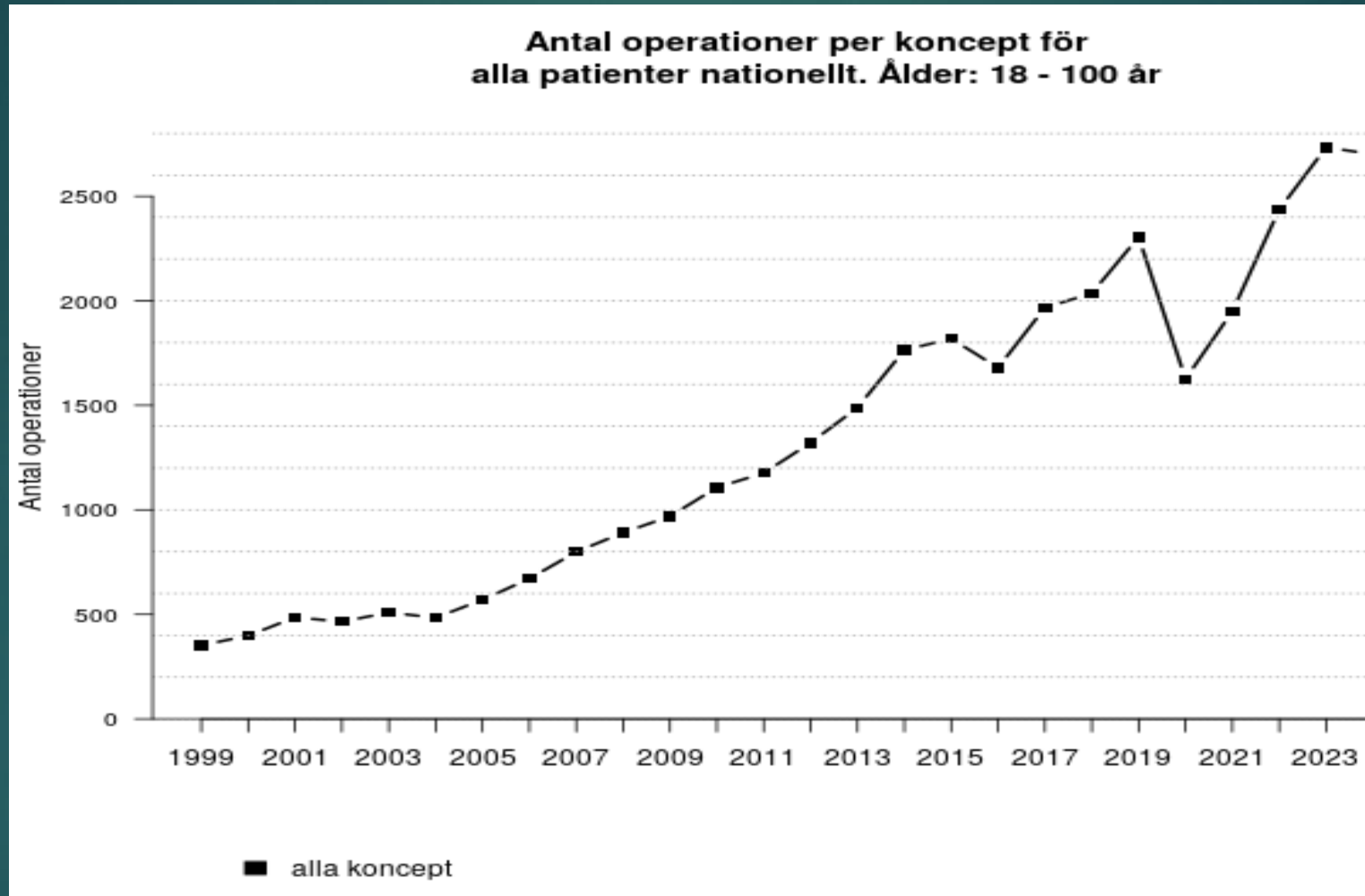


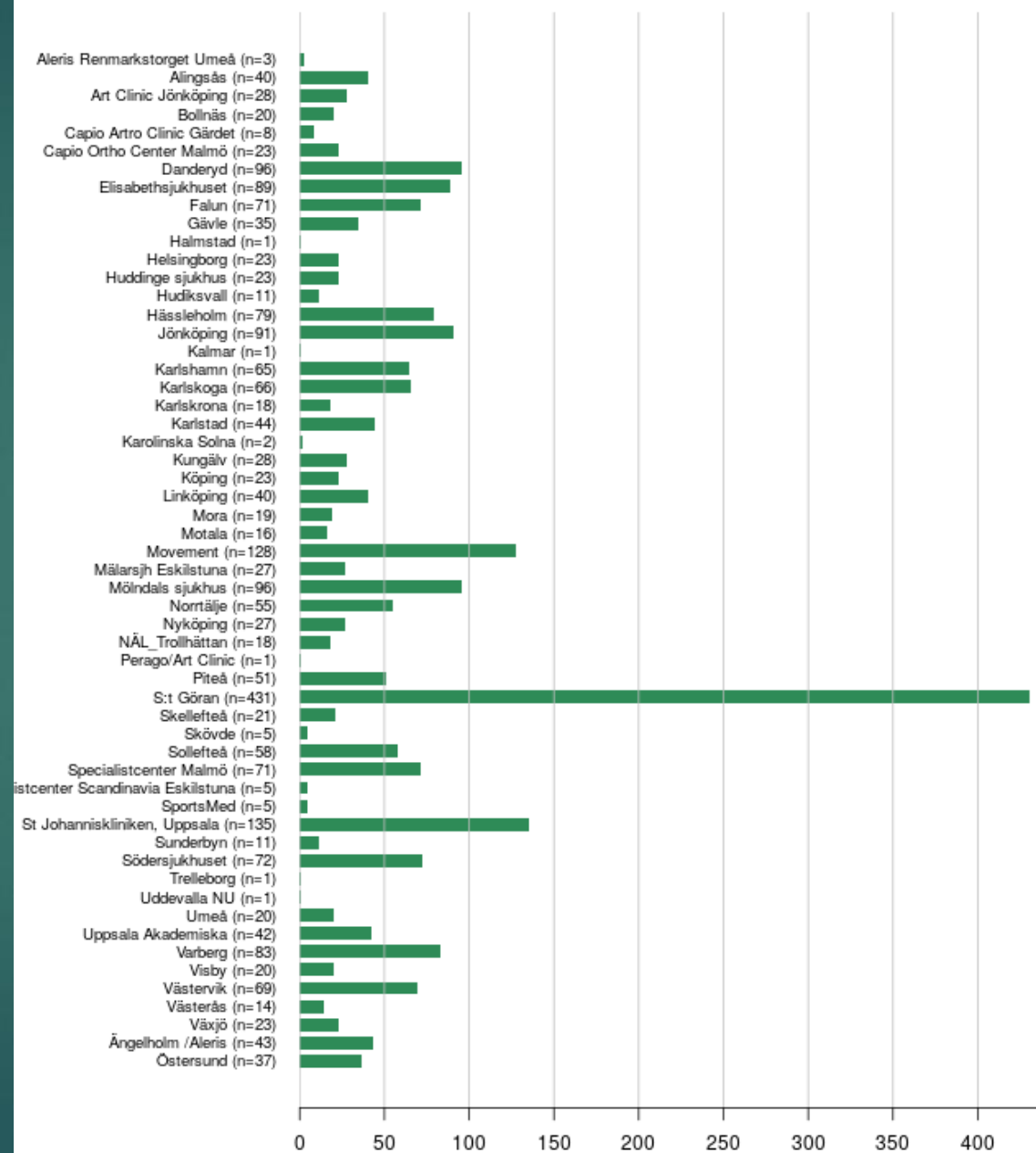
Axelproteser 2025-04-02

Antal axelproteser i Sverige från 1999 och framåt



Antal operationer i Sverige 2024

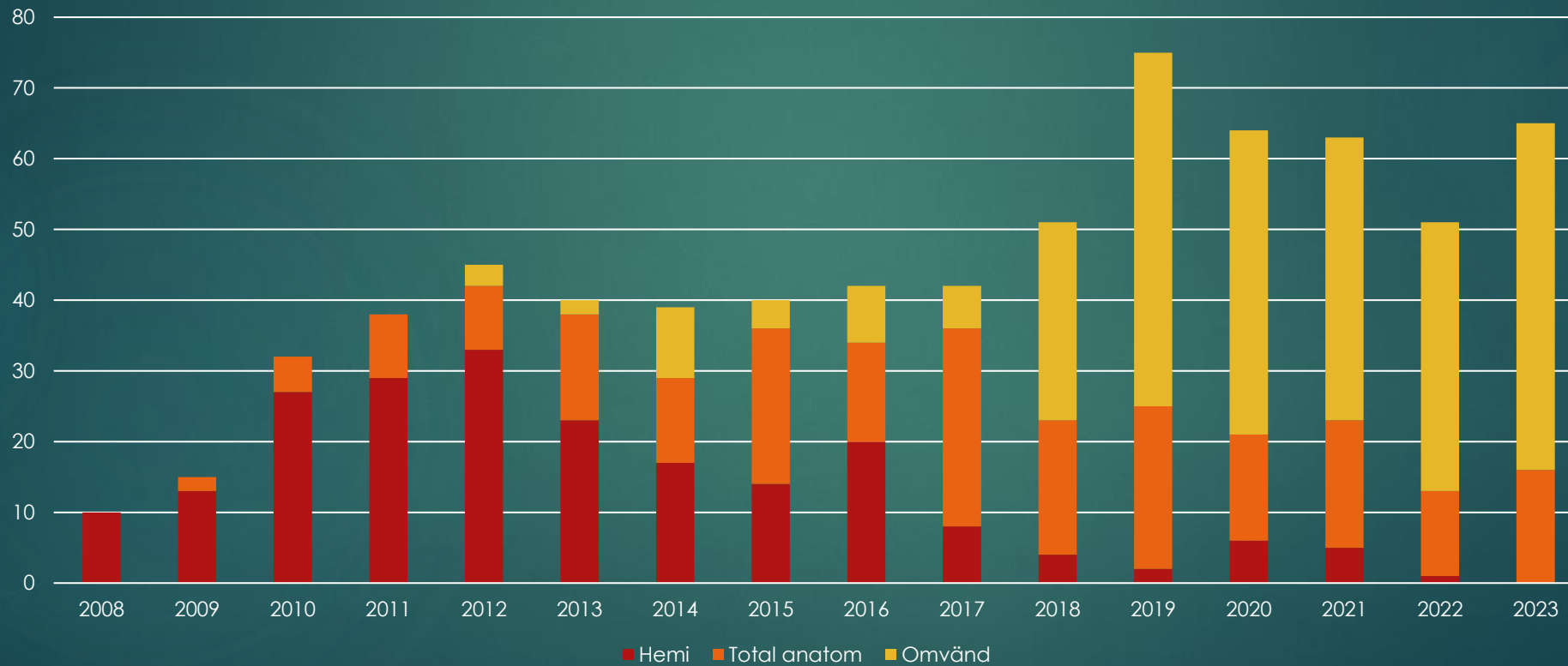
Antal operationer per sjukhus nationellt
(Antal registrerade patienter 2024 Ålder: 18-100 år)



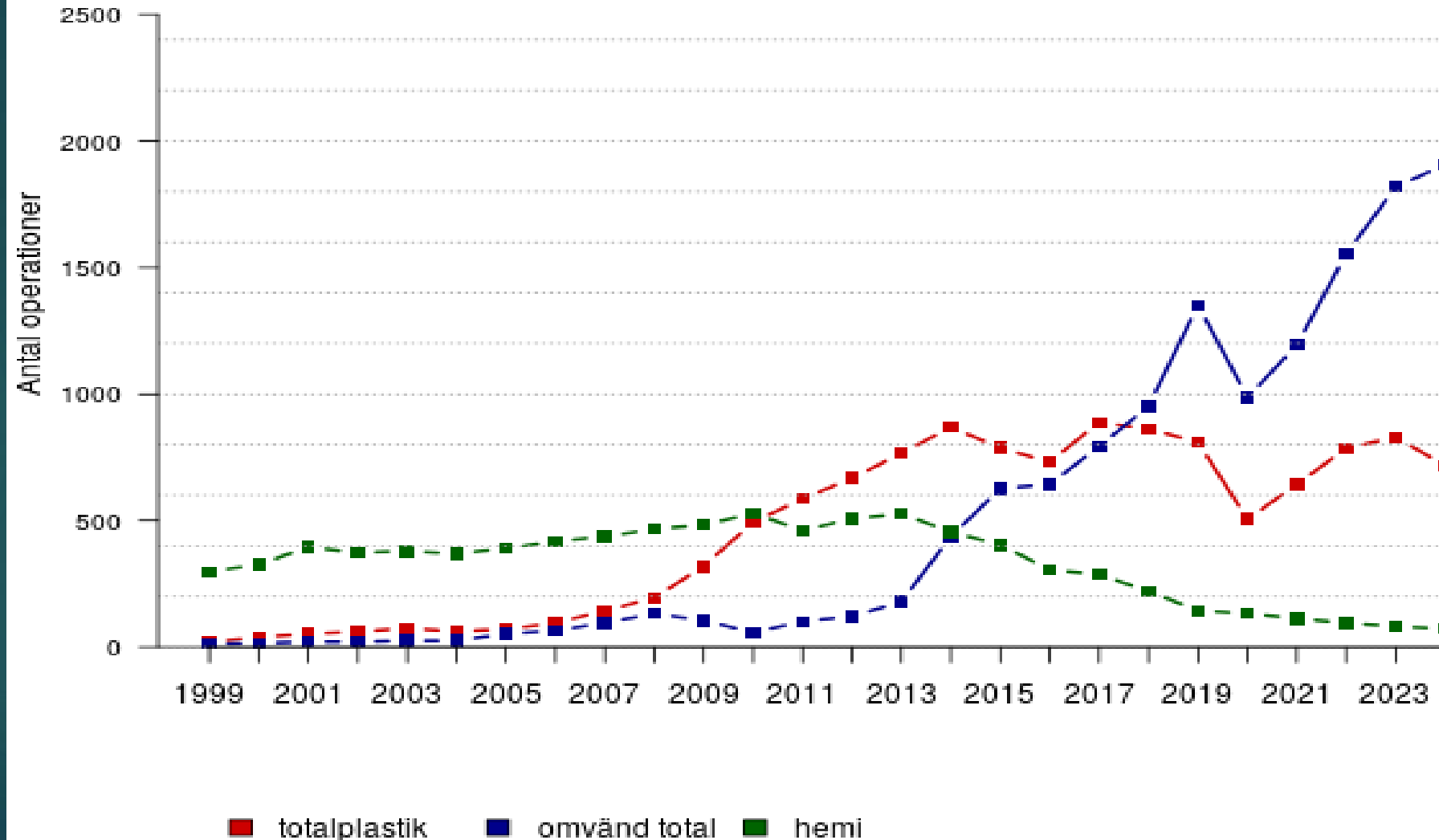
Figur 2: Svenska Avel Registeret, 2025-03-11 07:15:58

Primära axelproteser i Västervik

Primära axelproteser

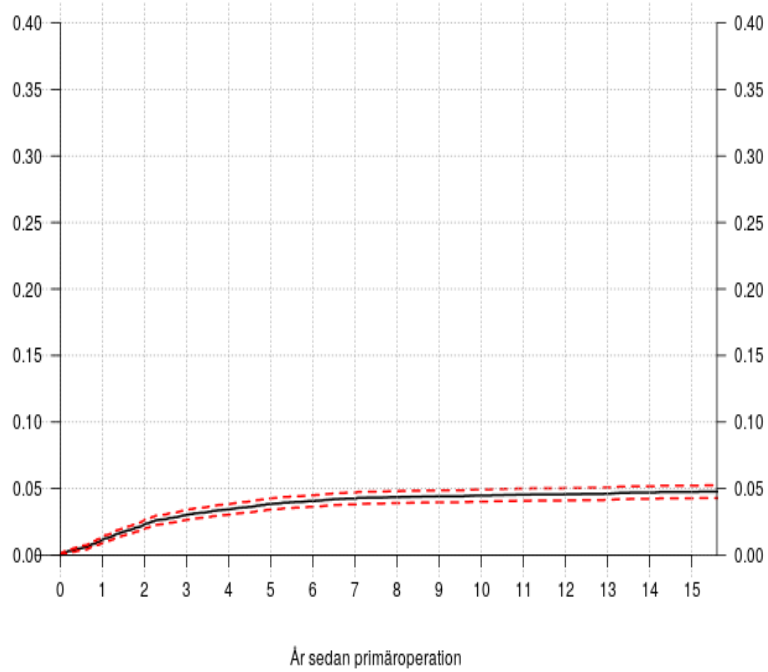


Antal operationer per koncept för alla patienter nationellt. Ålder: 18 - 100 år

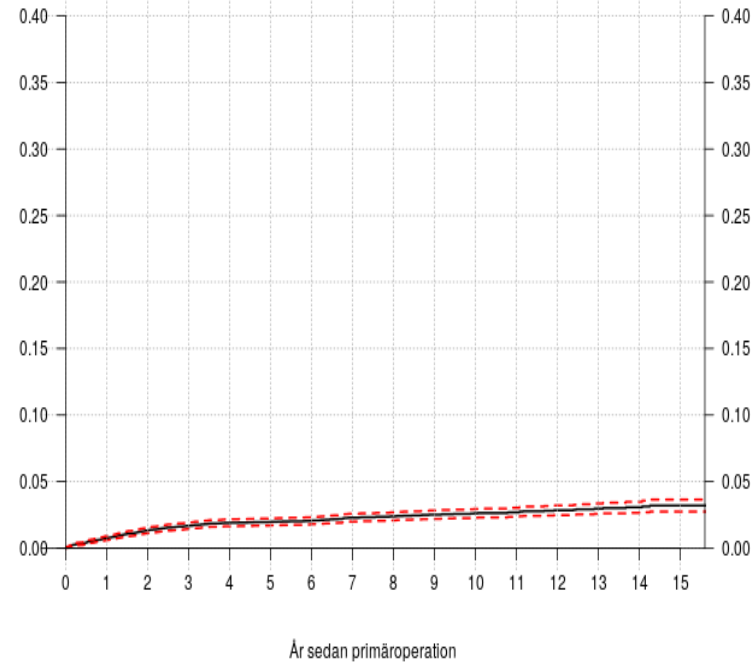


Överlevnadskurvor

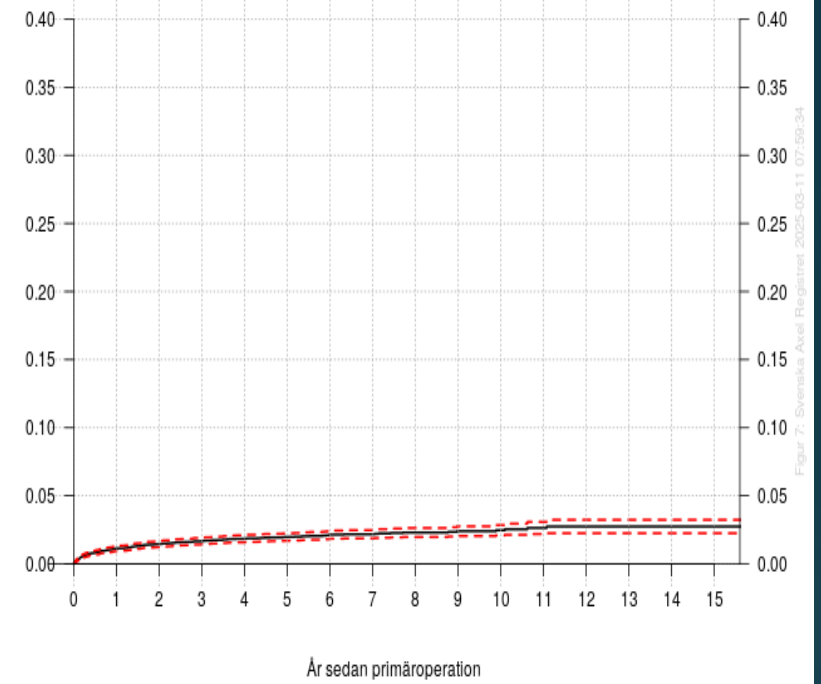
Protestyp: Hemi Antal op = 8163 Antal revision t.o.m. 2025 = 373



Protestyp: Totalplastik Antal op = 11811 Antal revision t.o.m. 2025 = 267



Protestyp: Omvand total Antal op = 12403 Antal revision t.o.m. 2025 = 223

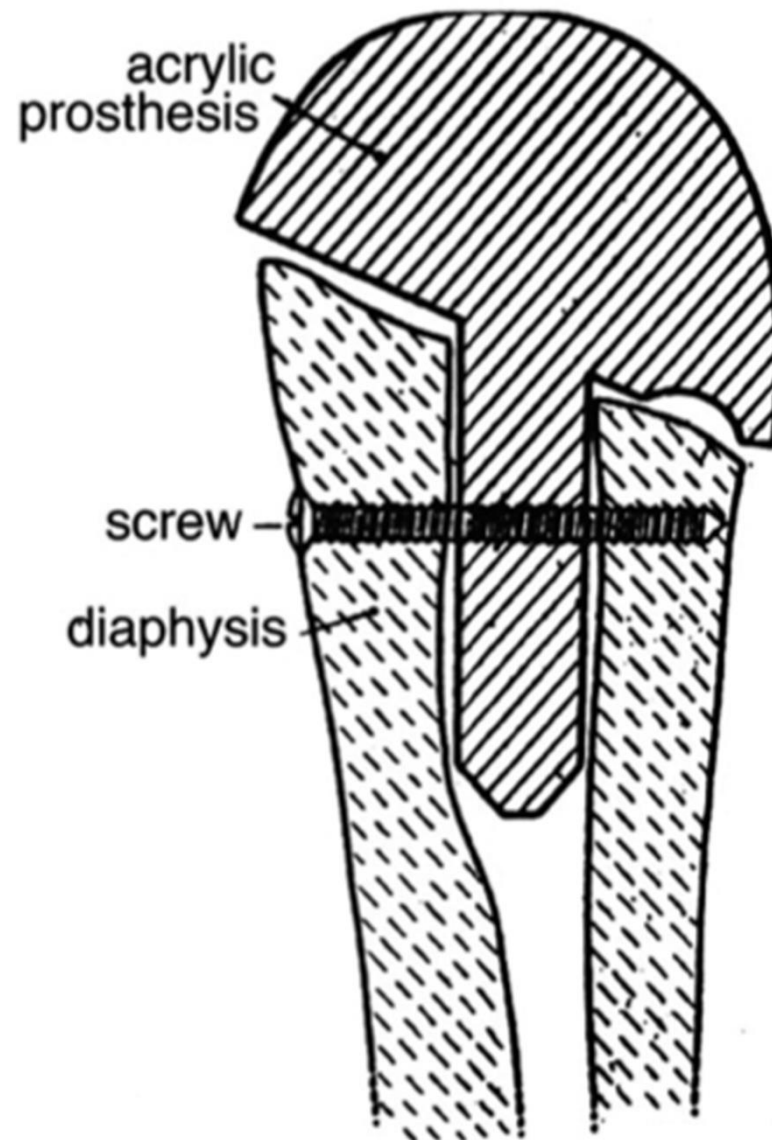


Axelprotes anno 1893



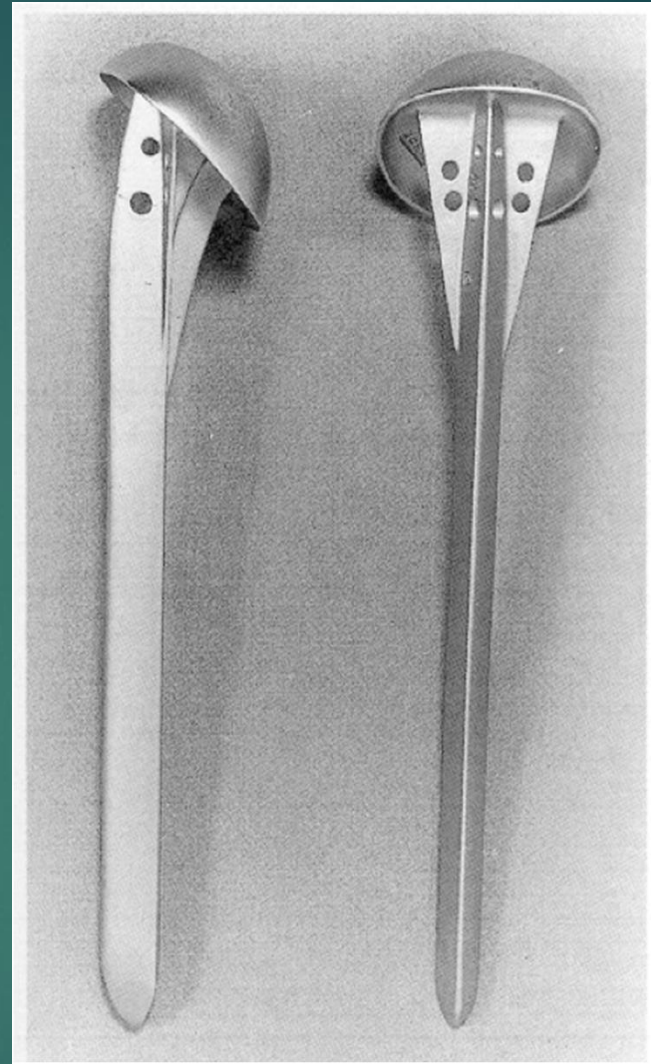
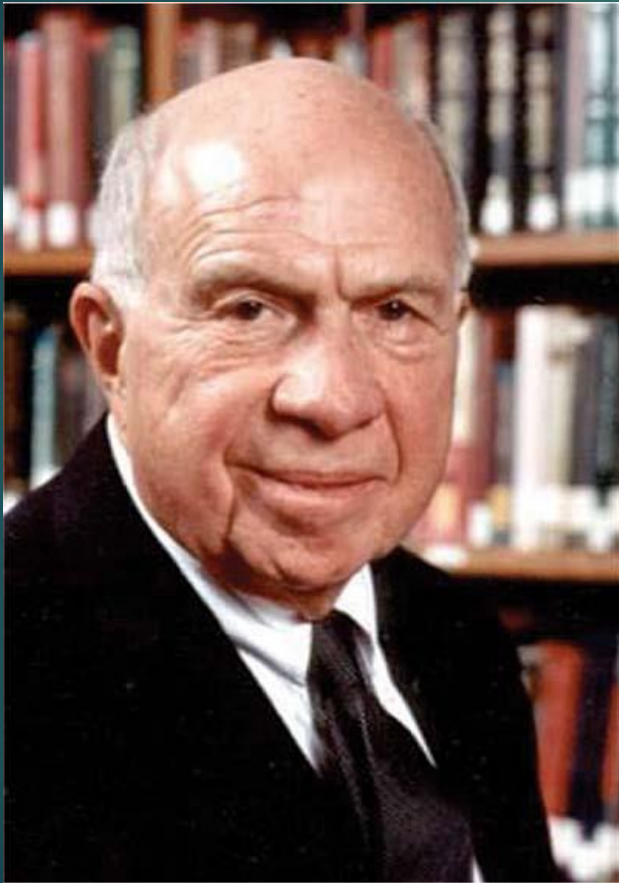
1950-talet

Boron-Sevin



Charles S. Neer

9



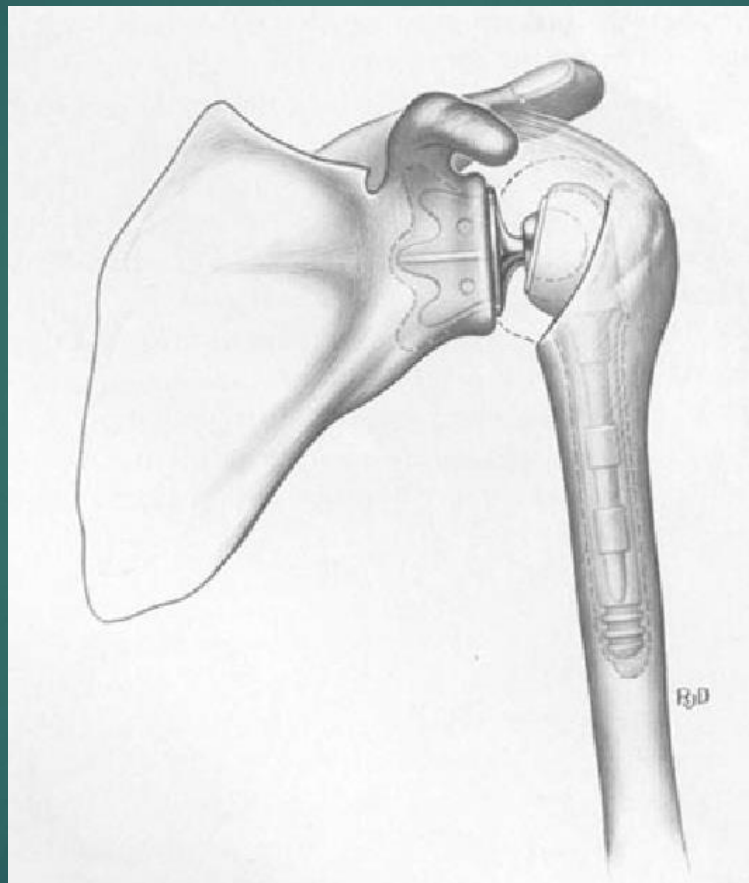
Neer I, 1955

2000-talet

10



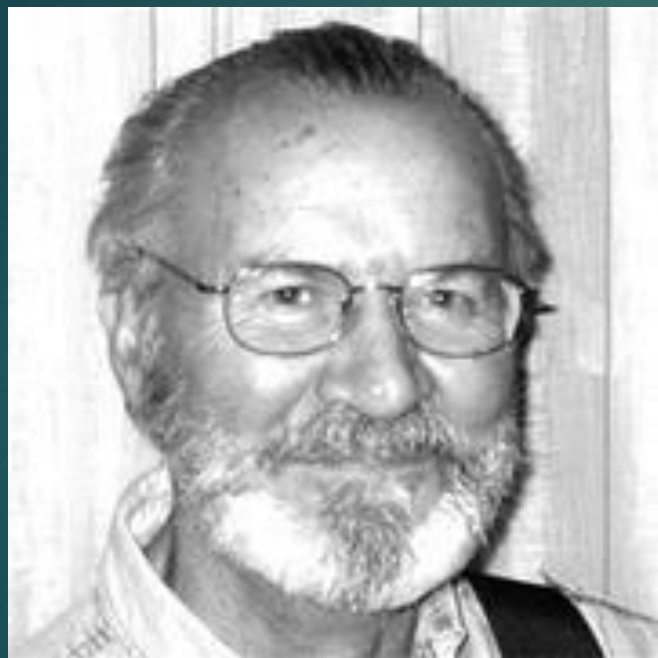
Omvänd protes



Neer 70-talet

1990-talet, Deltaprotesen

12



Paul M. Grammont



Hemiprototes



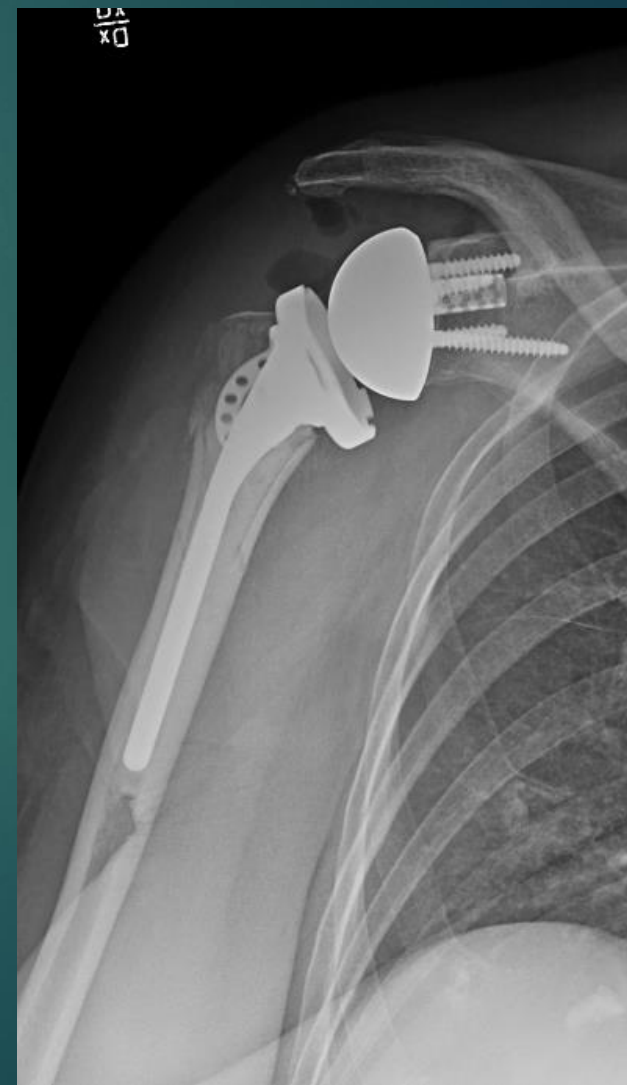
Anatomisk totalprotes

14



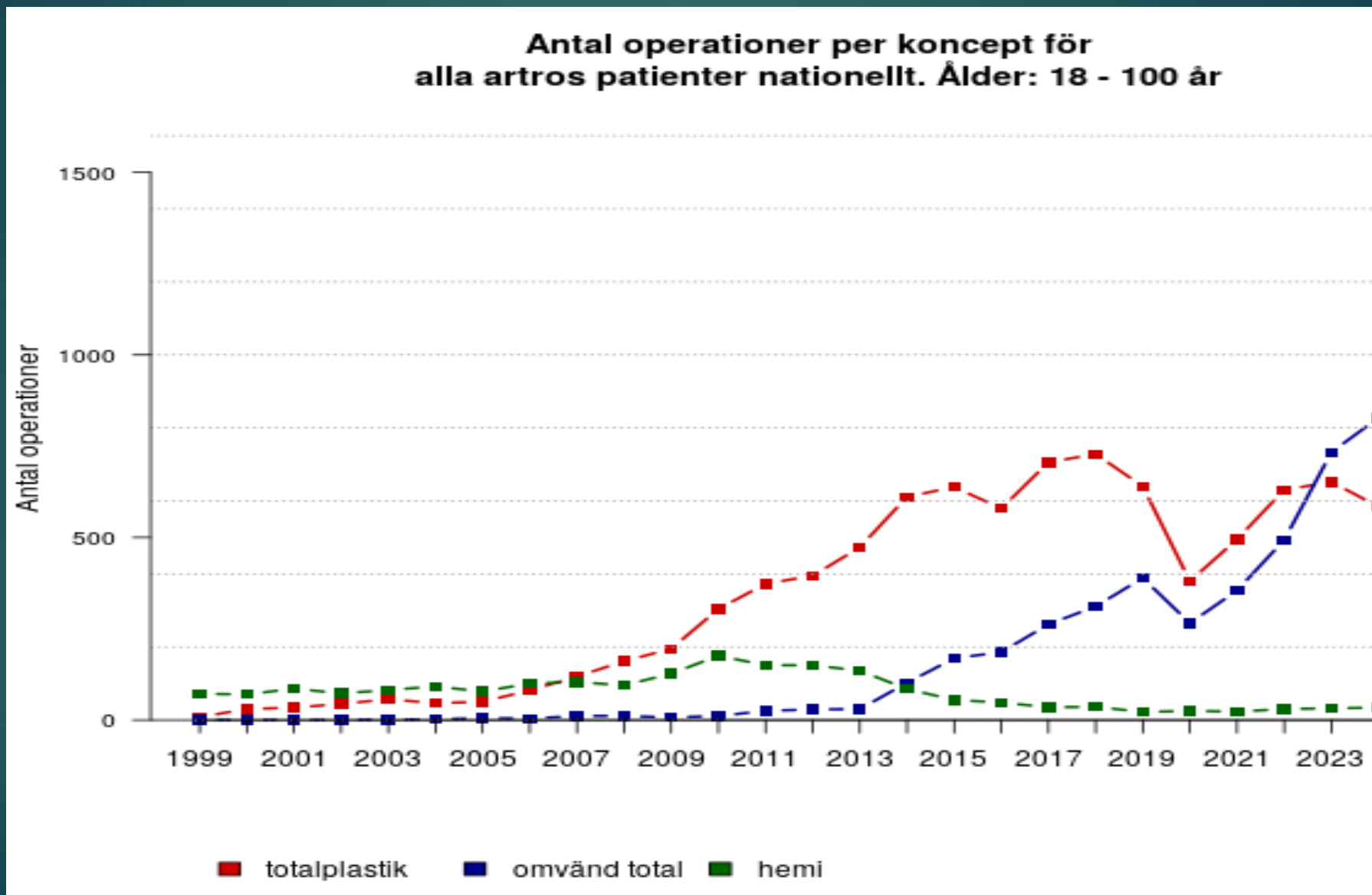
Omvänd protes

15



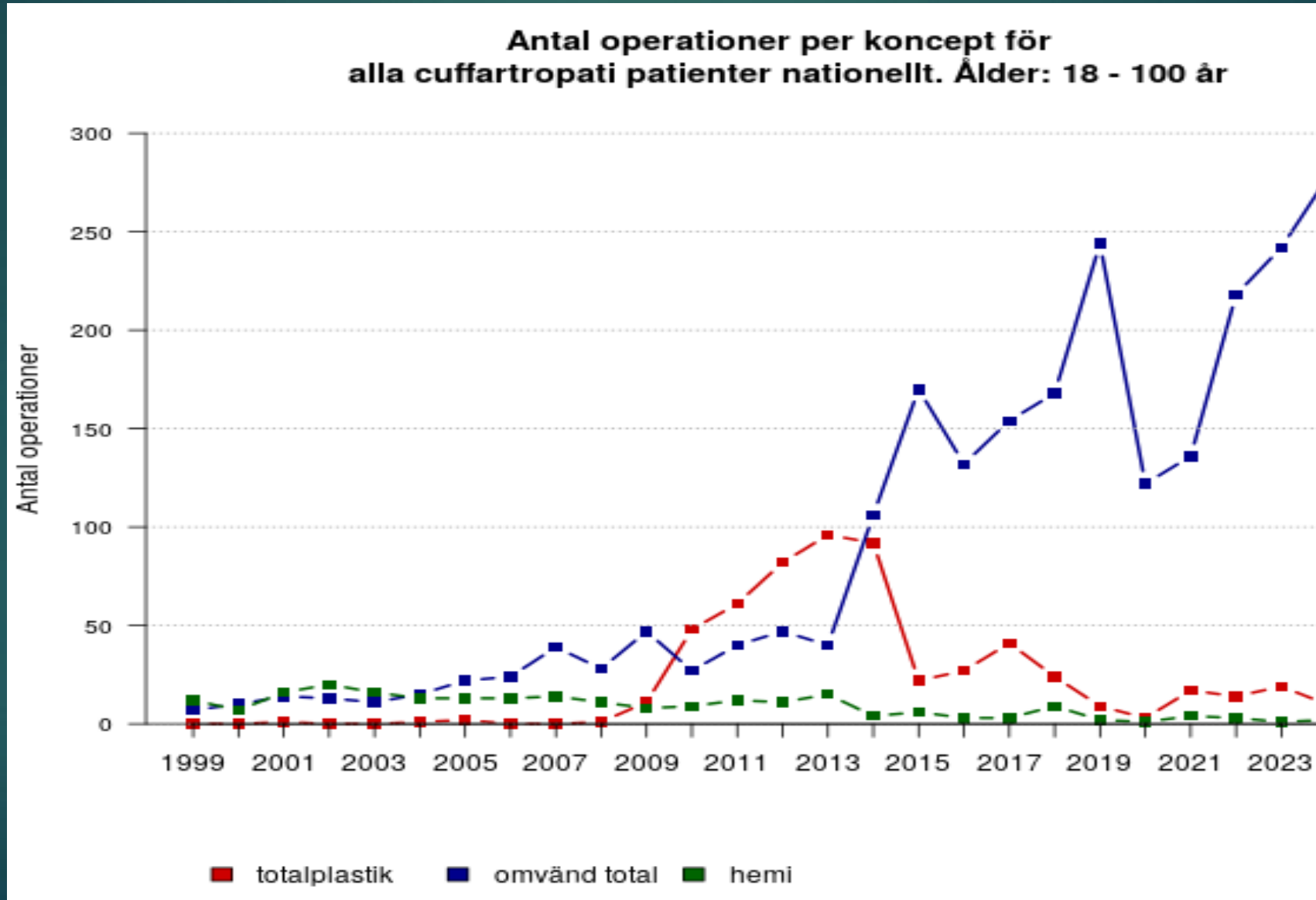
Artros

16

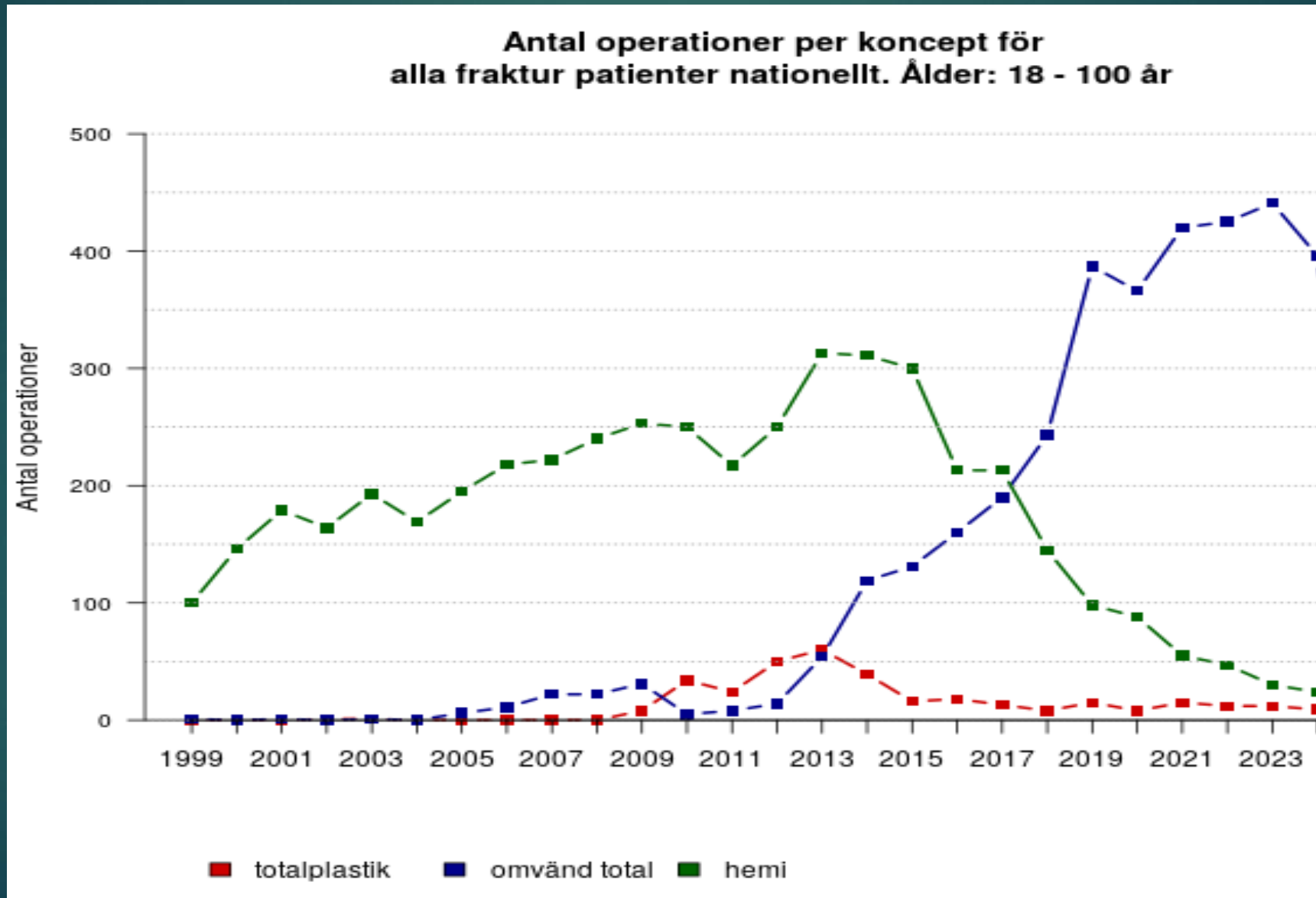


Cuffartropati

17



Fraktur

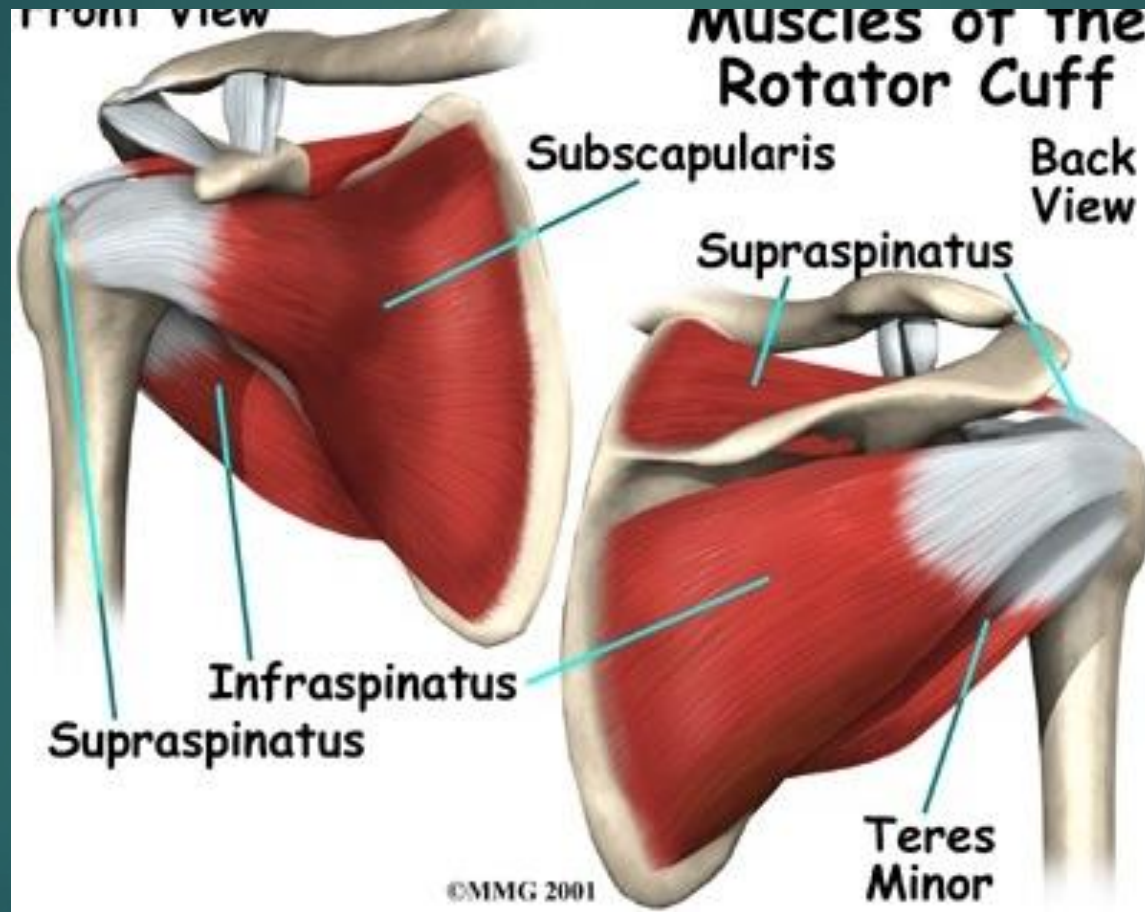


Glenohumerala leden



Rotatorcuffen

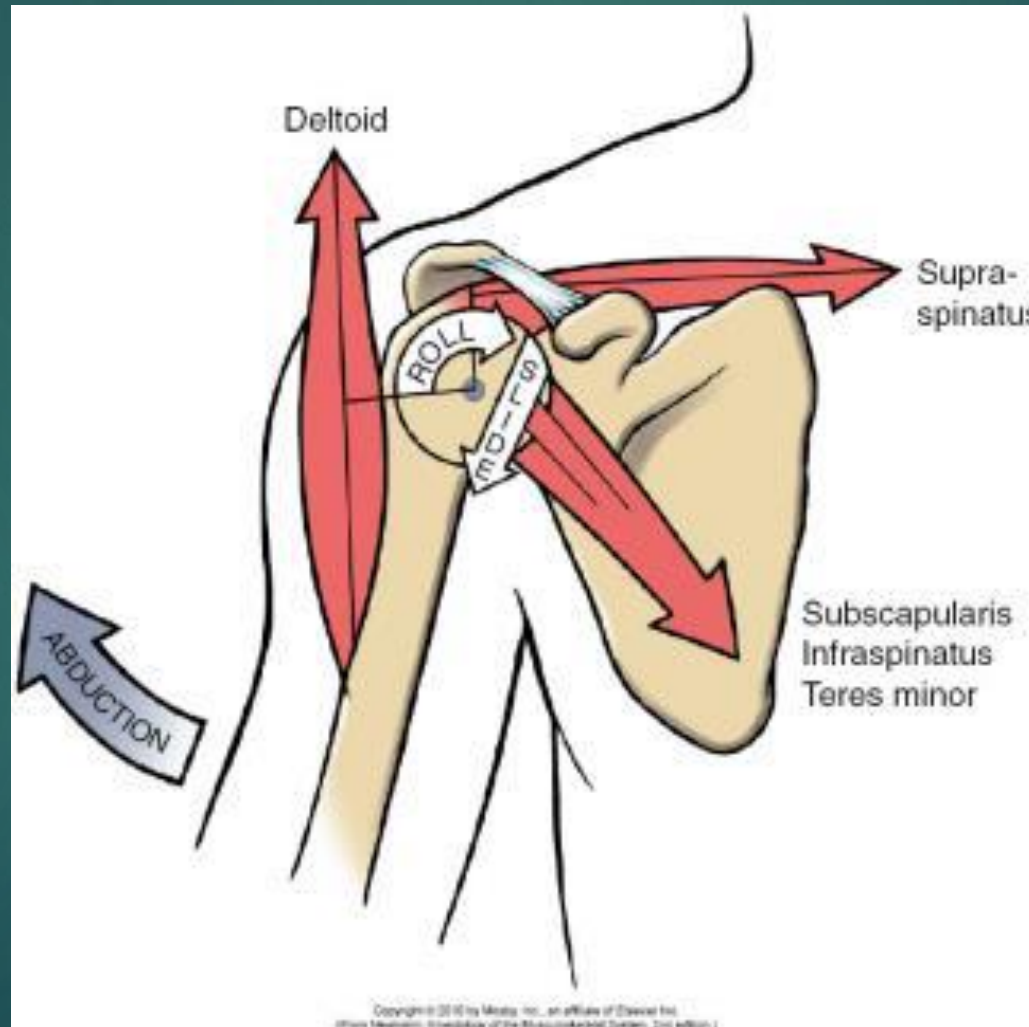
20



Stabiliserar/centrerar caput i glenoiden

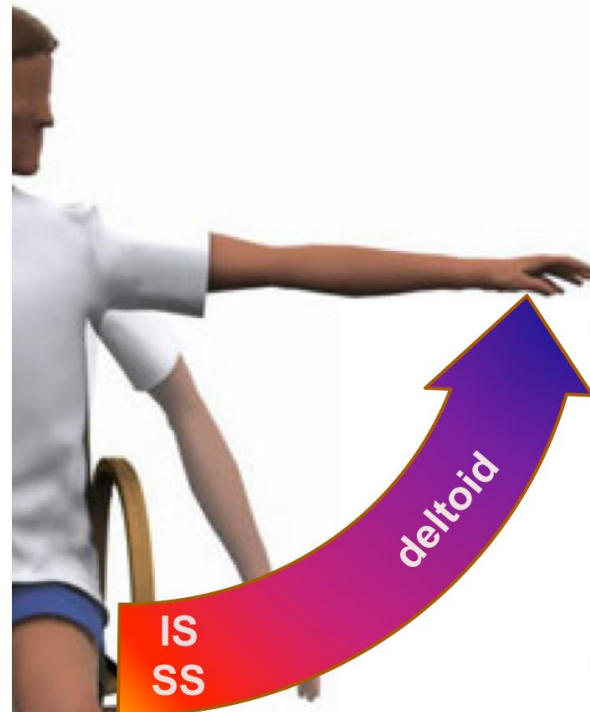
Biomekanik axelleden

21

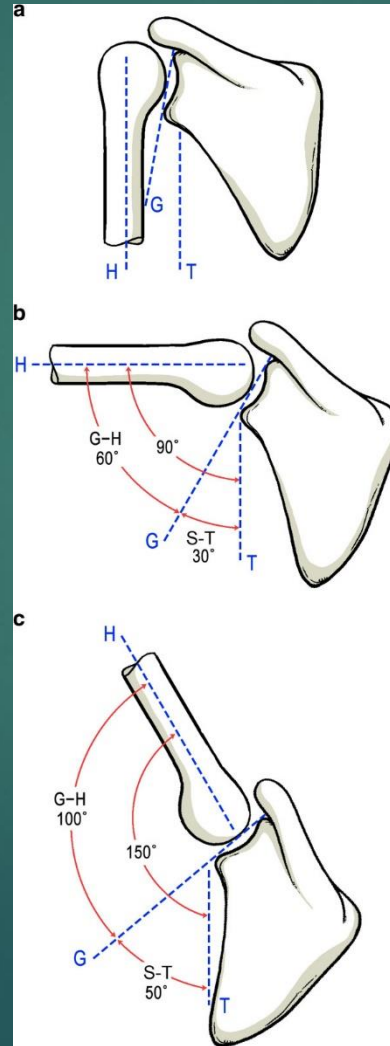


Shoulder abduction

- Action muscle of shoulder abduction
 - Supraspinatus (SS) and infraspinatus (IS) muscle
 - C56 - UT - Suprascapular n.
 - main agonist muscle during the **first 10-15 degrees**
 - Deltoid muscle
 - C567 - PC - axillary n.
 - main propagator of abduction **beyond 30 degree**



Skapularotation



Indikationer för axelledartroplastik

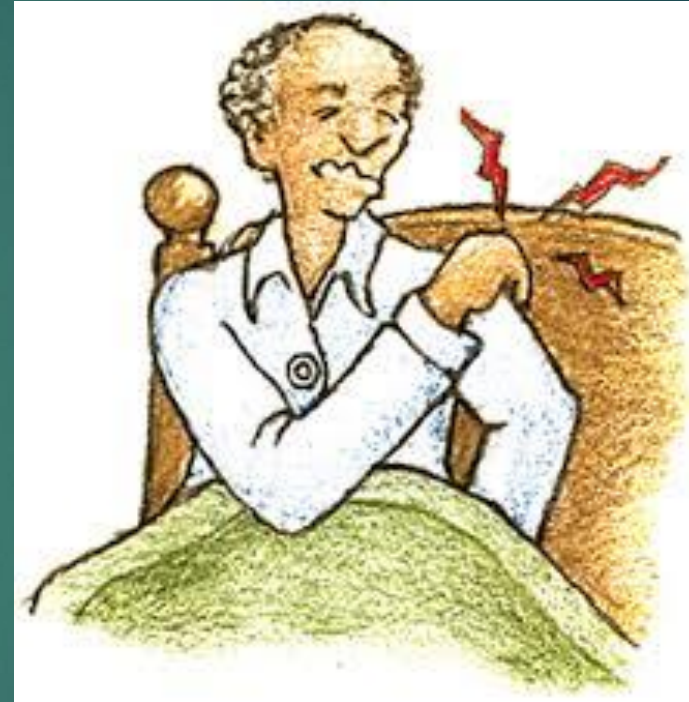
24

- ▶ Atros – primär, sekundär
- ▶ Artrit
- ▶ Caputnekros
- ▶ Frakturer, pseudartros
- ▶ Cuffskador, cuffartropati

Glenohumeraleds artros

25

- ▶ Äldre
- ▶ Idiopatiskt/posttraumatisk
- ▶ Värk dag och nattetid
- ▶ Dålig rörlighet



Glenohumeralledsartros

26



Preoperativ undersökning och kartläggning

27

- ▶ Anamnes – värk, stelhet, rörelsesmärta, kraftnedsättning
- ▶ Klinik – ROM–aktiv-passiv, kraft inåt-utåt, ömhet-obs! AC-leden
- ▶ Funktion – Constant score
- ▶ Rtg – mallning
- ▶ CT – glenoiden, cuffmuskler
- ▶ Medicinskt skick!!

Constant score

28

	Points
Pain	
Severe	0
Moderate	5
Mild	10
None	15
Activity of daily living	
Full work	
Severe	0
Moderate	2
No	4
Full recreation/sport	
Severe	0
Moderate	2
No	4
Affected sleep	
Yes	0
Sometimes	1
No	2
Use of arm in painless activity	
Waist	2
Xiphoid	4
Neck	6
Head	8
Above head	10
Range of motion	
Forward elevation	10
Lateral elevation	10
External rotation	10
Internal rotation	10
Strength	25

Cuffmuskelstatus

29



Glenohumeralleden

Normal axel



Rotatorcuffruptur



Glenohumeralledsartros

31

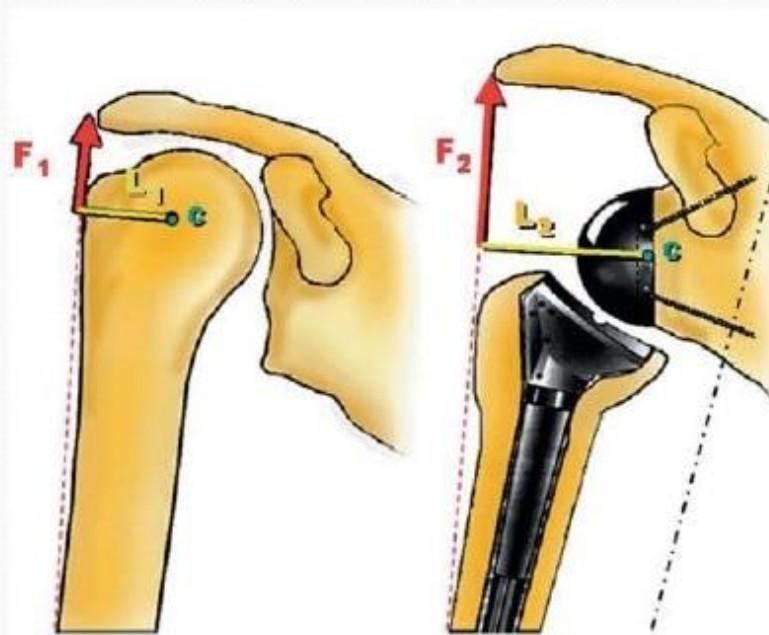
Om hel rotatorcuff



Vid rotatorcufffraktur



Biomechanical effects of reversed prosthesis



-The lever arm distance (L) is increased and deltoid force (F) is increased by lowering and medializing the centre of rotation which is now also fixed.

-Torque ($F \times L$) in abducting the arm is increased.

-Deltoid tension increased on lifting and lowering arm.

- \uparrow Joint compression.

- 105° elevation +.

Indikationer för omvänd protes

33

- ▶ Frakturer/pseudartroser
- ▶ Cuffinsuficiens, cuffartropati
- ▶ Kraftig deformitet/substansförlust

Osteosyntes



Omvänd protes vid fraktur

35



Cuffartropati

36



Deformering - benförlust

37



Varför omvänd protes till fraktur?

- ▶ Ofta dålig cuff hos äldre med osteoporos
- ▶ Ofta cuffskador vid splittrad fraktur
- ▶ Dålig inläkning av tuberklar

Problem hemiprototes vid fraktur

39



Postop



Efter ett år



Andra problem vid axelproteskirurgi

41

- ▶ Stramhet – överstuffing, anatomiska
- ▶ Glapp – instabilitet, omvända
- ▶ Medialt impingement, omvända
- ▶ Kraftigt retroverterad glenoid
- ▶ Infektioner – cutibacterium (propione) acne

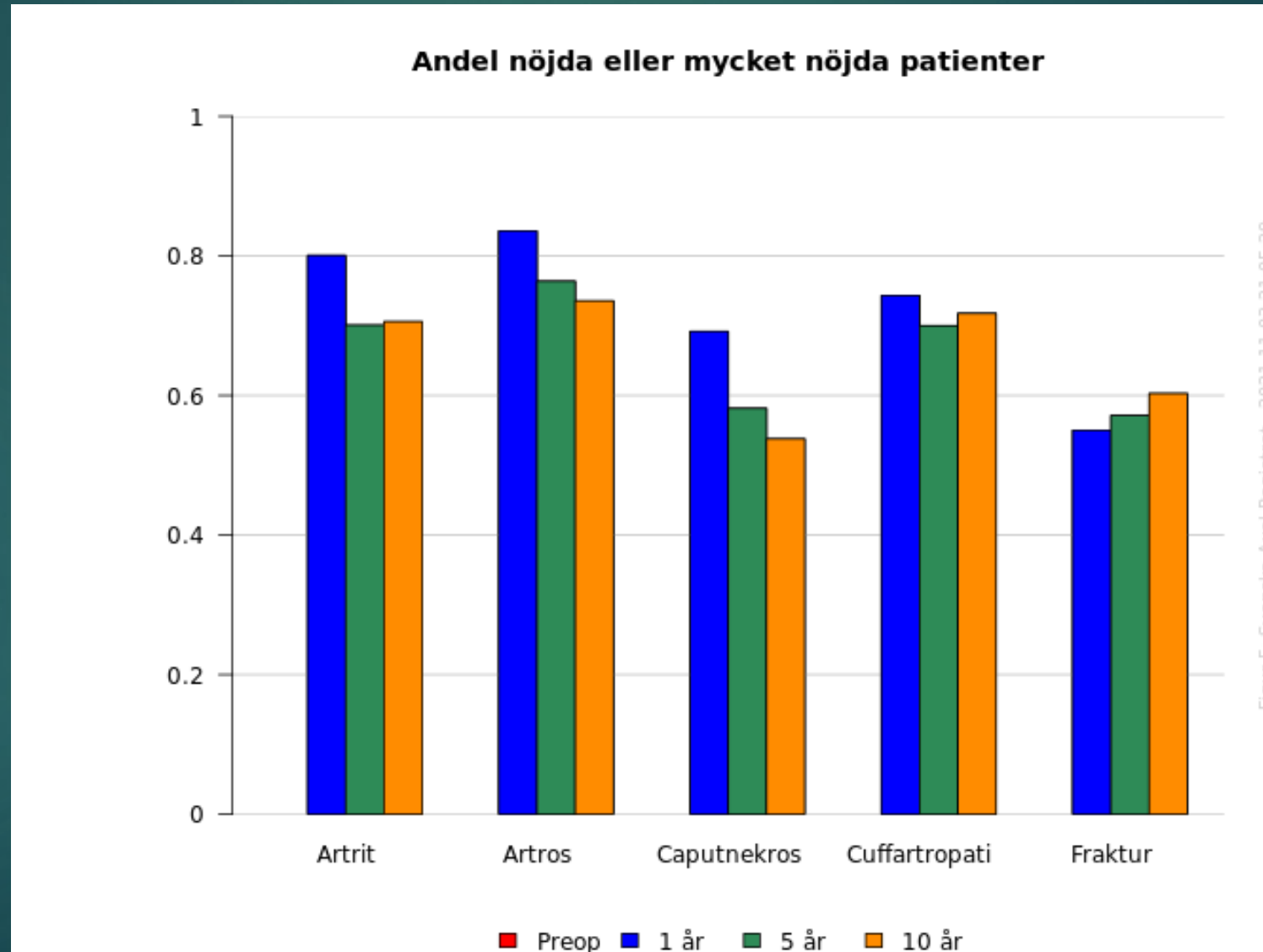
Overstuffing?

42





Uppföljning nöjdhet/diagnos



Uppföljning nöjdhet/protestyp

45

