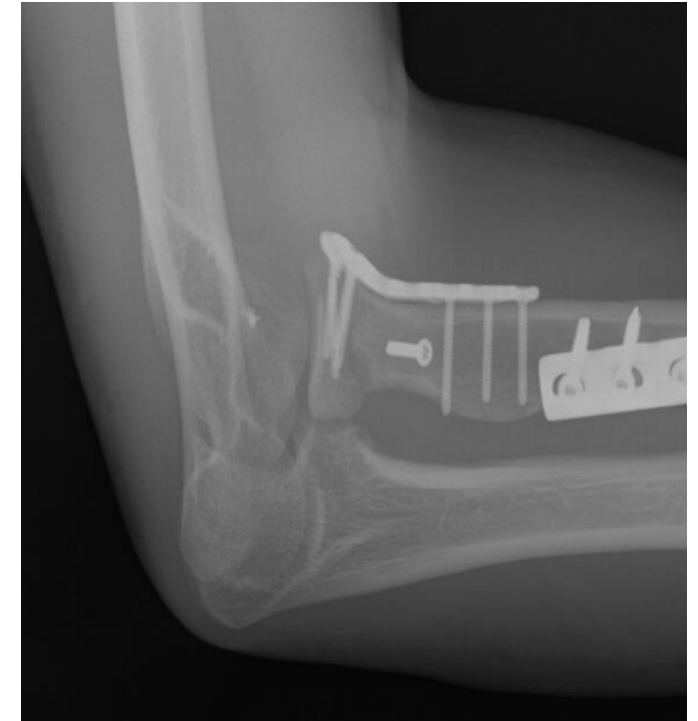
- Isolated or associated displaced radial head
- Lateral approach to elbow



# ORIF

## Plate Fixation

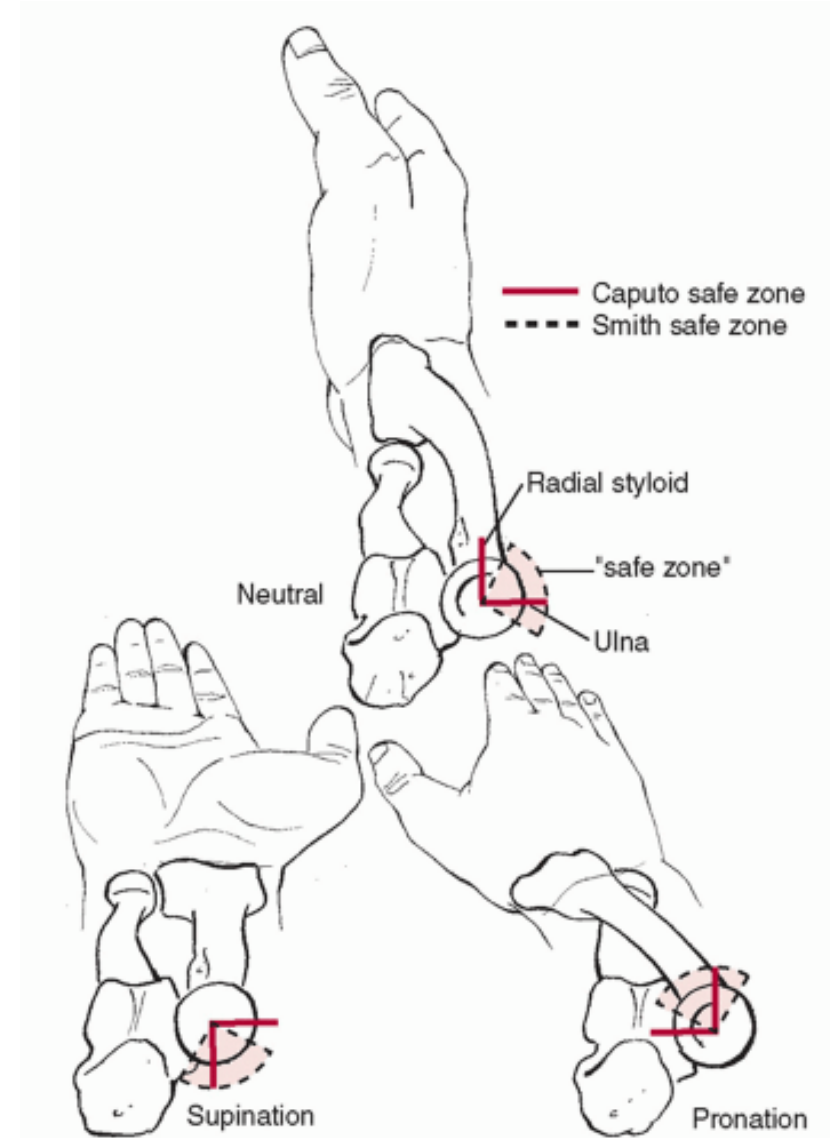
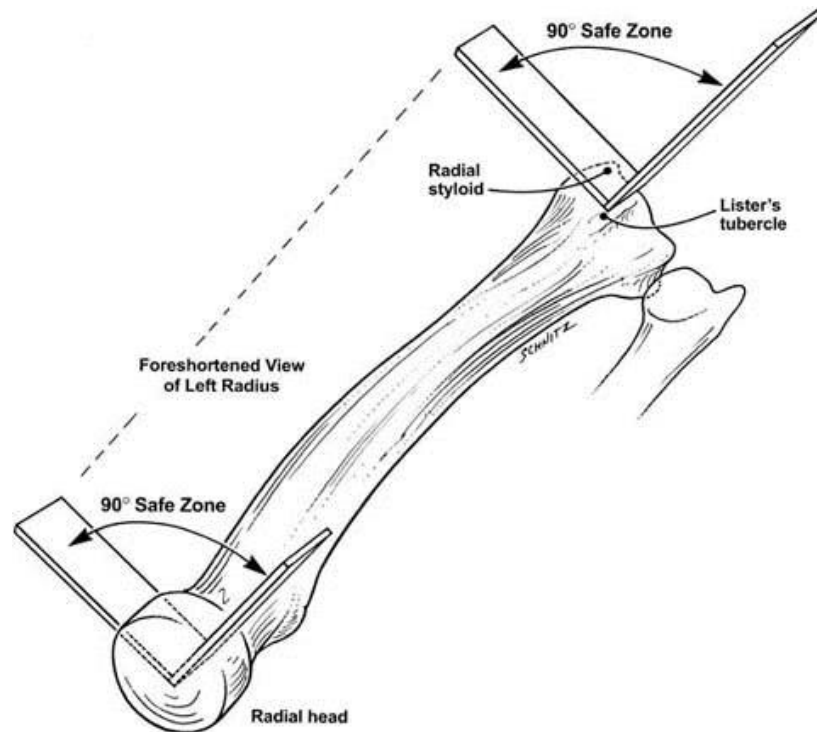
- Displaced radial head and neck fracture



# ORIF

## Plate Fixation

- Beware PRUJ impingement
- Safe zone between Lister's and styloid



# Arthroplasty

## Indications

- Comminuted radial head (Mason III)
- Comminuted radial neck



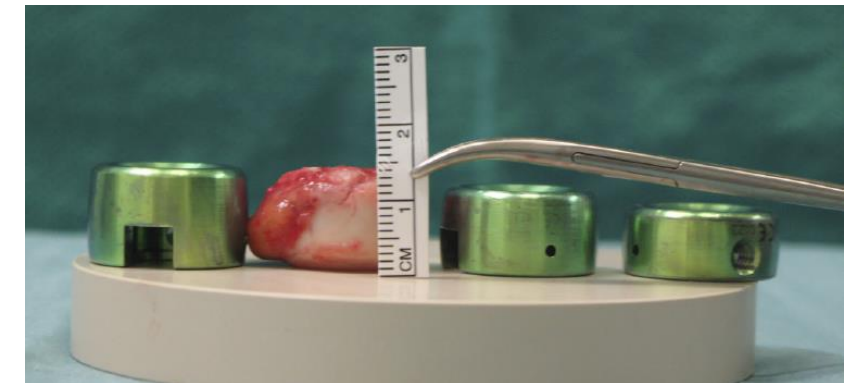
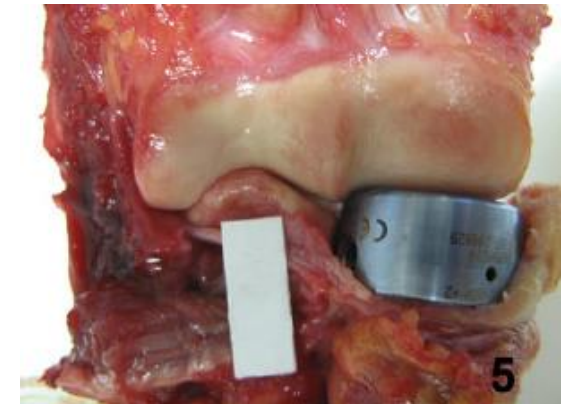
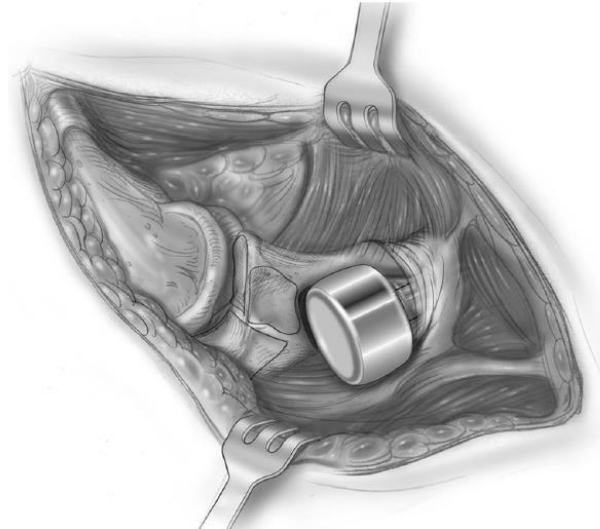
# Arthroplasty

Do NOT overstuff – better to undersize

Finding the correct implant size:

- Length – PRUJ notch, native RH
- Diameter

Which implant??



# Surgical Outcomes in Isolated vs Associated

## Open Reduction and Internal Fixation of Radial Head Fractures

Do Outcomes Differ Between Simple and Complex Injuries?

Jeffrey M. Pike MD, MPH, Ruby Grewal MD, MSc,  
George S. Athwal MD, Kenneth J. Faber MD, MHPE,  
Graham J. W. King MD, MSc

### Indications for Surgery:

- Isolated:
  - >2mm displacement
  - >30% articular surface
  - Mechanical block
- Associated fracture or ligament injury
- ORIF or arthroplasty

### Outcomes:

Comparable PREE functional outcomes between isolated and associated RH fractures

# ORIF vs Arthroplasty

## Indications

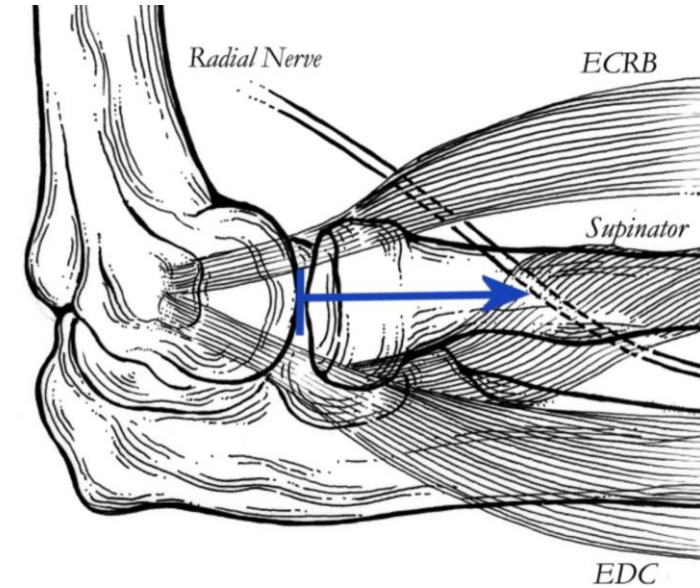
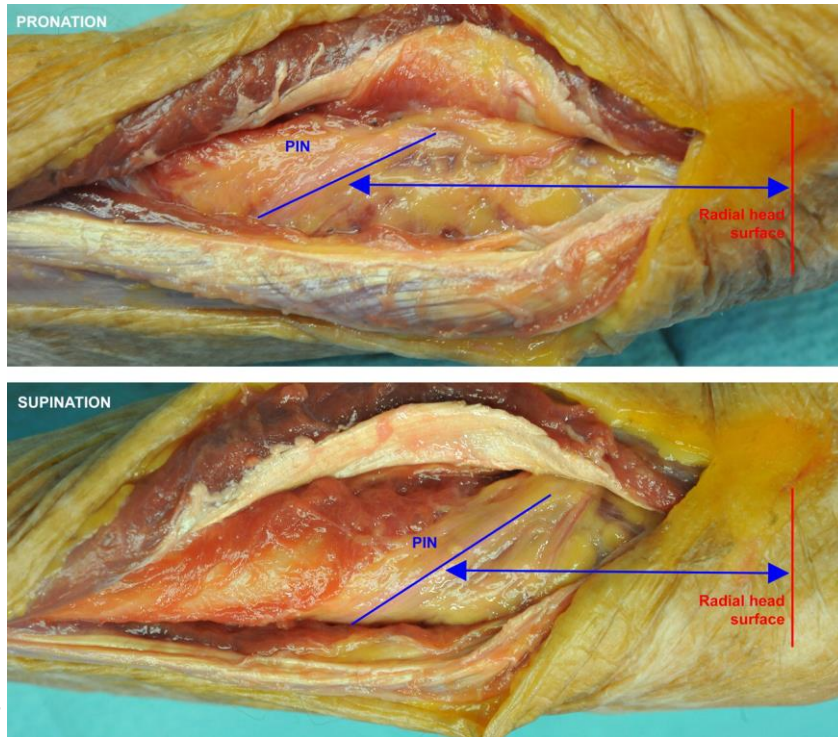
- Comminuted radial head (Mason III)
- Comminuted radial neck



# Beware the PIN

PIN courses along radial neck as it courses to dorsal compartment

- Supination – crosses 4 cm distal to RH
- Pronation – crosses 6 cm distal to RH



# Tips for Successful Management

- Choose the right indications
  - Nonop for Mason I-II
  - Operative for Mason II+, associated instability
- Choose the right procedure
  - ORIF vs Arthroplasty
- Beware the PIN

# Thank You

