

# Skier's Thumb

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Dr. Aleix Vidal i col·laboradors

***2.471 Skier's Thumb Injuries seen in  
Baqueira Beret Medical Center since 1993***

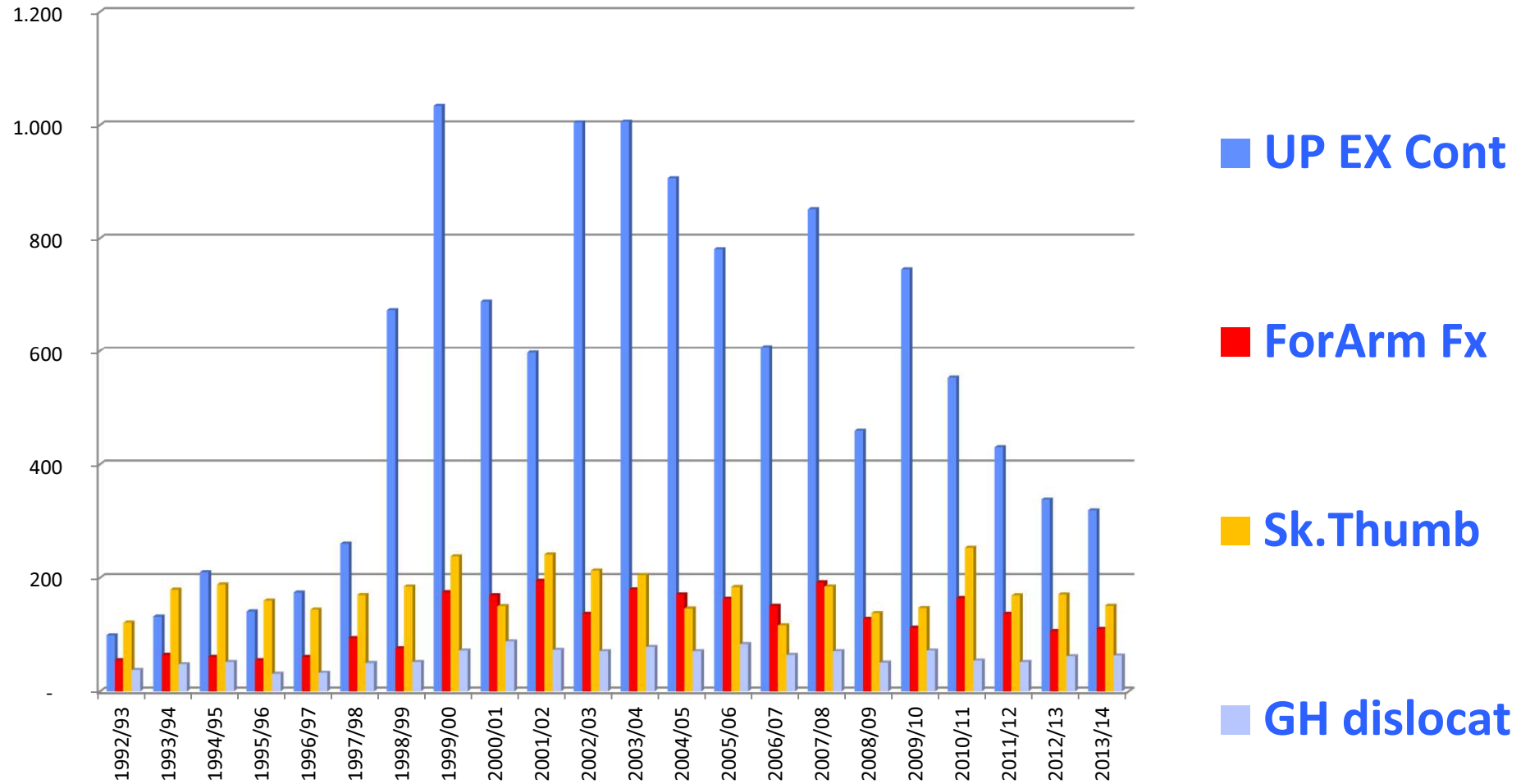
***55.628 Snow Sport Injuries (seasons 1993 - 2014)***



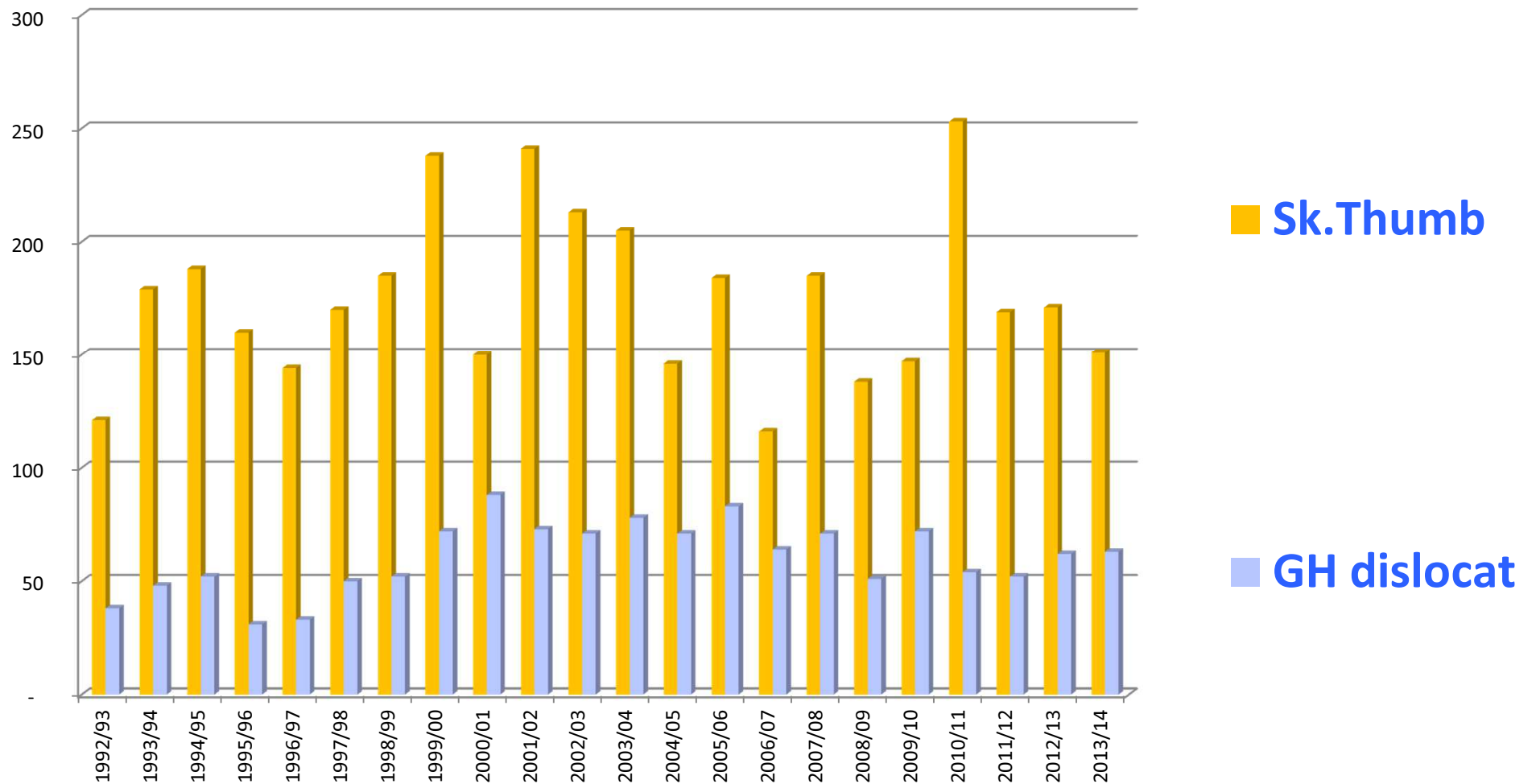
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# Upper Extremities Injuries Evolution



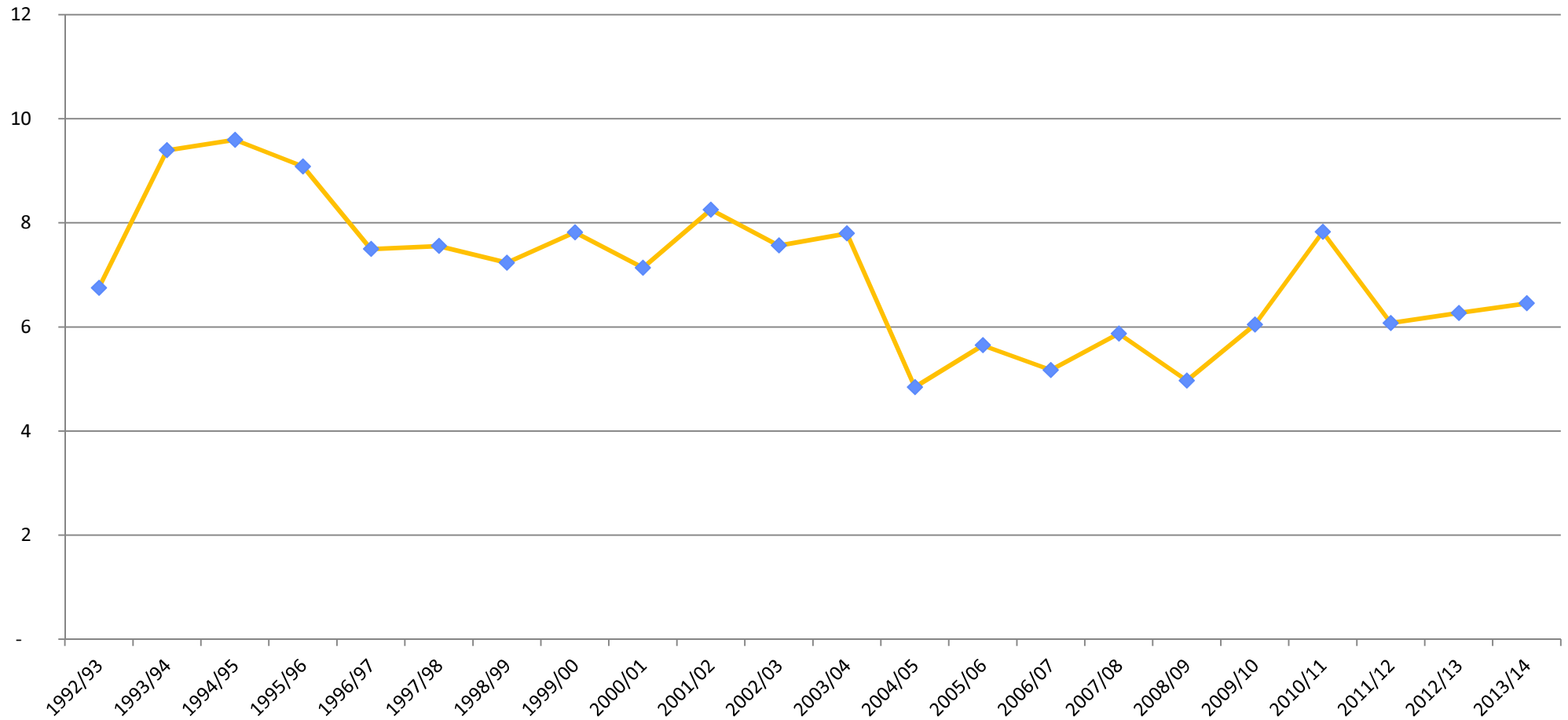
# Skier's Thumb / GH Dislocation Evolution



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# Skier's Thumb diagnosis in relative numbers at our M C

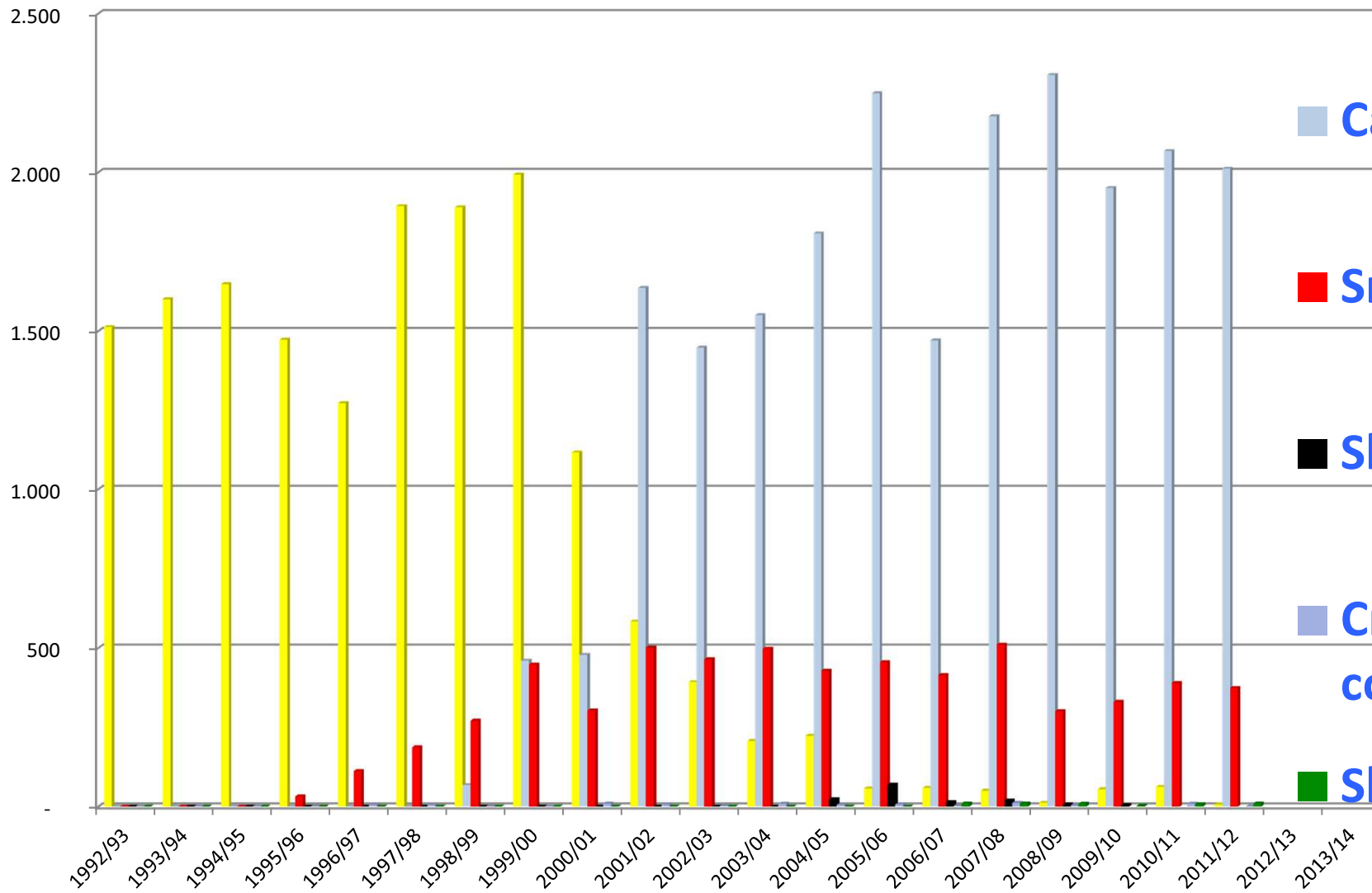
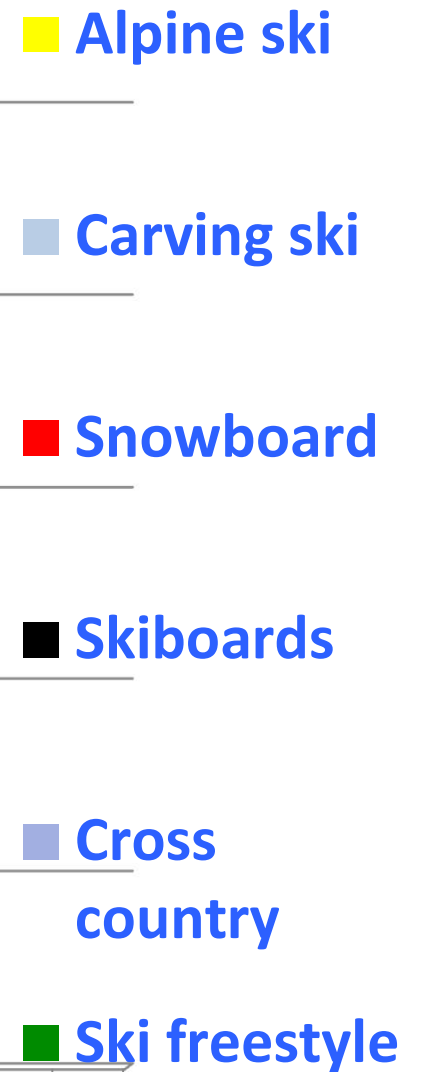


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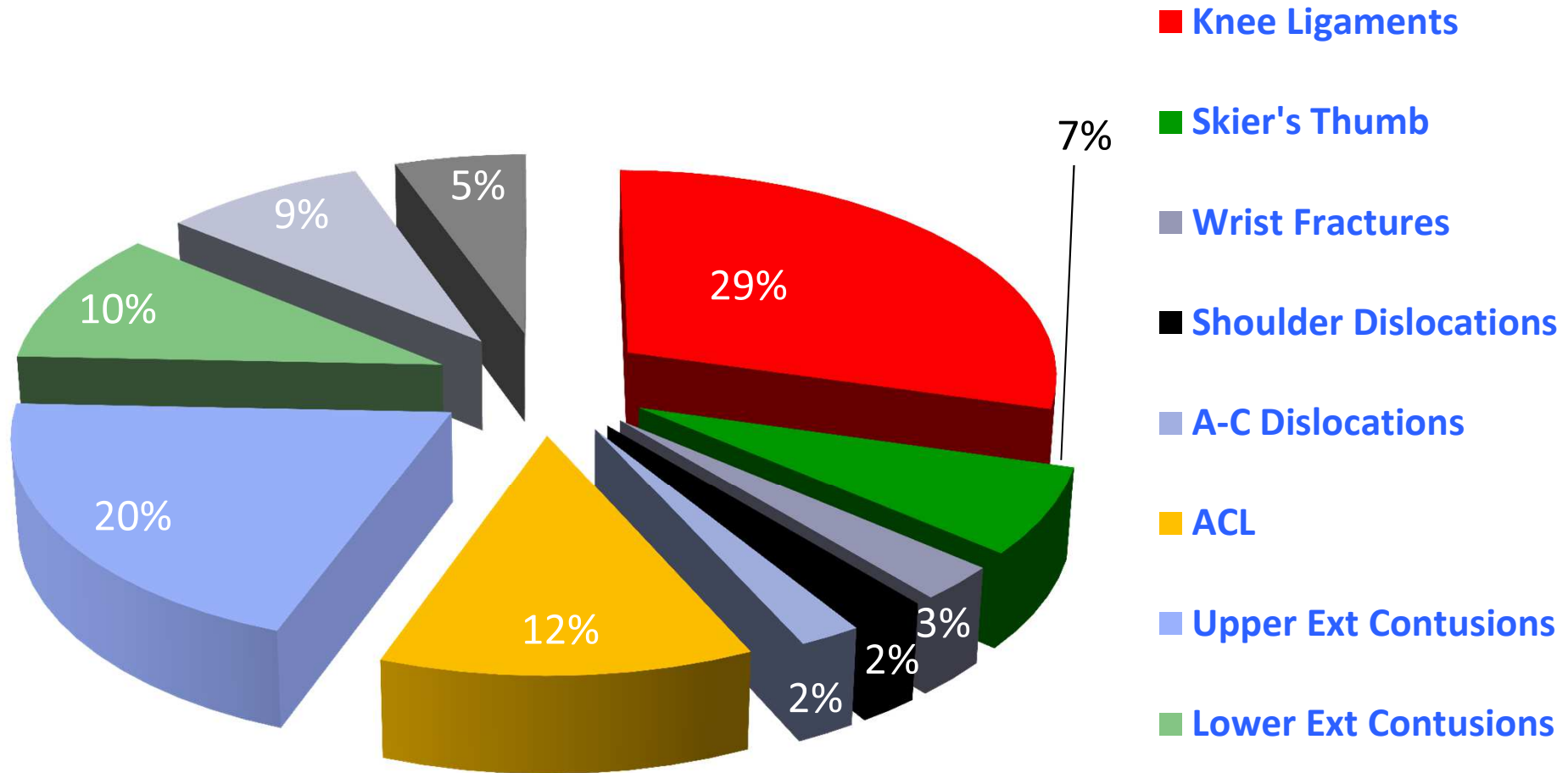
# **CONTROVERSIES IN SKIER'S THUMB MANGEMENT**

- **HOW IT DOES OCCUR ?**
- **HOW SHOULD BE DIAGNOSED ?**
- **WHEN SURGERY IS ADVISED ?**

# Speciality Related Injuries



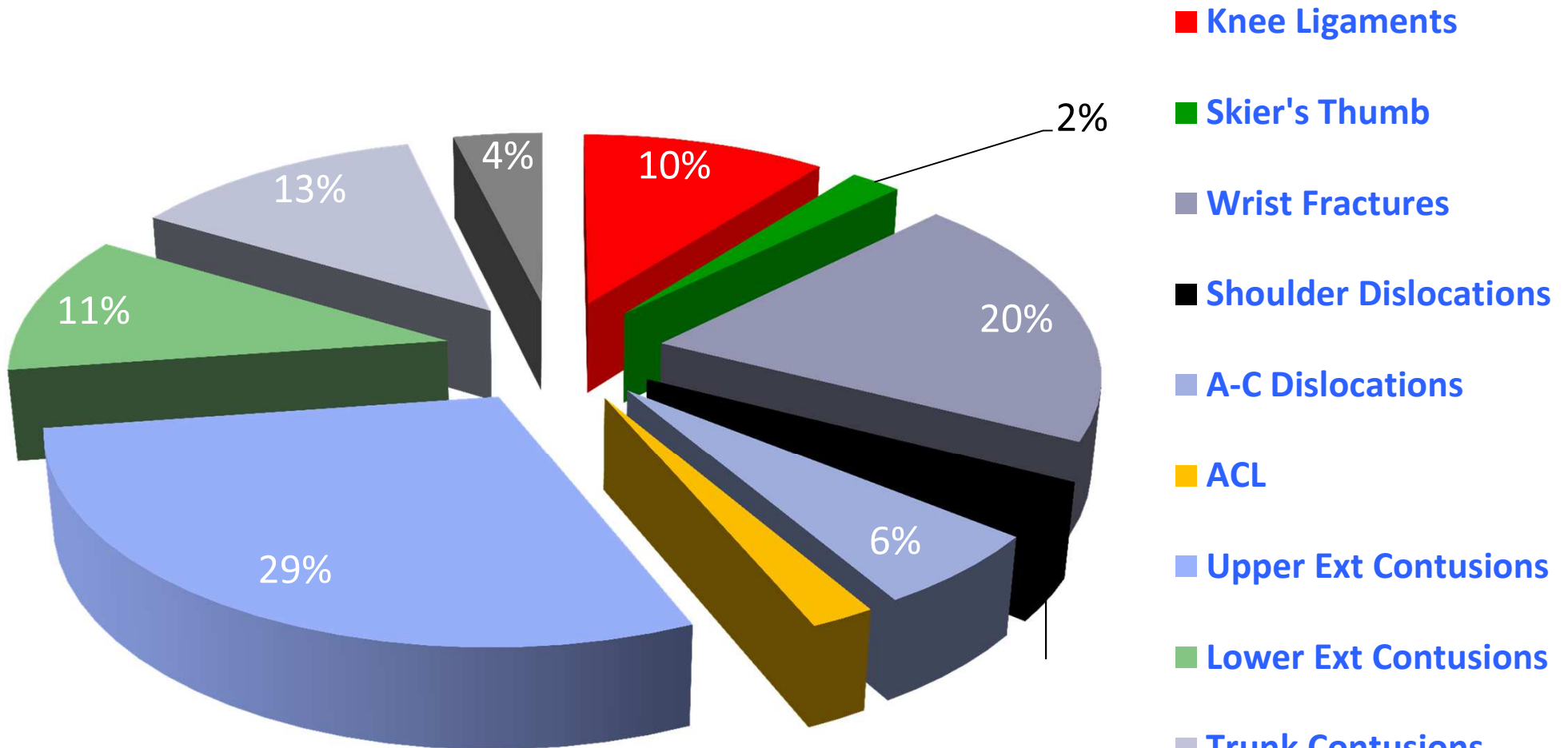
# SKI Most Common Injuries



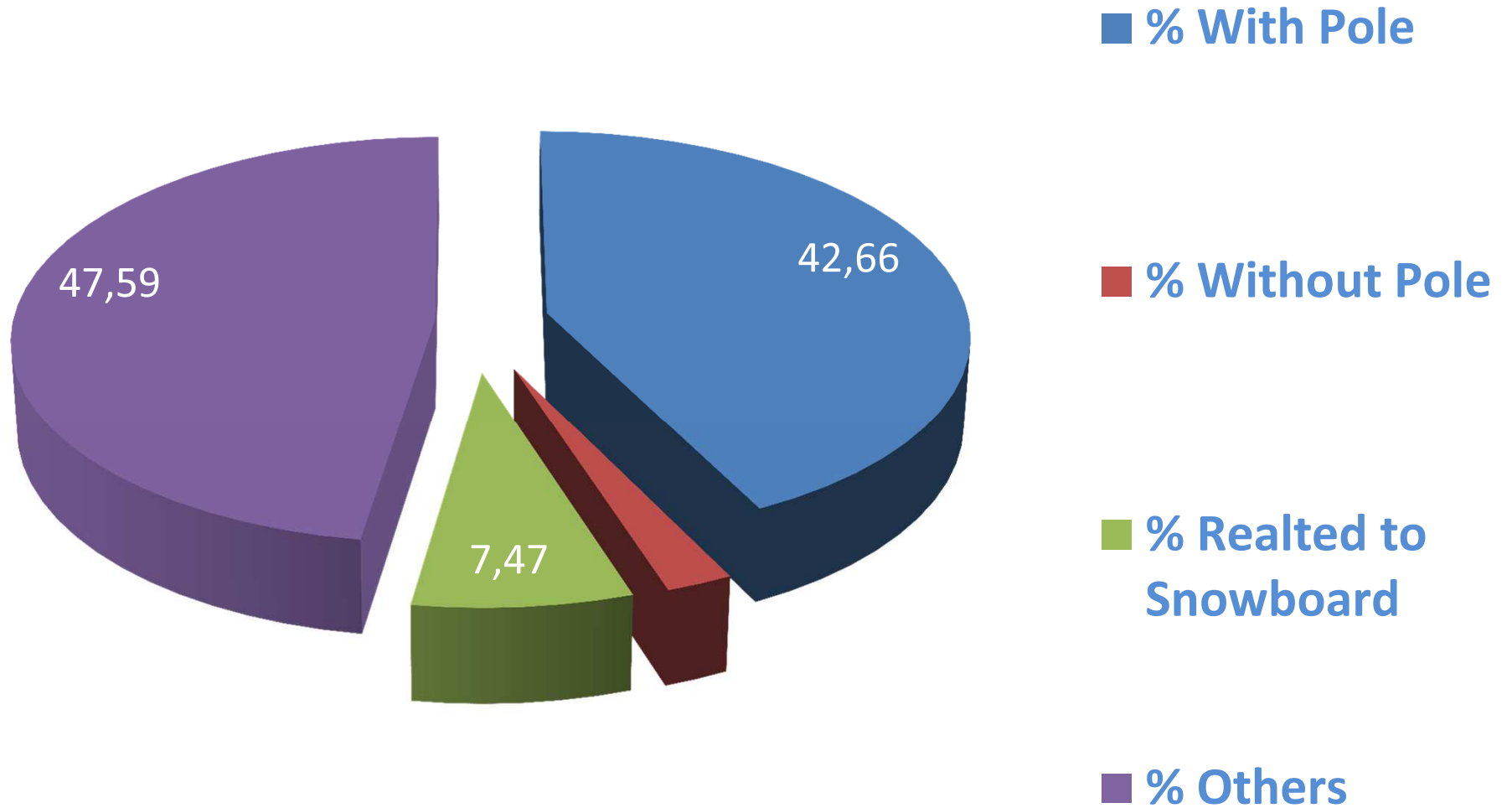
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# SNOWBOARD Most Common Injuries



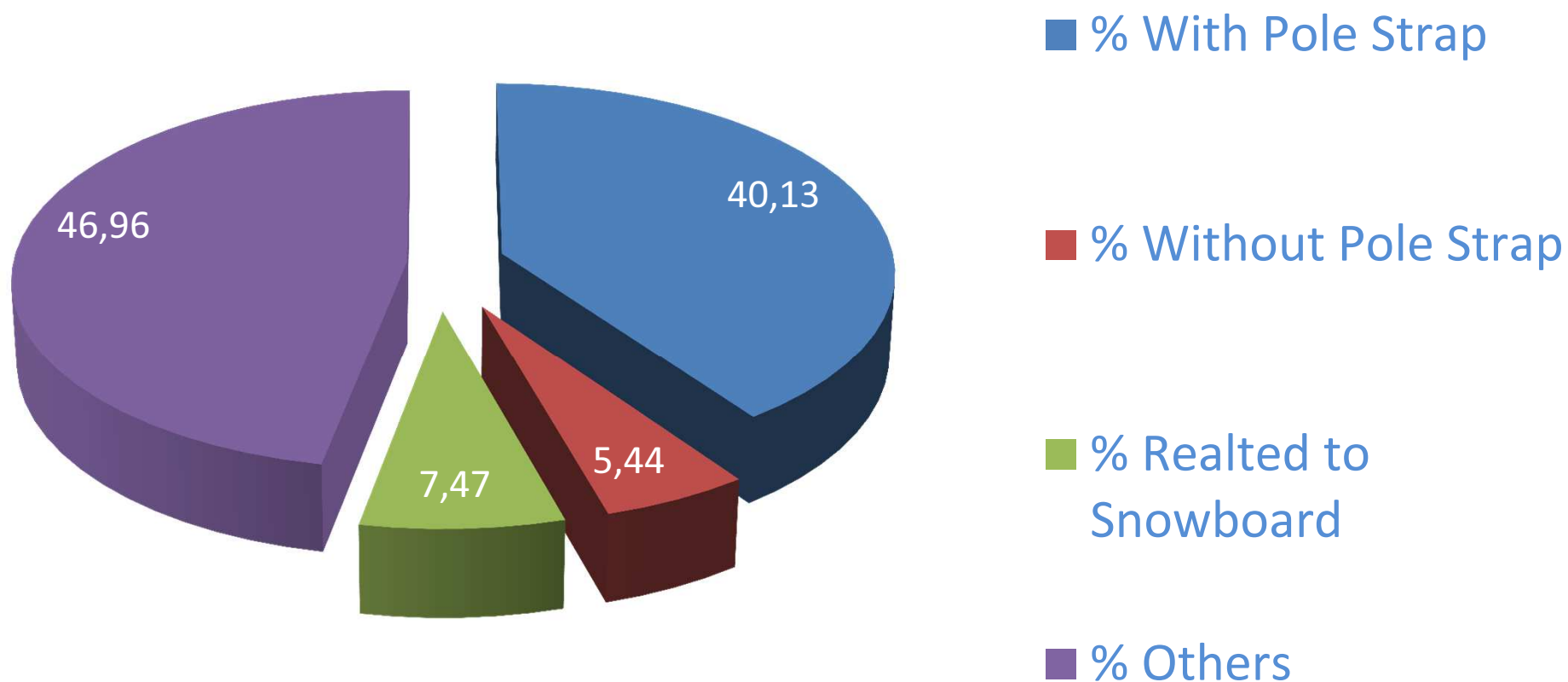
# Falls With the Pole in the Hand



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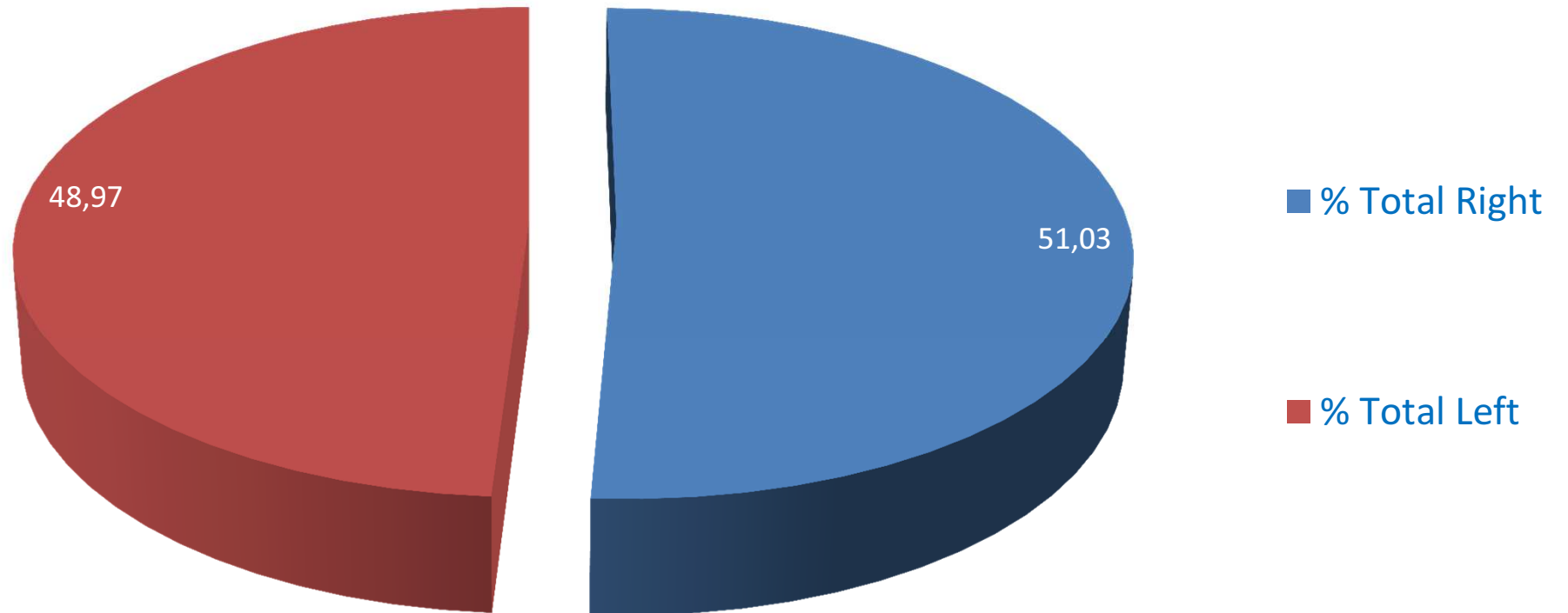
# Falls With the Pole Strap in the Hand



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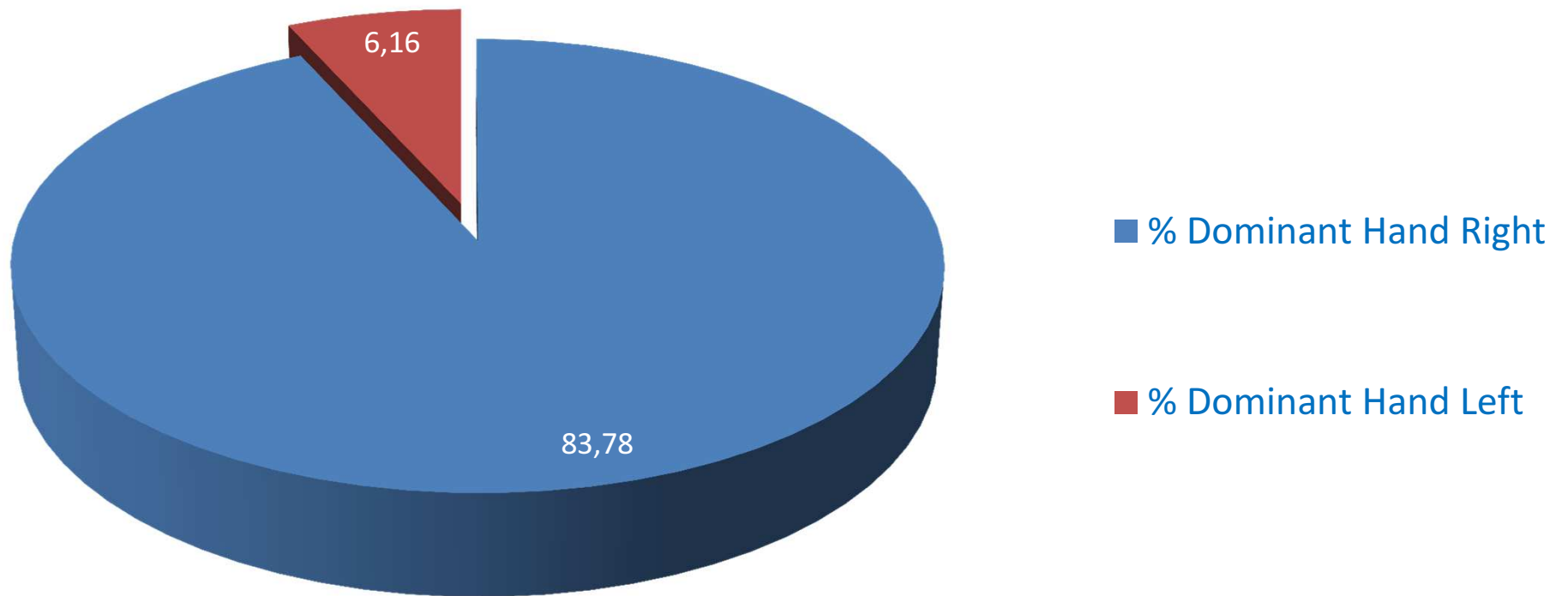
# % Of the Injured Thumb



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# % Of the Injured Thumb

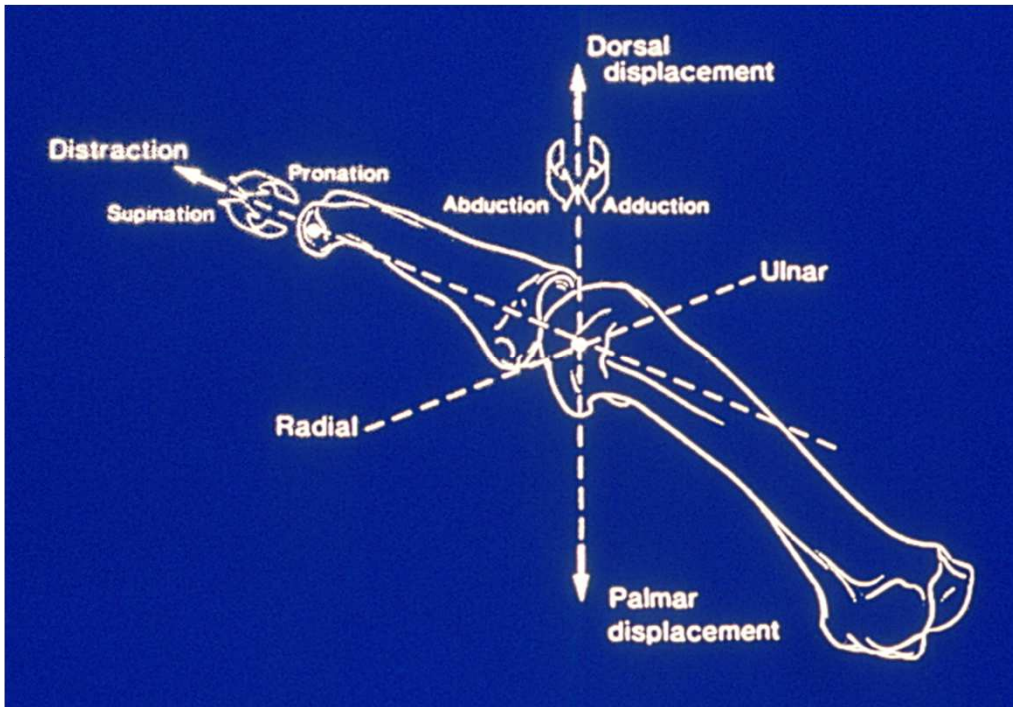


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# **CONTROVERSIES IN SKIER'S THUMB MANGEMENT**

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There is a big variability in Thumb MCP biomechanics

# RANGE OF MOTION AT THE M-P JOINT OF THE THUMB (1000 normal thumbs)

Flexion.....	75°	.....	(10-100)
Extension.....	20°	.....	(0-90)
Abduction-adduction.....	10°	.....	(0-20)
Pronation-supination.....	0°		

Ref: (Coonrad & Goldner. JBJS, 50-A(3): 439-451, 1968.)

## INESTABILITY AT THE M-P- JOINT OF THE THUMB

>10° op. thumb

Bowers & Hurst .....JBJS,59-A(4):519-524,1977

Van Wetter .....Ann Chir Main,5(2): 135-138,1986

>15° op. thumb

Miller et al ..... Hand Clinics,4(1):45-65,1988

## INESTABILITY AT THE M-P JOINT OF THE THUMB

>30°

Posner & Retailaud ..... Hand Clinics,8(4):713-732,1992

>35°

Palmer & Louis .....JBJS,3(6):542-546,1978

Louis et al .....JBJS,68(9):1320-1325,1986

Miller et al .....Hand Clinics,4(1):45-65,1988

>45°

Smith .....JBJS,59(1):14-21,1977

Derkash et al .....Clic Orth Rel Res,216:29-33,1987

# STRESS X-RAY

Bowers et al .....JBJS,59-A(4):519-524,1977

Curtis & Downey ..... Radiology,148(3):855-856,1983

Curtis & Downey ..... Radiology,158(3):679-683,1986

Van Wetter ..... Ann Chir Main,5(2):135-138,1986

## **STRESS X-RAYS WITH THE M-P IN EXTENSION**

- Neviaser et al .....JBJS,53-A:1357,1971  
Smith .....JBJS,59-A:14,1977  
Eaton & Dray .....In Green: Operative  
Hand Surgery:p657,1982  
Buck & Cols ..... Orthopaedics,5:444,1982  
Miller ..... Hans Clinics,4(1):53,1988  
Posner & Retillaud ..... Hand Cl.,8(4):720,1992

## **STRESS X-RAYS WITH THE M-P IN FLEXION**

- Palmer & Louis .....JOHS, 3:542, 1978  
Louis & Huebner .....JBJS, 68-A(9):1320-1325, 1986

## **STRESS X-RAYS WITH THE M-P IN FLEXION AND EXTENSION**

- Stener ..... JBJS, 44-B:869, 1962  
Eaton ..... In Tubiana (ed), p.877, 1985  
Dray & Eaton ..... In Green (ed), p.777, 1988  
Maulet & Cols ..... Ann Chir Main, 8:99, 1989

## **STRESS X-RAYS WITH THE M-P IN SEMIFLEXION**

- Curtis & Downey ..... Radiology, 148(3)(55-856),1983  
Melone ..... Em Med Clin N Am, 3:319,1985  
Merle ..... Ann Chir Main, 6(2):170,1987

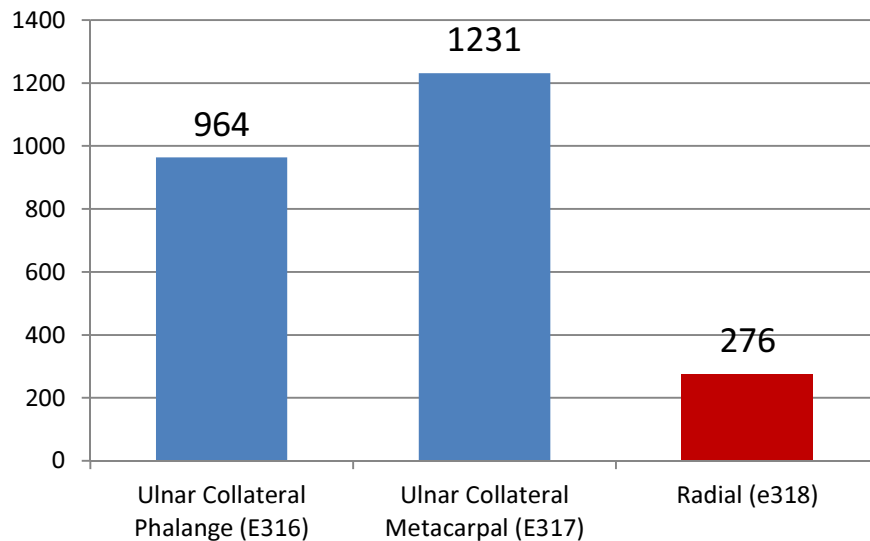
# INCIDENCE OF THE RADIAL COLATERAL LIGAMENT VERSUS ULNAR COLATERAL LIGAMENT

1/3

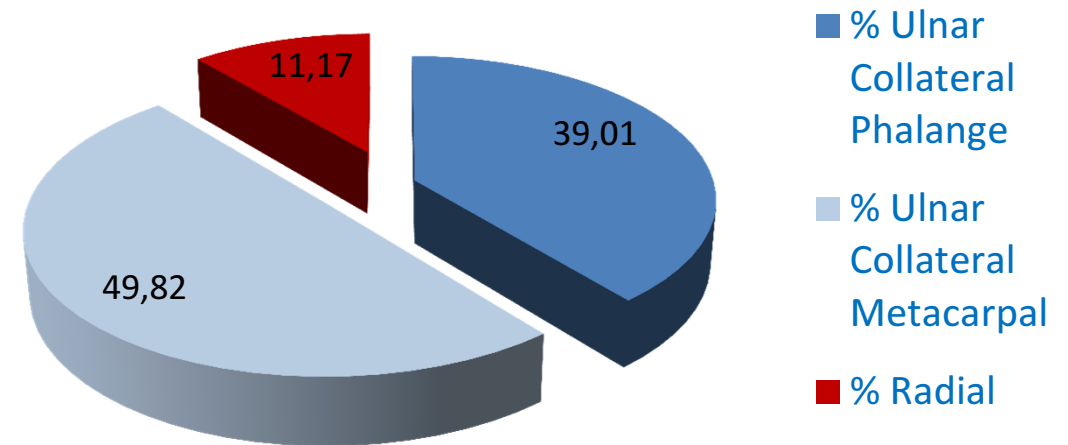
Coonrad & Goldner ..... JBJS, 50-A:439, 1968  
Frank & Dobyns ..... Clin orth, 83:102, 1972  
Green & Tilly ..... JBJS,55-A:1480, 1973  
Smith ..... JBJS, 59-A:14, 1977  
Camp et al .....JOHS, 5-A:221, 1980

# Our experience with 2.471 Skier's Thumb

## Collateral Side



## % Collateral Side



**1 Radial colateral per 8 Ulnar colateral**



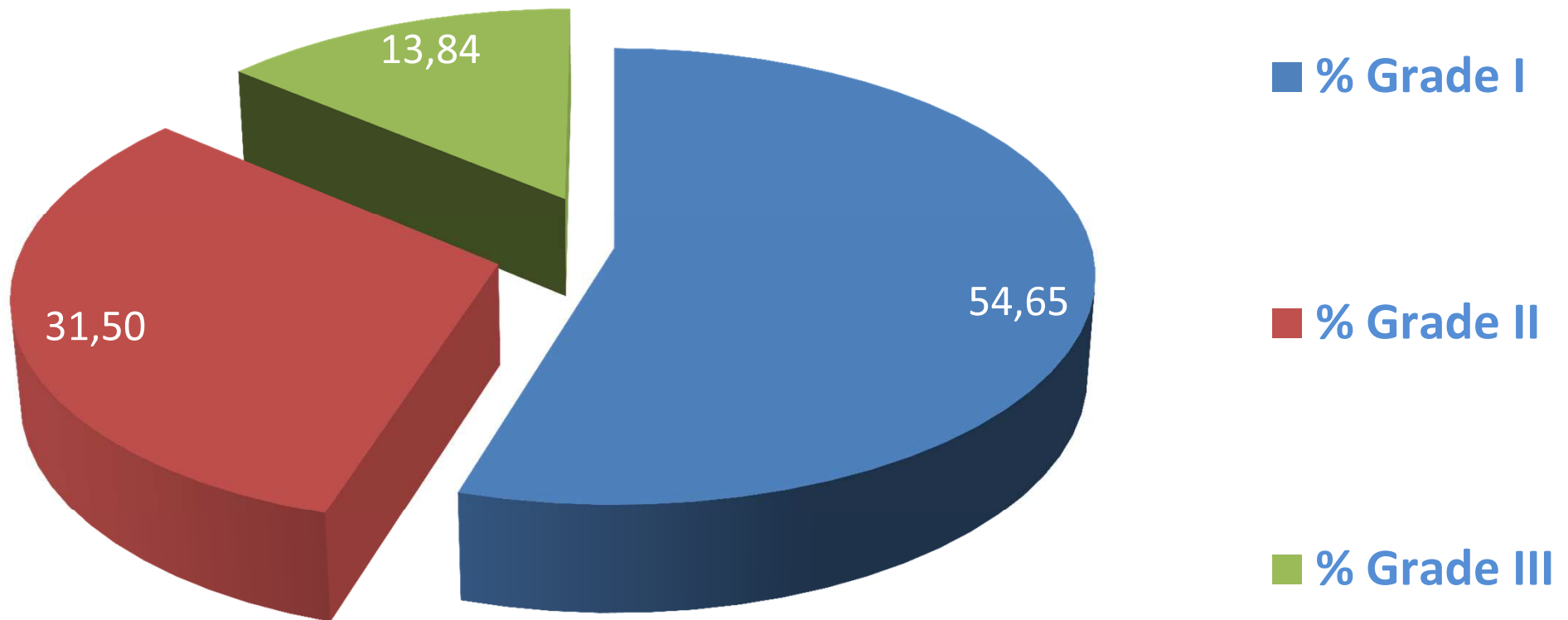
# **CONTROVERSIES IN SKIER'S THUMB MANGEMENT**

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# Injury Classification

- **GRADE I .-**  
**mild sprain, no instability**
- **GRADE II .-**  
**moderate sprain, instability not present or undisplaced fracture in the phalange**
- **GRADE III .-**  
**severe sprain, instability or suspicion of Stener lesion or displaced fracture in the phalange**

# Our experience with 2.471 Skier's Thumb



## Ulnar Colateral



**Grade II**

## Radial Colateral



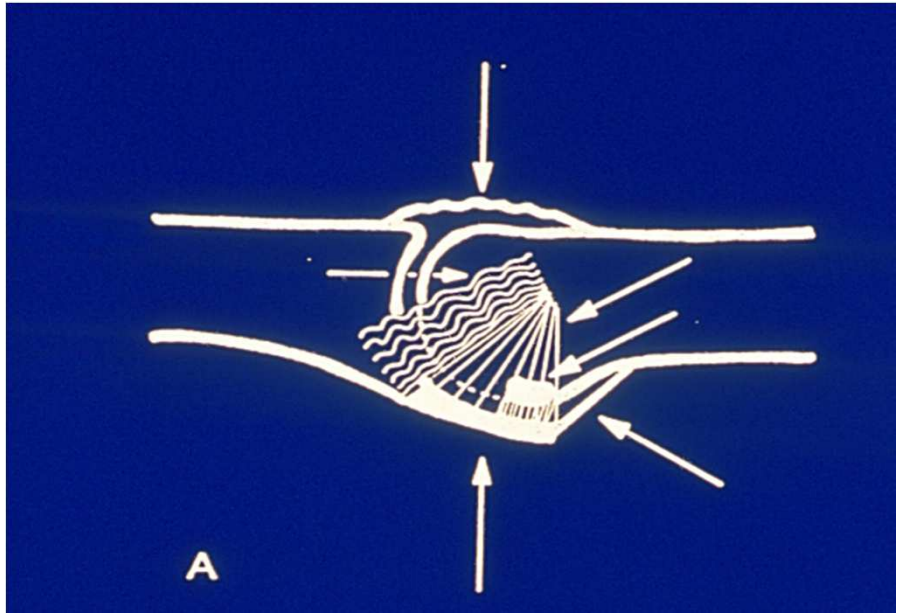
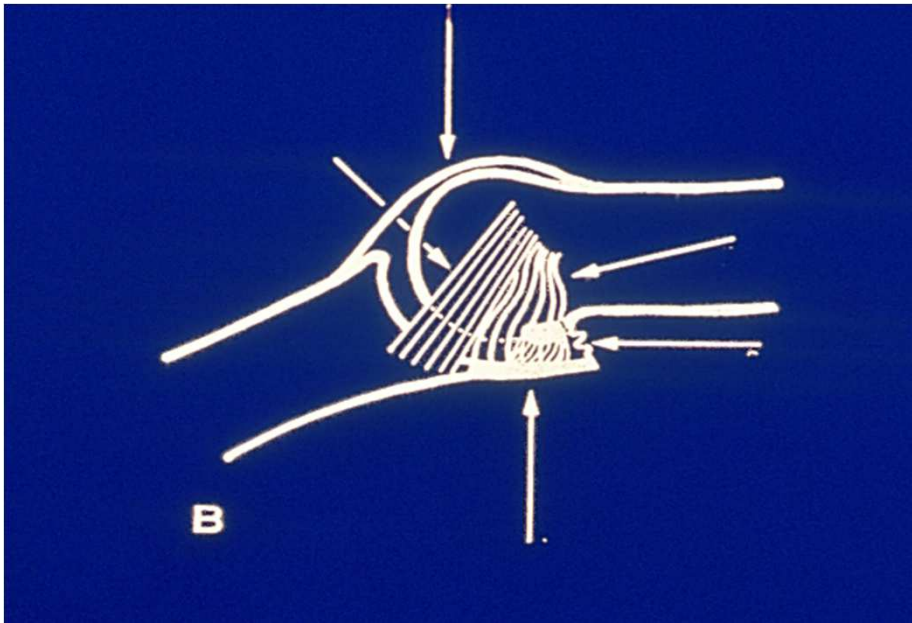
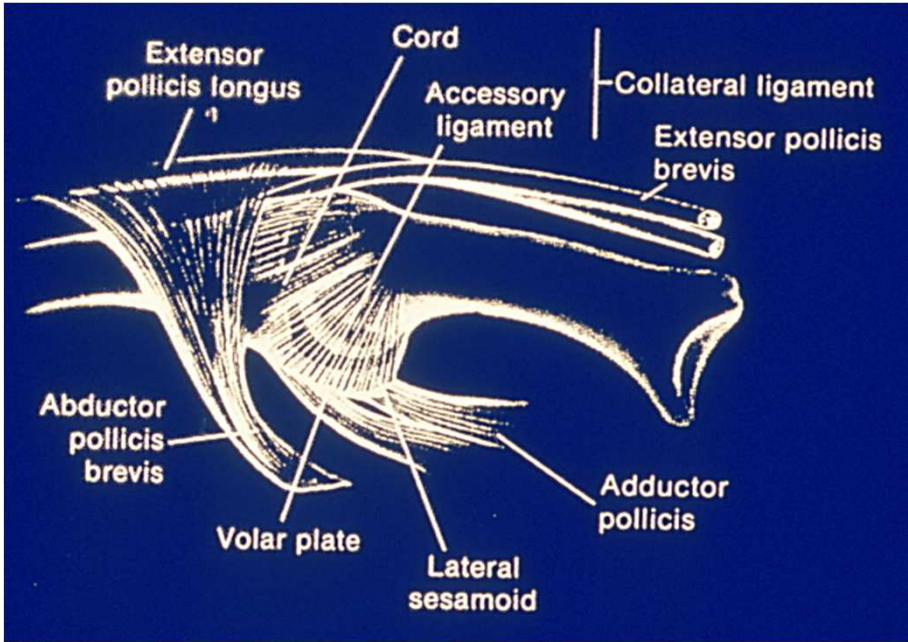
**Grade III**

**Skier's Thumb:**

**“When do we have to get  
surgically active?”**

**“The answer is in the anatomy  
and in the biomechanics”**

# Ulnar Collateral Complex



**“How do we know the  
Anatomy and the  
Biomechanics have been  
disrupted?”**

**“There are 2 clinical signs that indicate severe disruption”**

**Clinical instability compared to the opposite thumb in Extension - Neutral - Semiflexion & Complete Flexion of the mtcp joint. (Pseudo Lachman Test)**

**Palpation of a stump at the head of metacarpal. (Posner& Retillaud. Hand Clinics 8(4),1992)**



**Skier's Thumb, groups II or III:**

**“Take an x ray”**

**“30% of patients had an avulsion fracture at the base of the phalange”**



**Stener ... JBJS,44-B:869,1962**

## **Postoperative treatment after Stener's lesion repair:**

- Immobilization for two weeks
- Physiotherapy, with special attention to the IP joint

# Summary

- **Incidence of Skier's Thumb remains stable in our medical centre**
- **Dominant and Non Dominant hand are equally involved**
- **Ulnar colateral ligament is more commonly affected compared to the Radial side (8/1)**



# Summary

- **Diagnosis is based on Clinical Signs and X-ray.**
- **Treatment orientation is still Challenging**
- **Indications for surgical Treatment are:**
  - **Suspicion of Stener lesion**
  - **Displaced Fracture in the Phalange**
  - **Feeling of Joint Instability compared to the opposite side**





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