



OSNOVE ULTRAZVOKA ULTRAZVOK MEHKIH DELOV SKLEPOV ULTRAZVOK ŽIL

Martin ŠINIGOJ, dr. med., spec. int. med

Goriško osteološko društvo, 21.3.2009

VSEBINA PREDAVANJA

- Osnove ultrazvočne diagnostike
- Ultrazvočna diagnostika arterij
- Ultrazvočna diagnostika ven
- Ultrazvočna diagnostika mehkih tkiv sklepov
- Zaključek





OSNOVE ULTRAZVČNE DIAGNOSTIKE

KAJ JE ULTRAZVOK

- ZVOČNO VALOVANJE
- FREKVENCA VEČ KOT 20 kHz

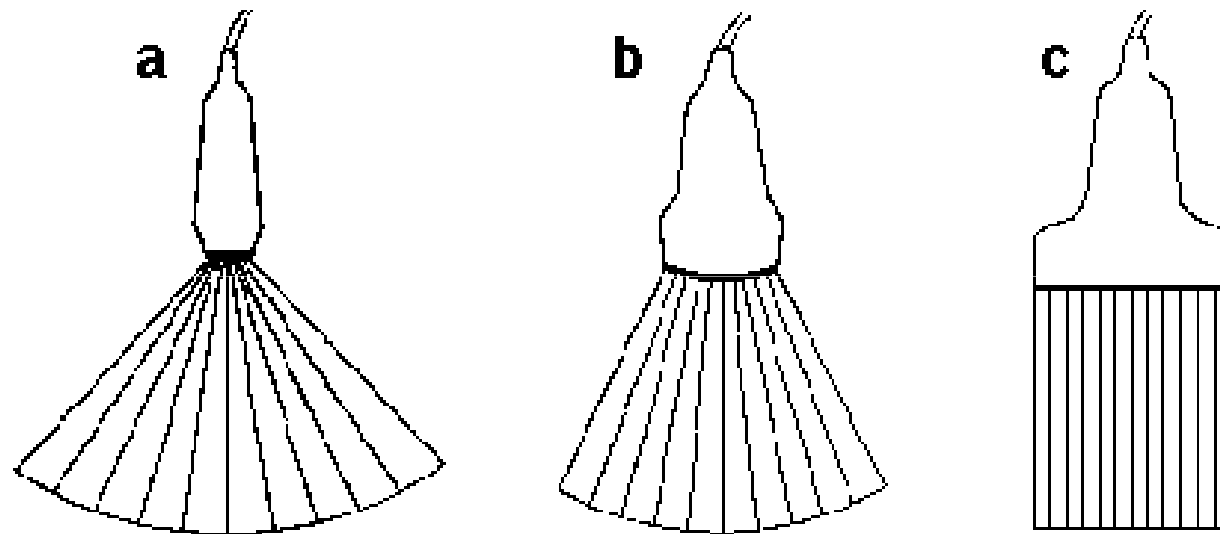


ULTRAZVOČNI PARAMETRI

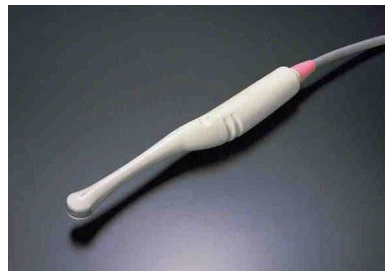
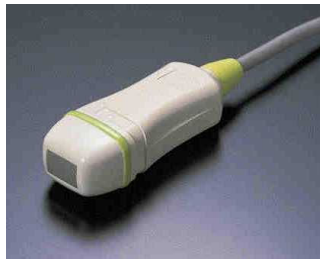
- VIR ULTRAZVOKA:
 - FREKVENCA
 - JAKOST
- MEDIJ:
 - HITROST PREVAJANJA
 - AKUSTIČNA IMPEDANCA
 - OSLABITEV, ABSORPCIJA, RAZPRŠITEV



ULTRAZVOČNE SONDE



ULTRAZVOČNE SONDE

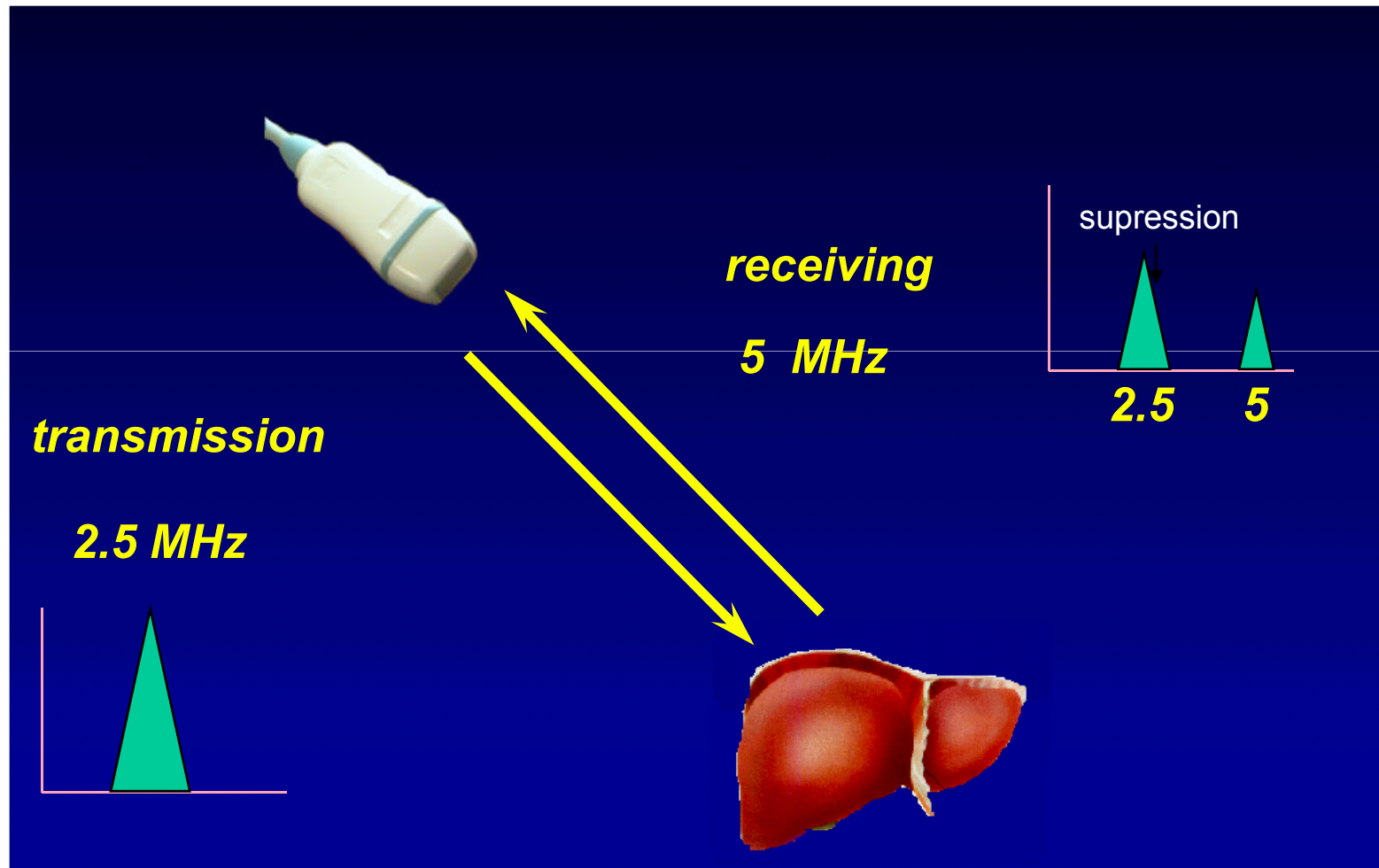


DIAGNOSTIČNI ULTRAZVOK

- SLIKOVNI PRIKAZI:
 - A MODE (one-dimensional)
 - B MODE (two-dimensional, three-dimensional)
- DOPLERSKE METODE:
 - CW
 - PULZNI DOPLER
 - BARVNI DOPLER (COLOR)
 - ENERGIJSKI DOPLER (POWER)
 - TKIVNI DOPLER
- KOMBINIRANE METODE (duplex, triplex)



PRINCIPI PRIKAZA

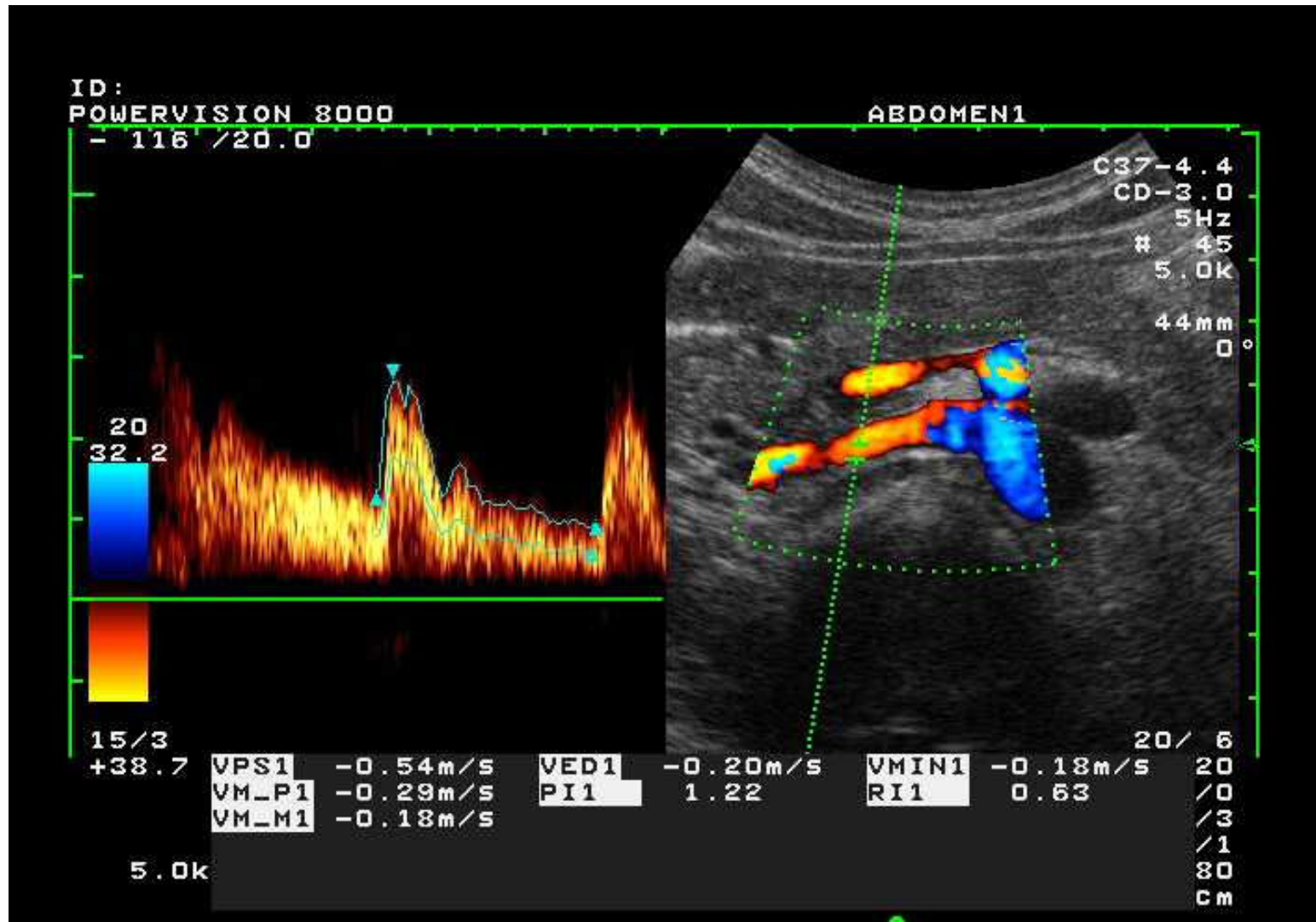


ULTRAZVOK IN DOPLER

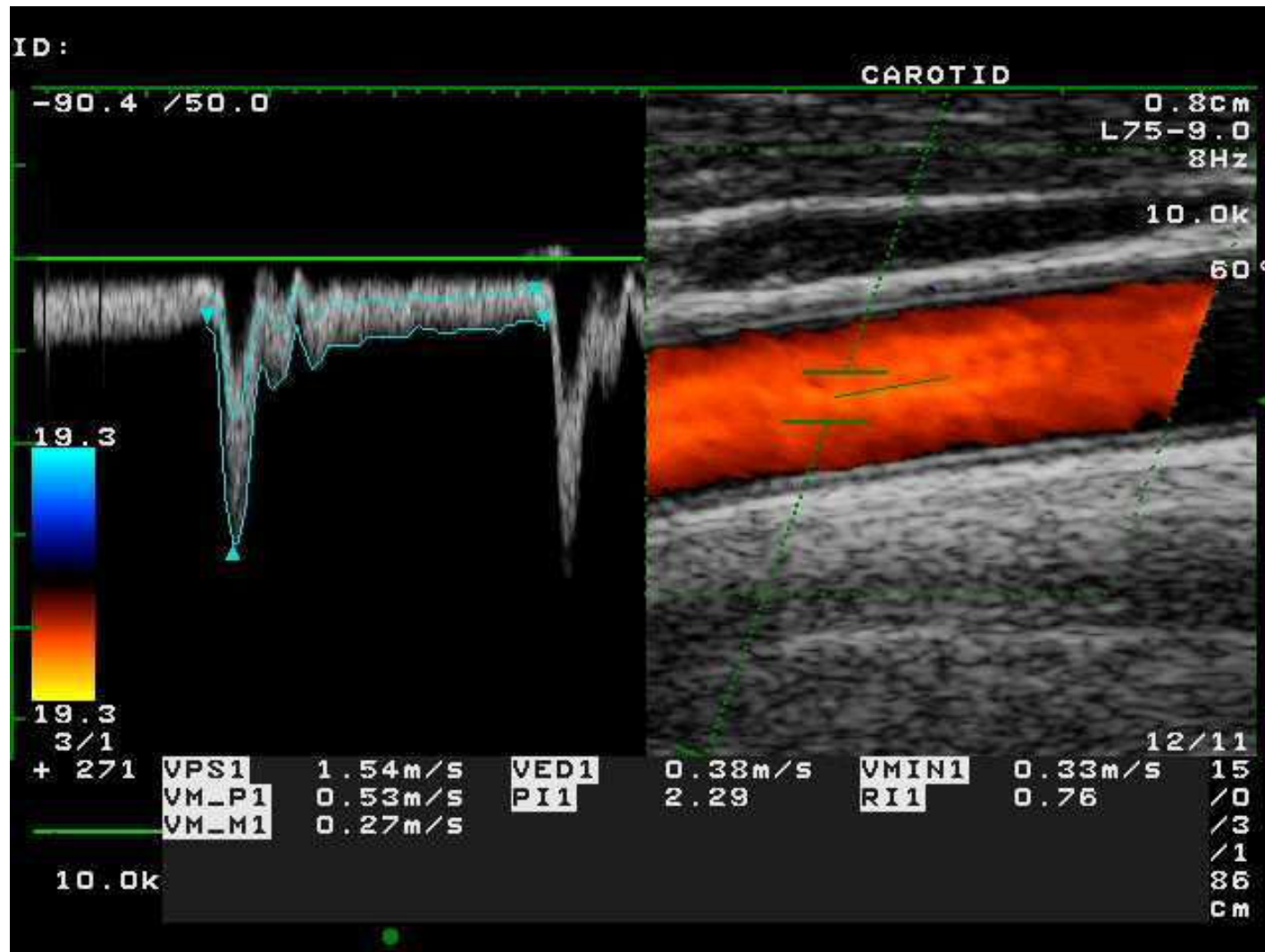
- A.Ch. Doppler (1803-1853)
- DOPLERSKI PRINCIP(1842)
 - PREMIK FREKVENCE
 - SMER TOKA KRVI



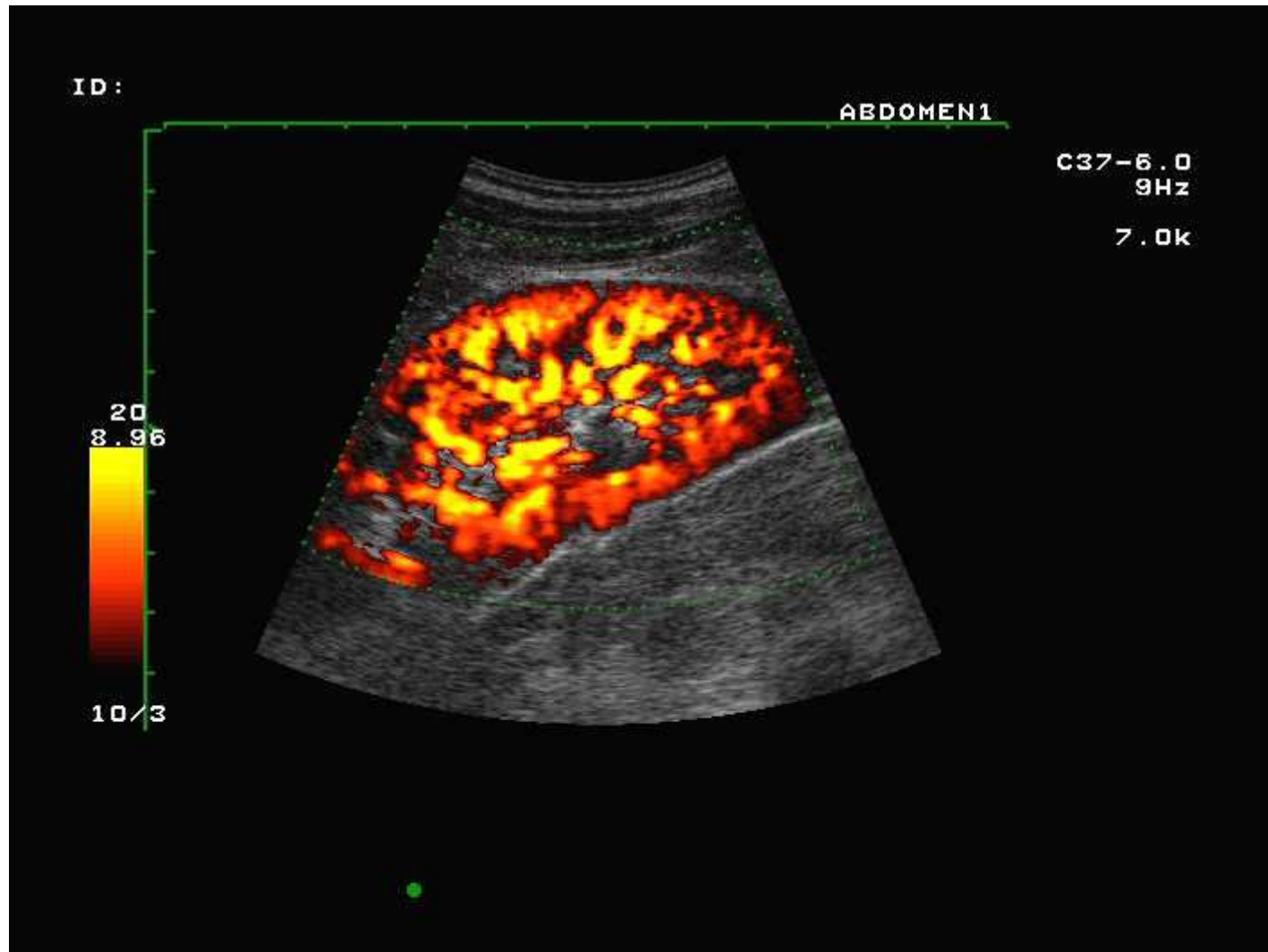
BARVNI DOPLER



KODIRANJE PRETOKA Z BARVNIM DOPLERJEM



ENERGIJSKI DOPLER

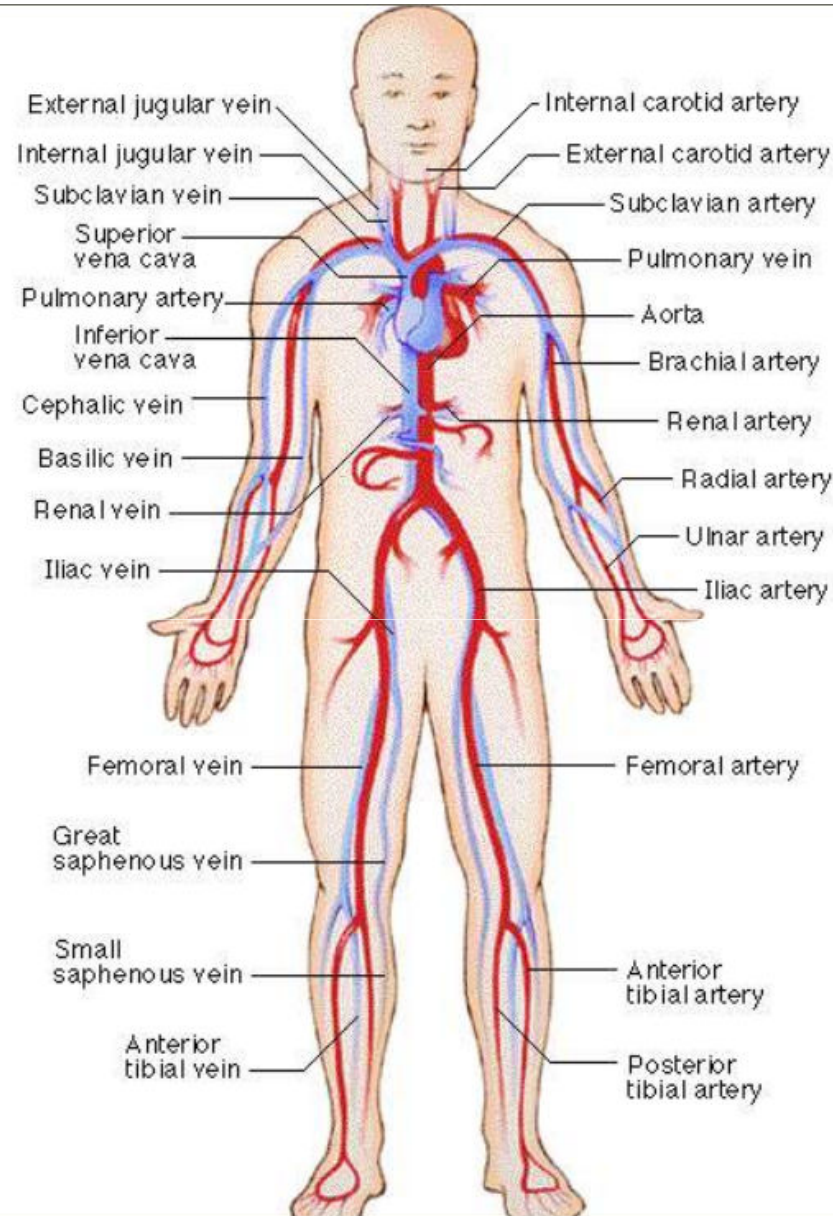




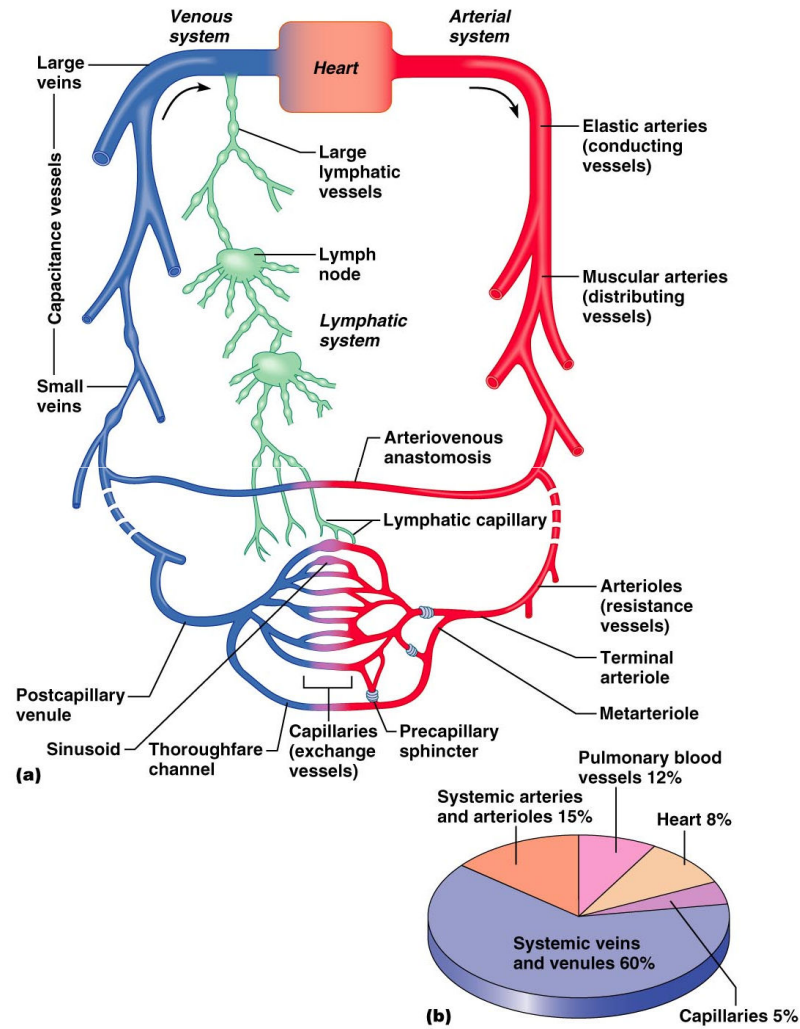
ULTRAZVOK ARTERIJSKEGA OŽILJA



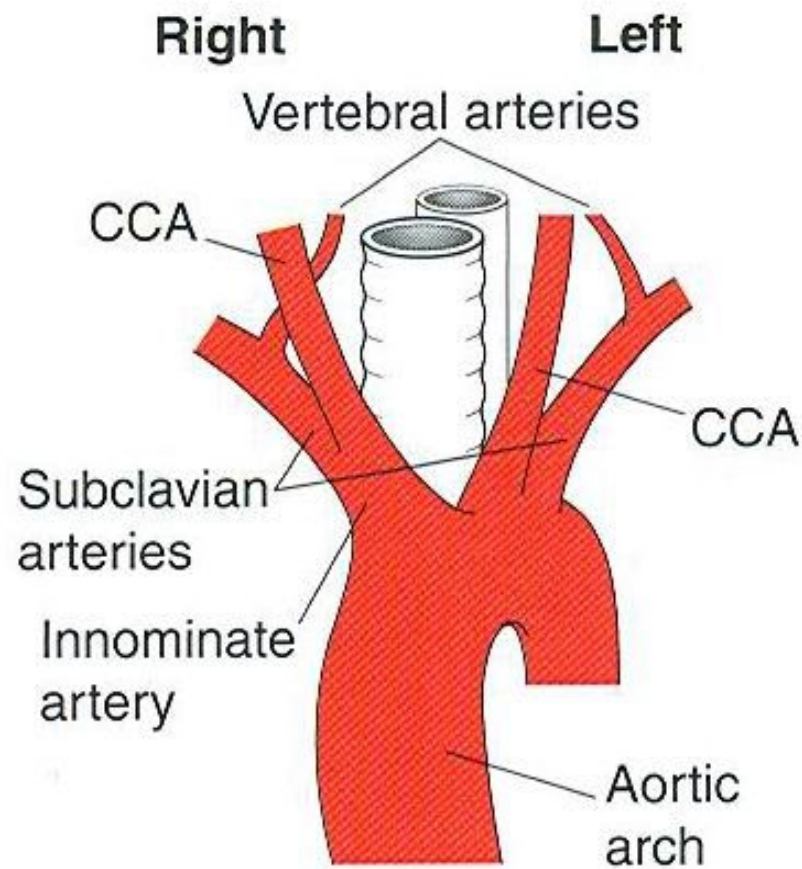
CIRKULACIJA V TELESU



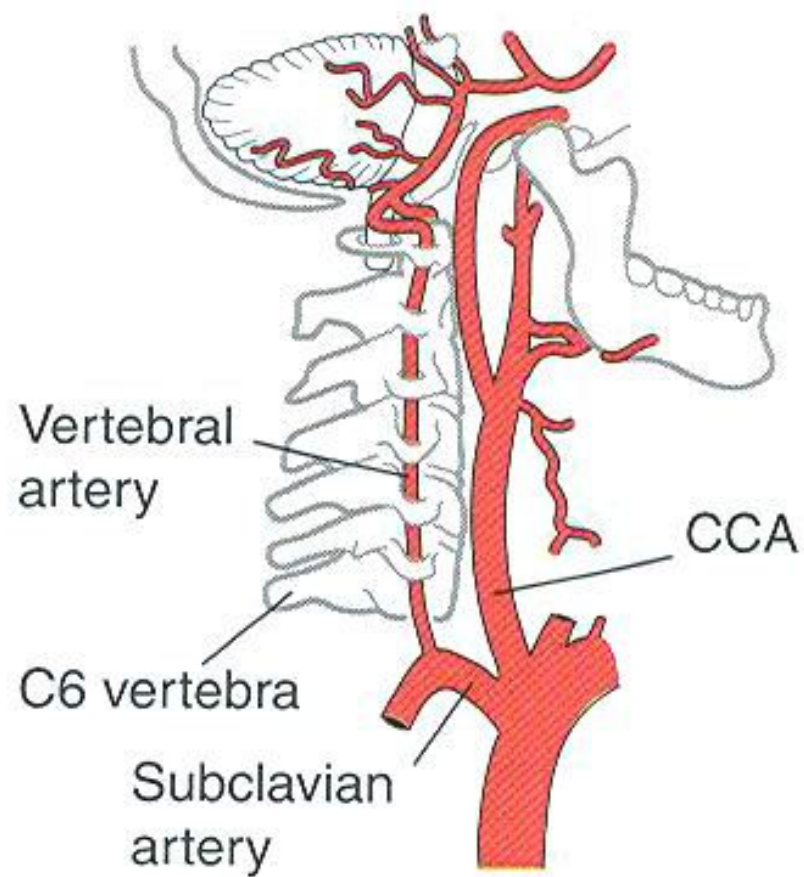
KOMPONENTE OŽILJA



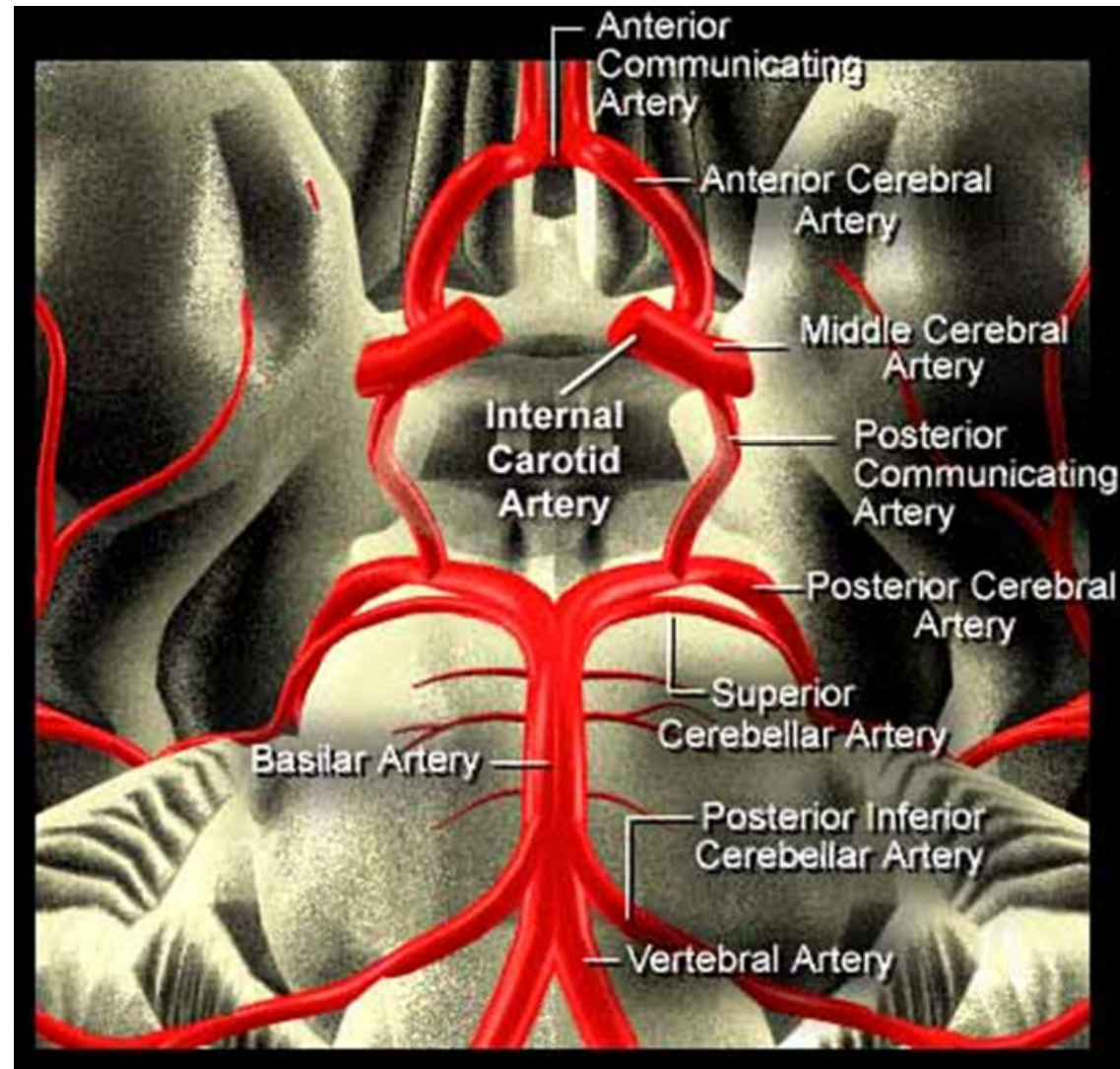
AORTNI LOK IN IZTOPIŠČA



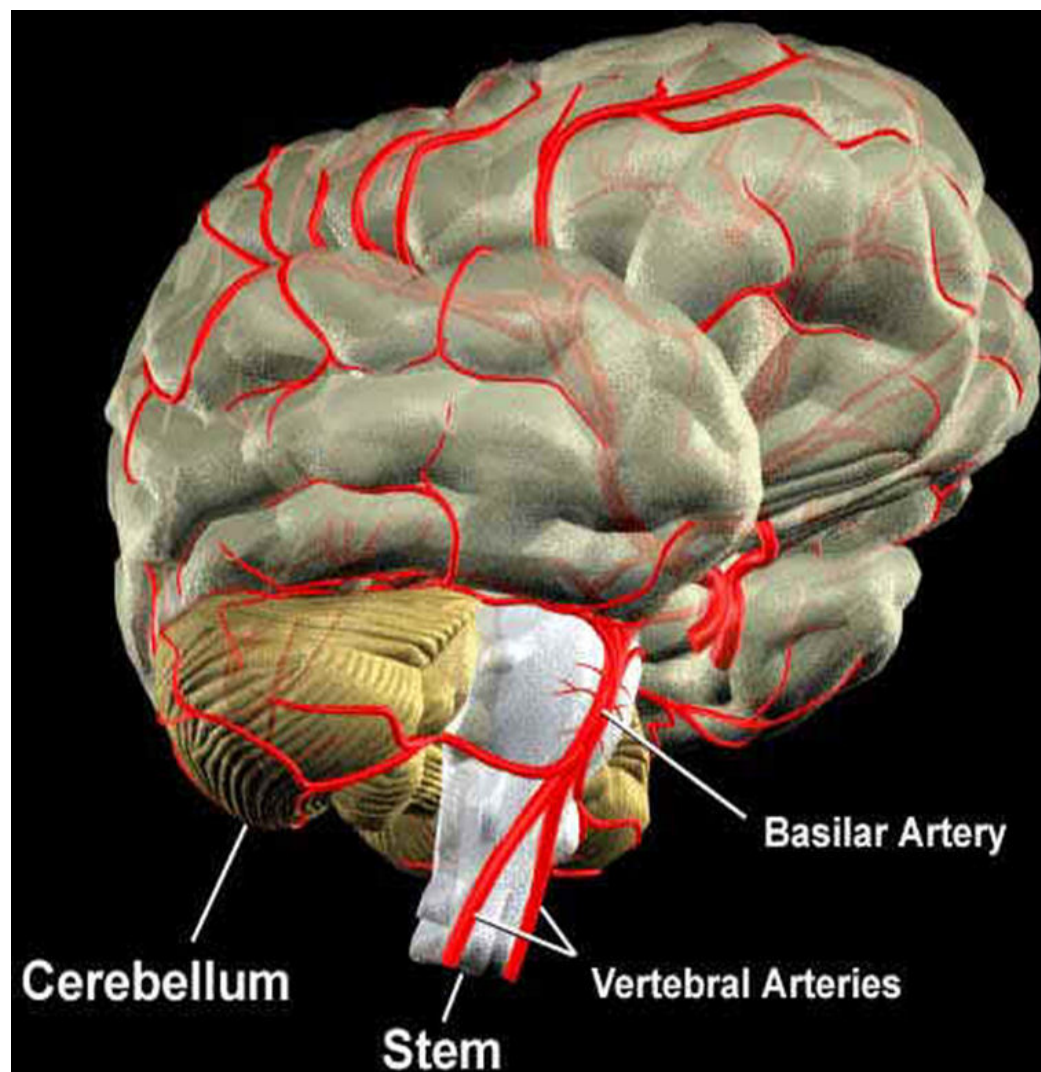
KAROTIDNA IN VERTEBRALNA ARTERIJA



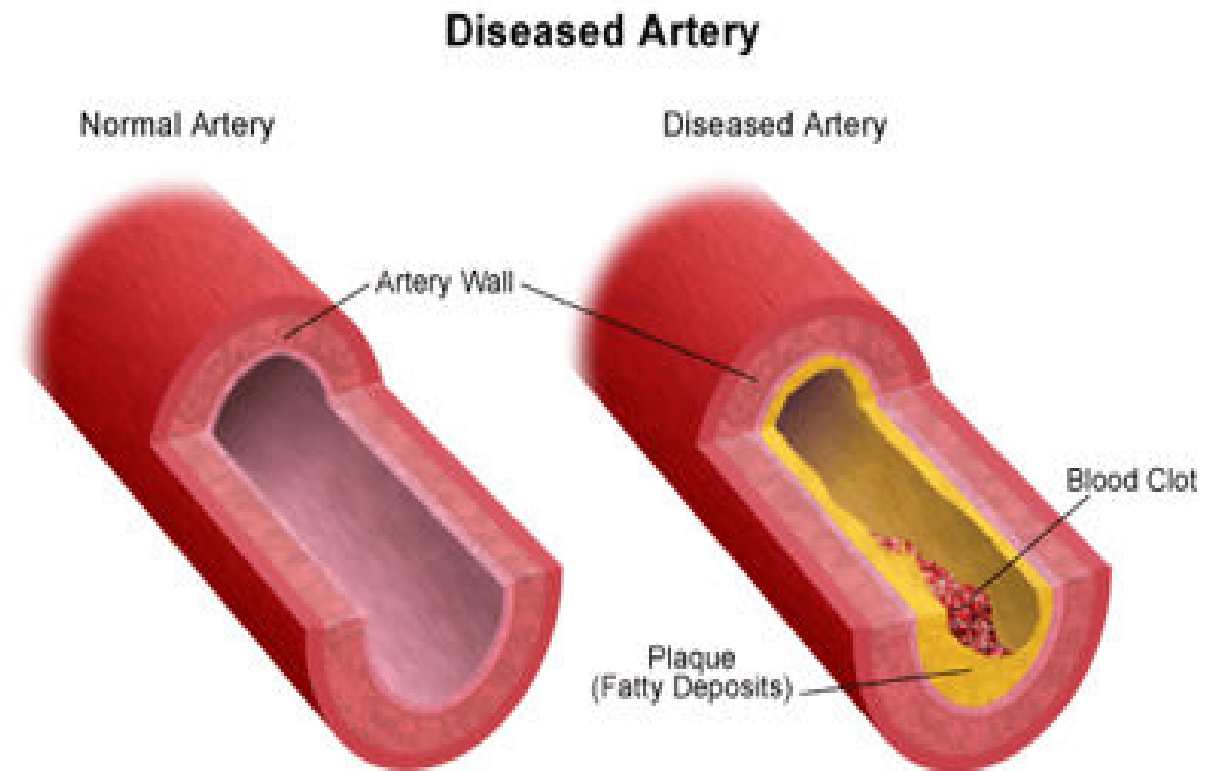
INTRAKRANIALNE ARTERIJE



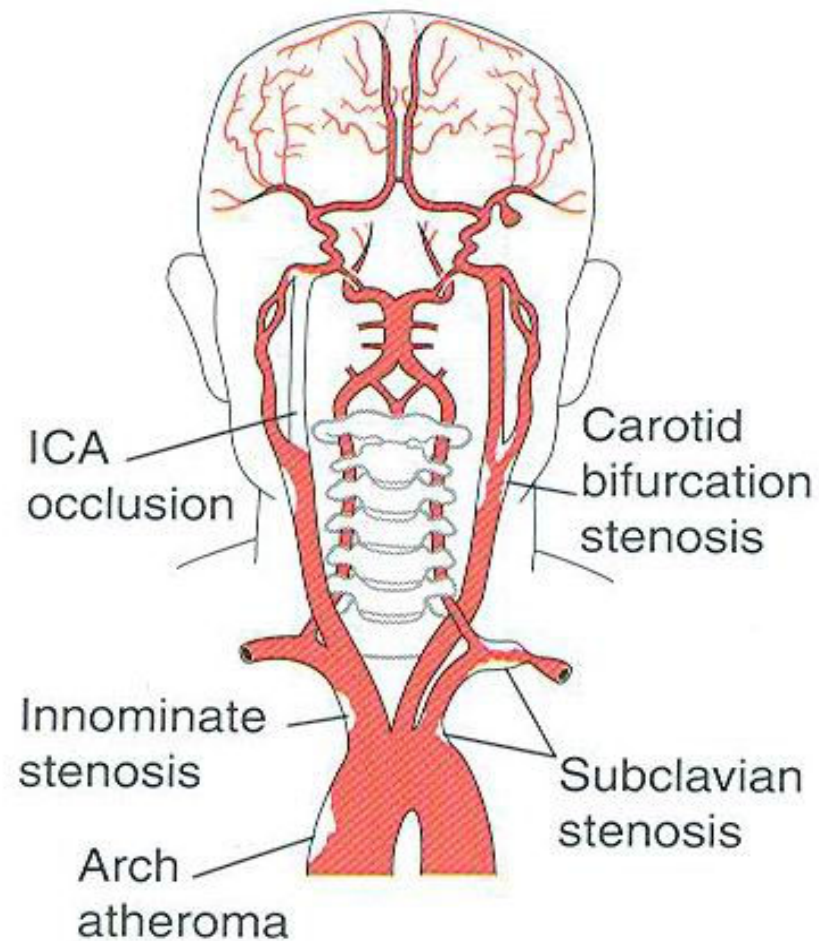
INTRAKRANIALNE ARTERIJE



ATEROSKLEROZA



PATOLOGIJA VRATNIH IN MOŽGANSKIH ARTERIJ



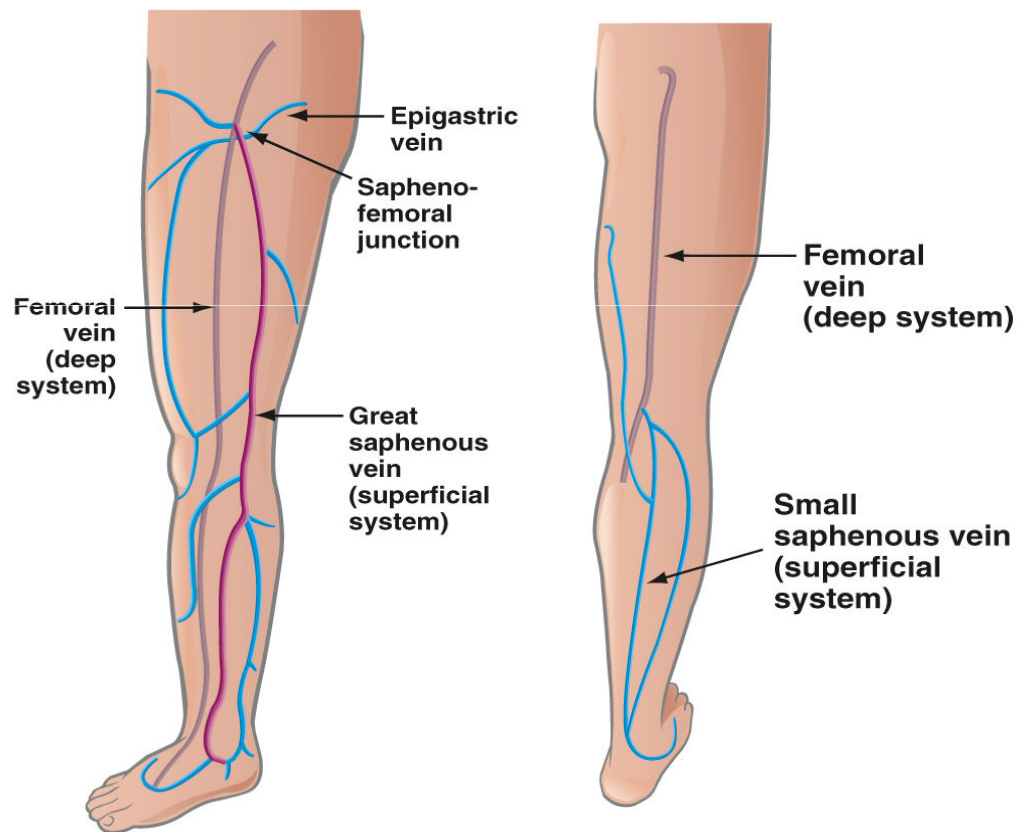
OCENJEVANJE ZOŽITVE /OKLUZIJE ACI

Stepen stenozе %	ACI PSV cm/s	Plak dijametar %	ACI EDV cm/s	PSV ACI/CCA cm/s
Normal	<125	0	<40	<2
<50	<125	<50	<40	<2
50-69	125-230	>50	40-100	2-4
>70	>230	>50	>100	>4
Subtotalna okl.	Varijabil.	>50	>0	Varijabilno
Totalna okluzija	0	>50	0	<1

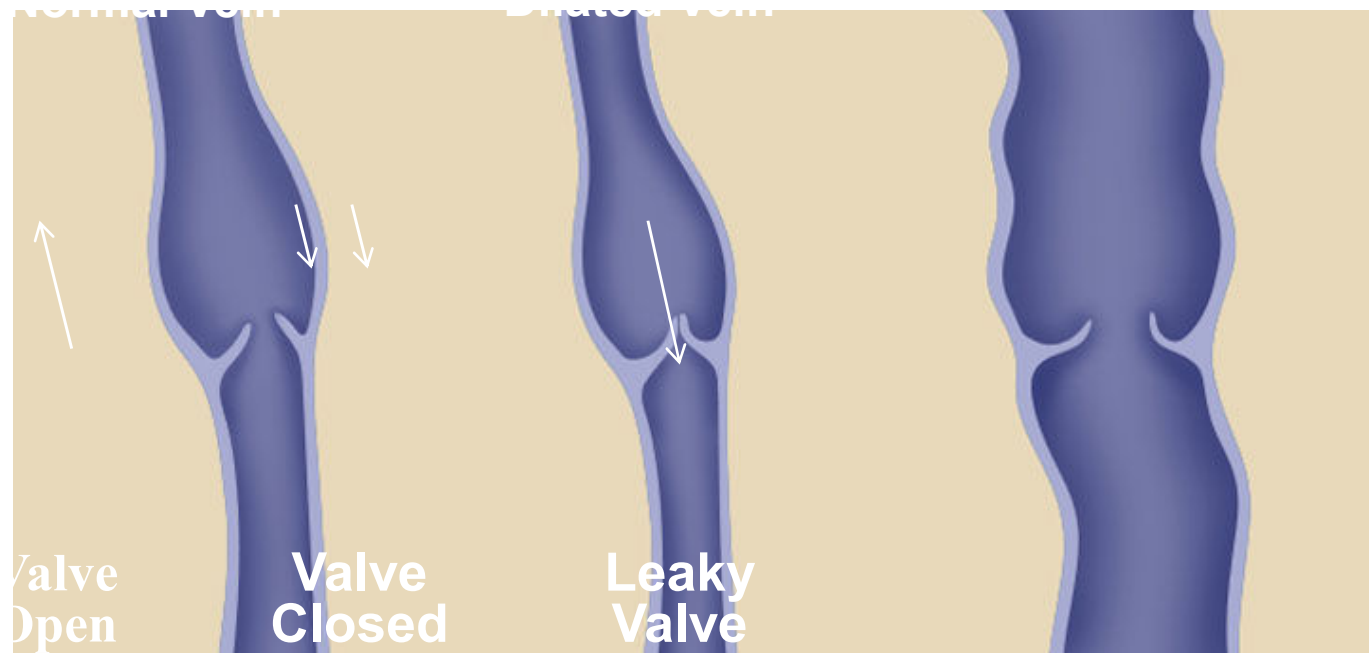


ULTRAZVOK VENSKEGA OŽILJA

ANATOMIJA VEN



VENSKI REFLUKS



REFLUKSNA BOLEZEN VEN



SIMPTOMI



Varicose Veins



Swelling



Skin Changes

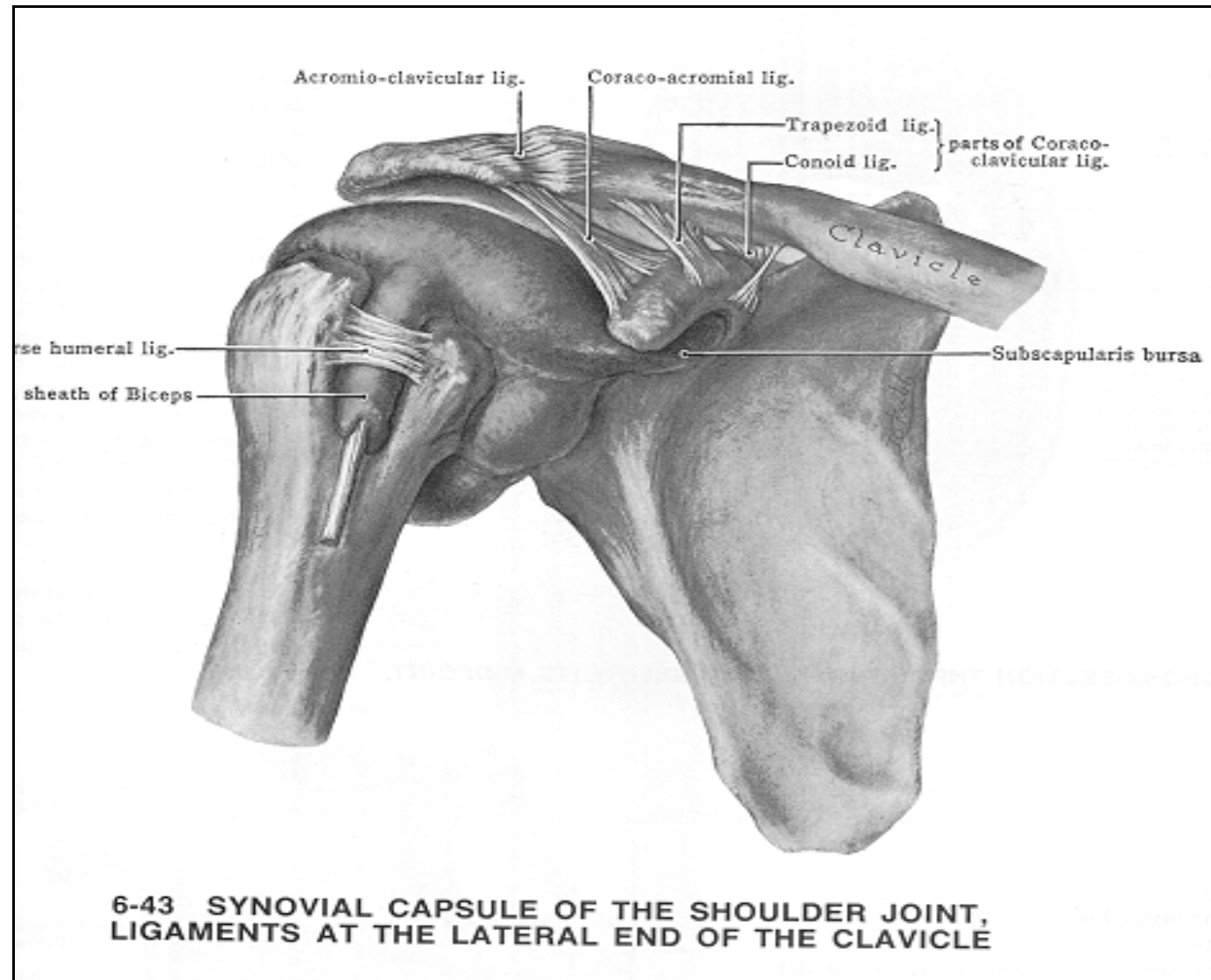


Ulcers



ULTRAZVOK MEHKIH TKIV SKLEPOV

RAMA

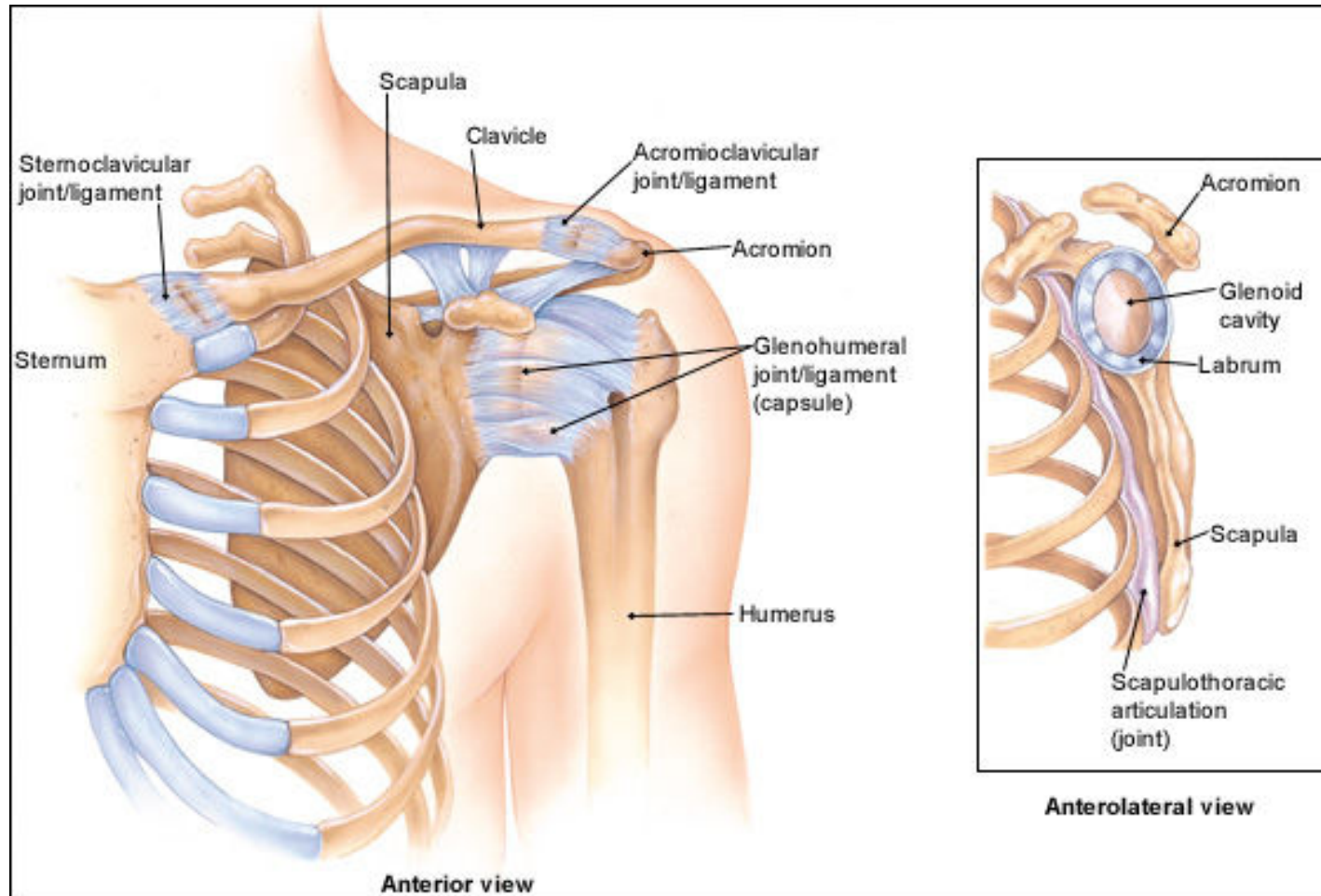


SKLEPI RAME

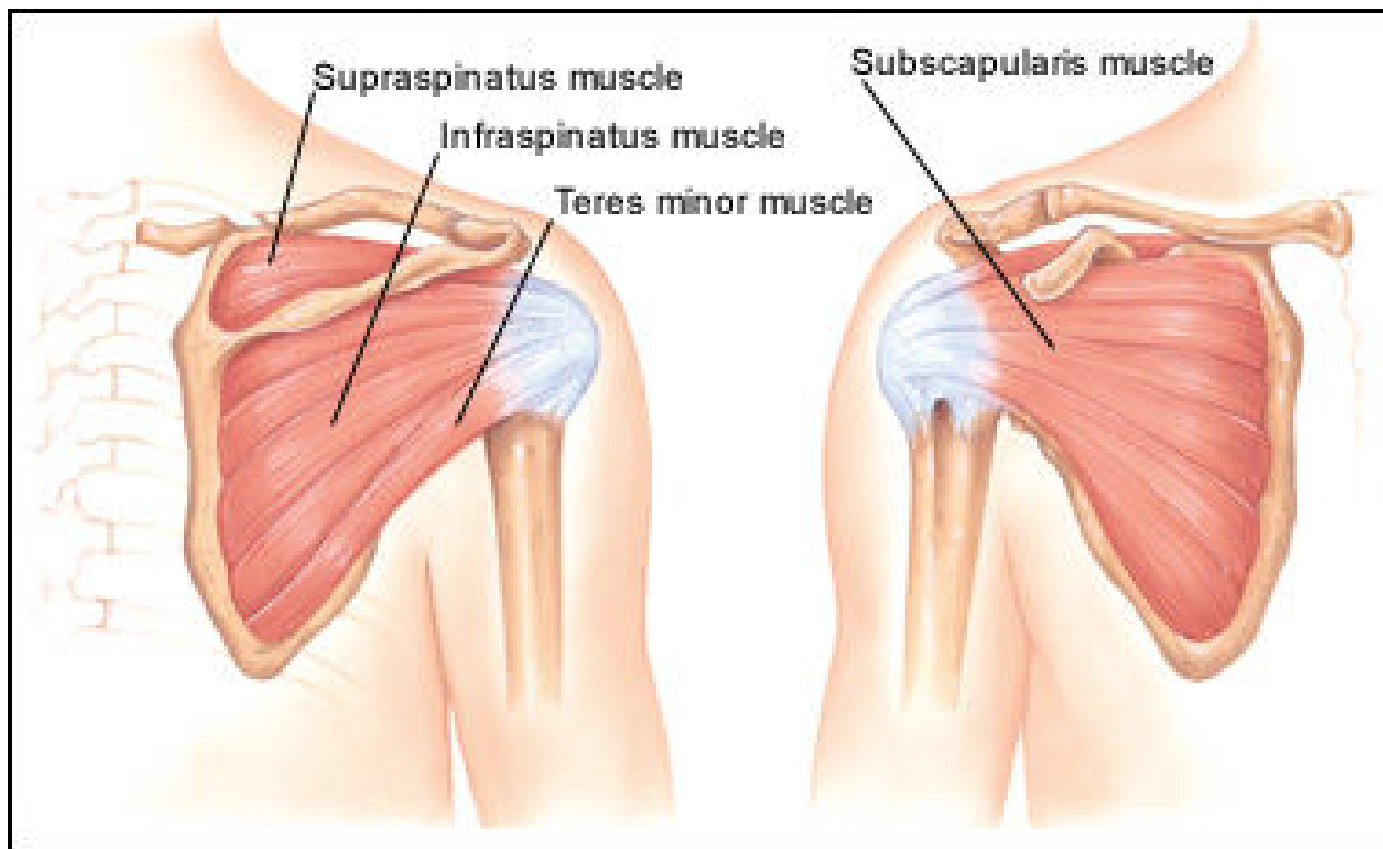
- AKROMIOKLAVIKULARNI
- GLENOHUMERALNI
- STERNOKLAVIKULARNI
- SKAPULOTORAKALNI



LIGAMENTARNE STRUKTURE RAMENA



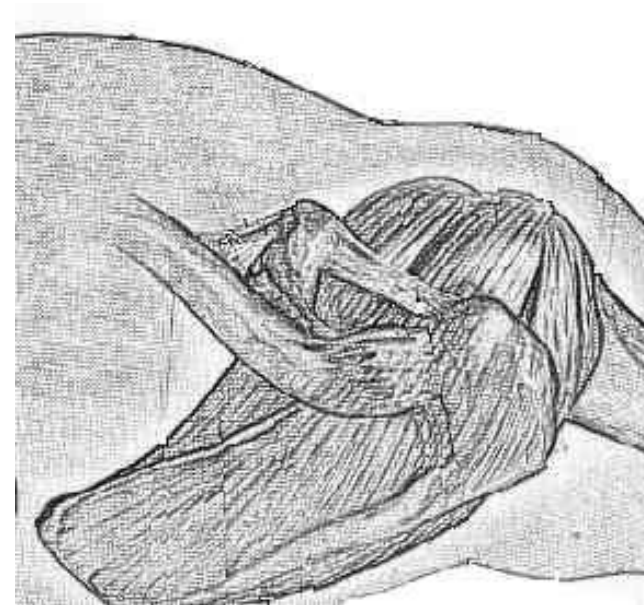
MIŠICE RAMENSKEGA OBROČA



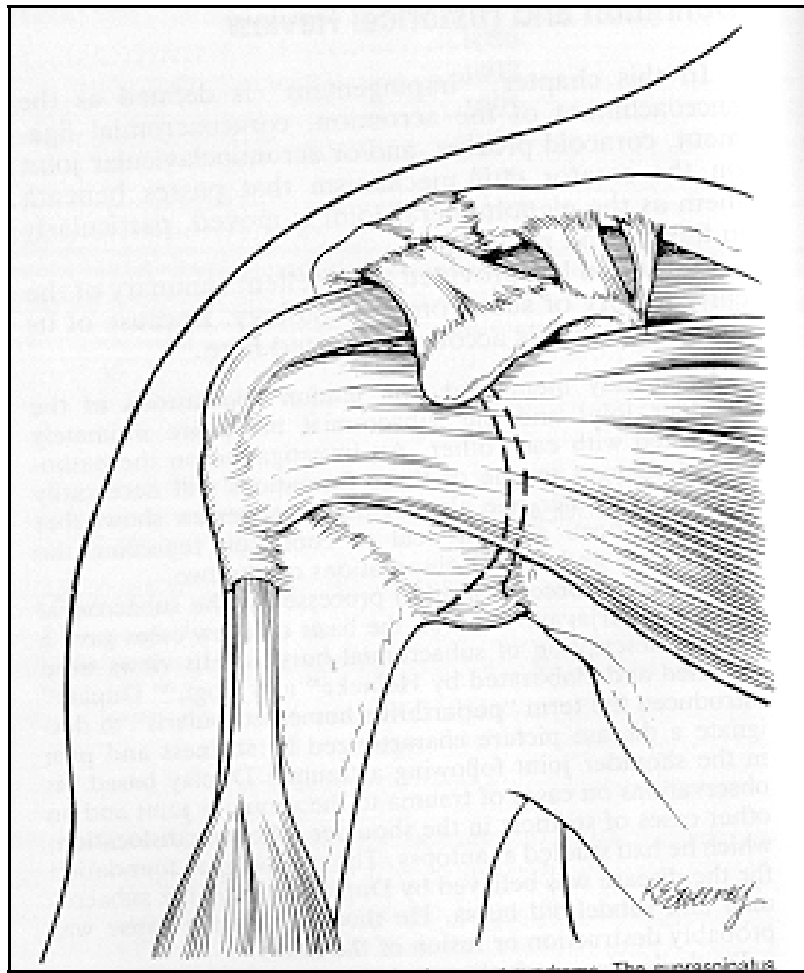
© 2000 Lydia Kibuk

ROTATORNA MANŠETA

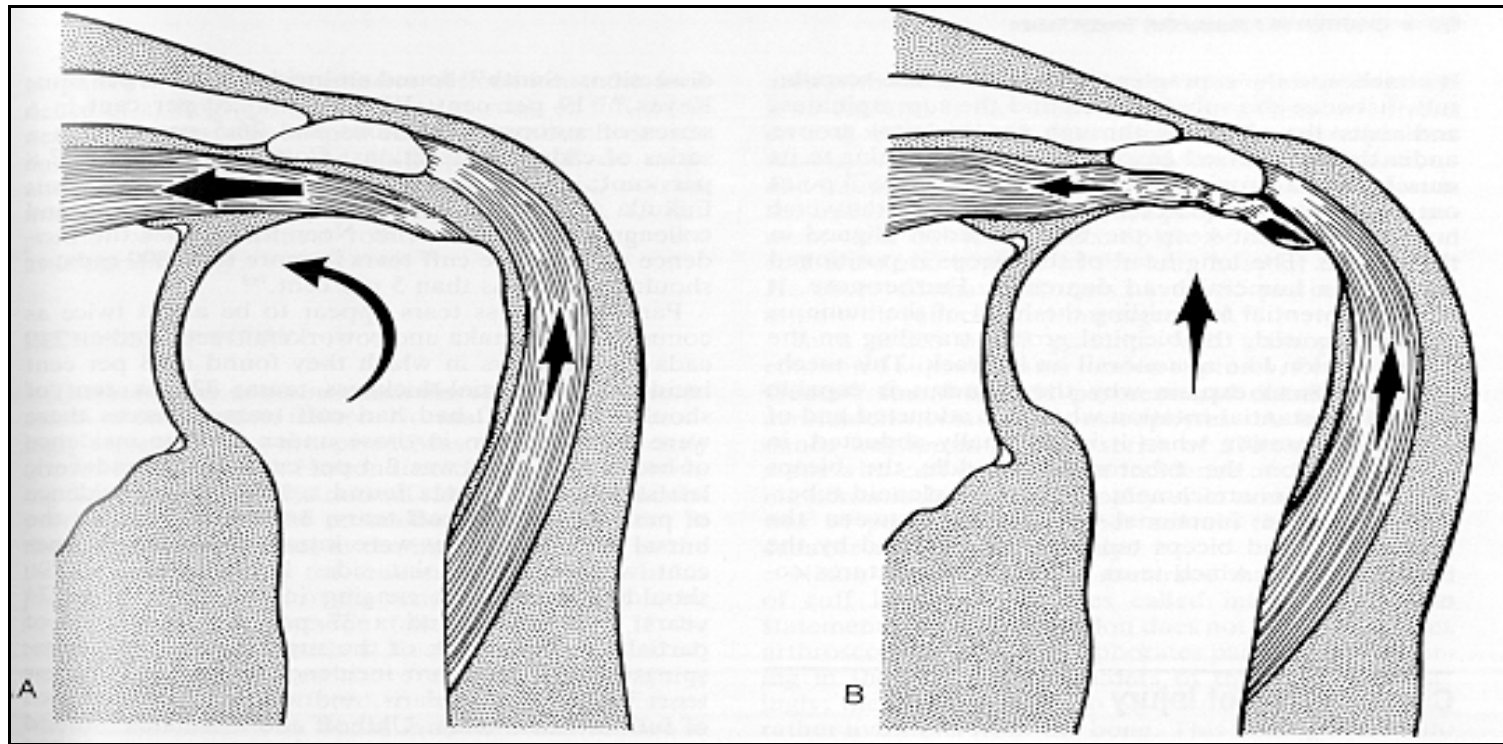
- Supraspinatus = abduktor
- Infraspinatus = zunanji rotator
- Teres minor = zunanji rotator
- Subskapularis = notranji rotator



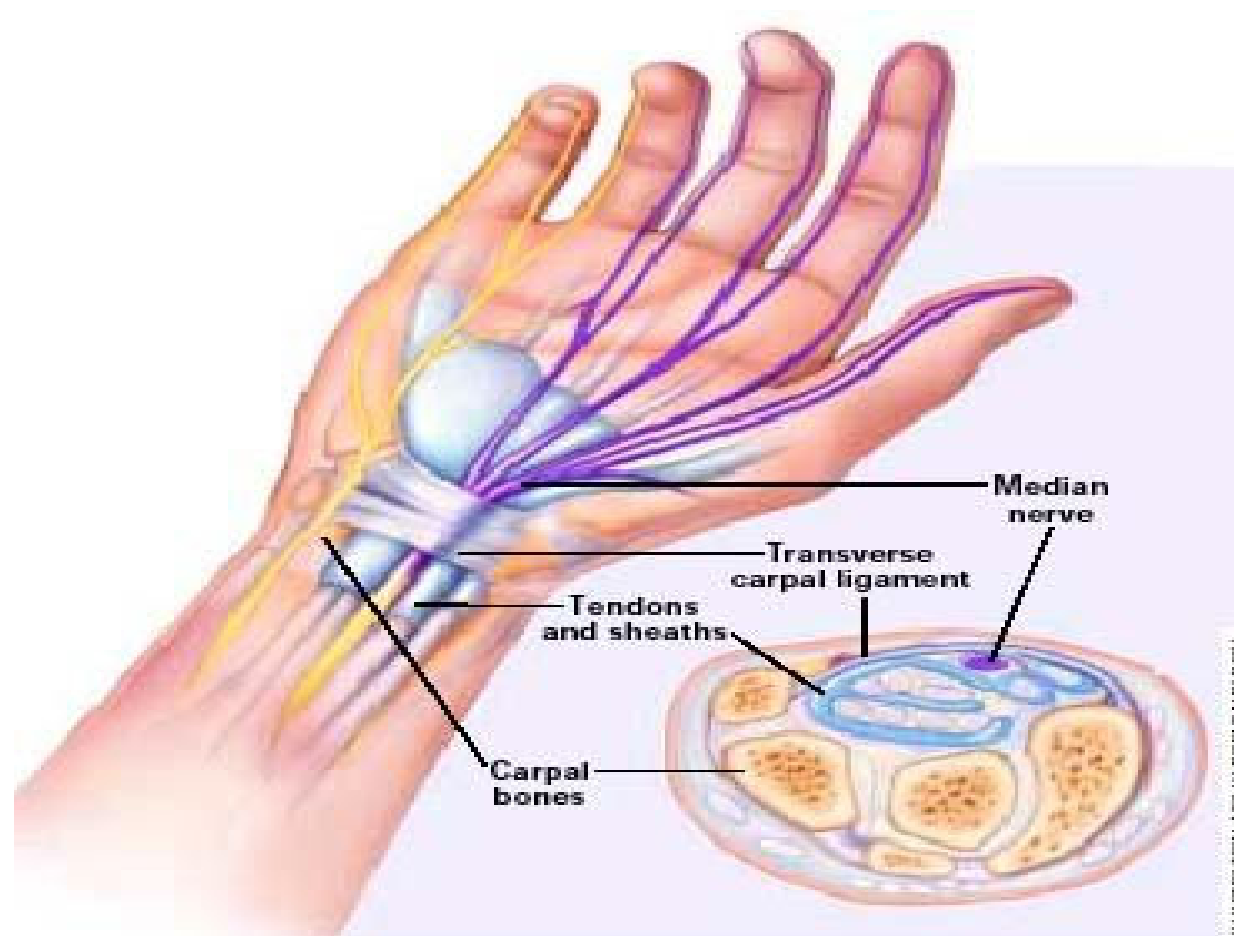
UTESNITEV



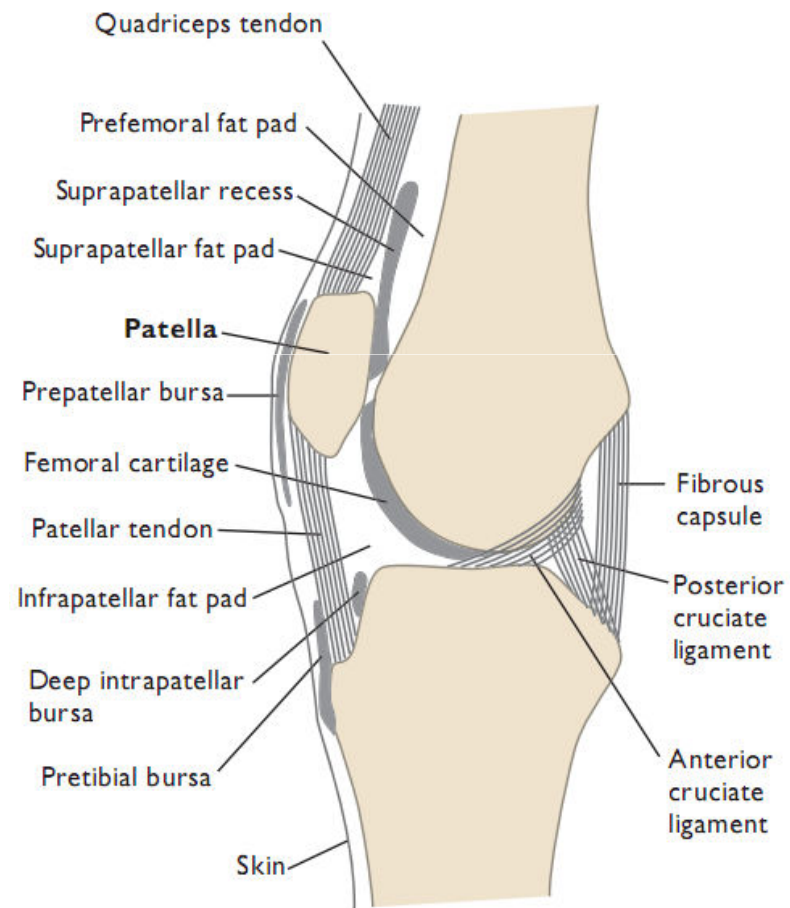
UTESNITEV TETIVE

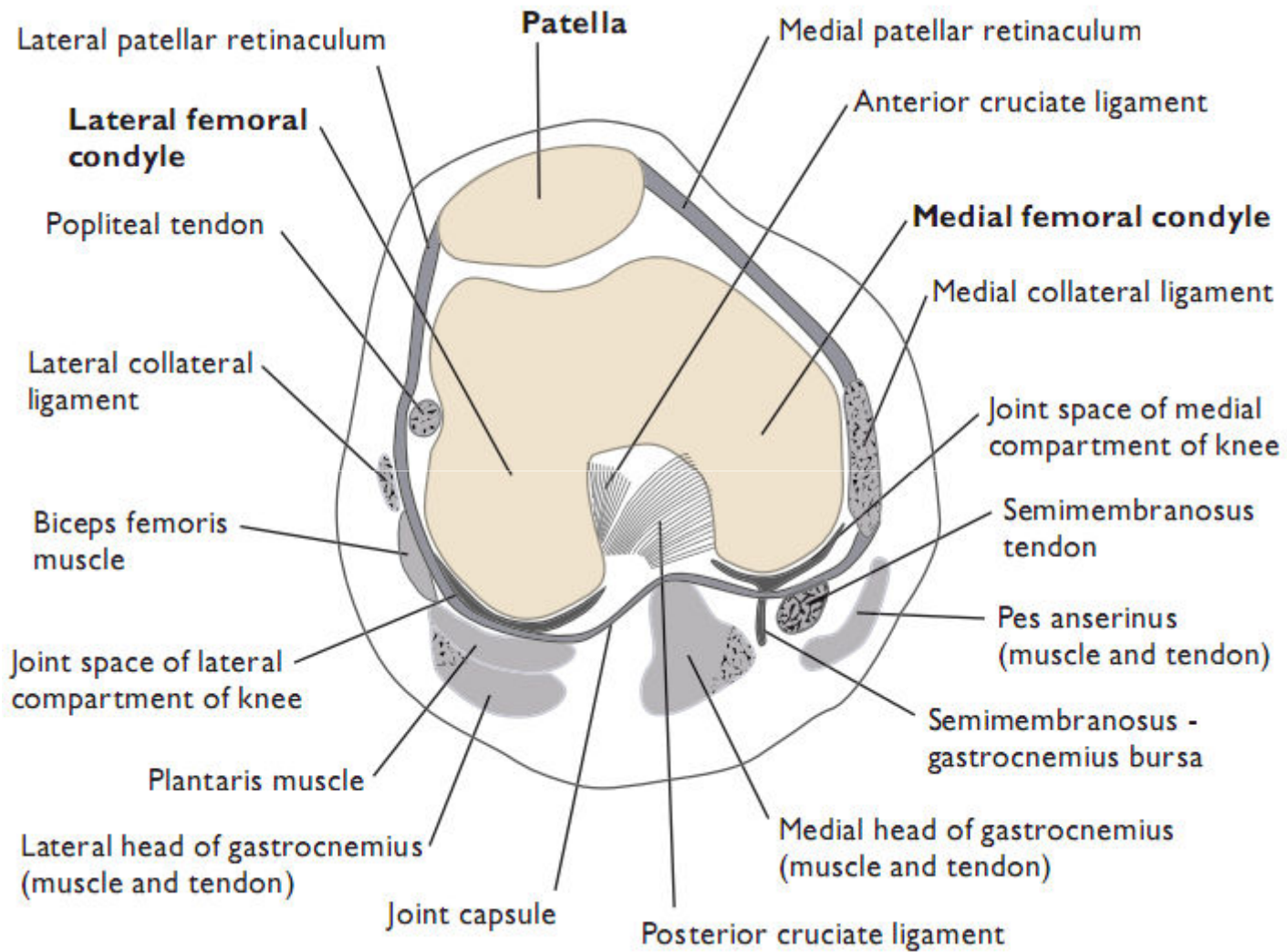


KARPALNI SINDROM

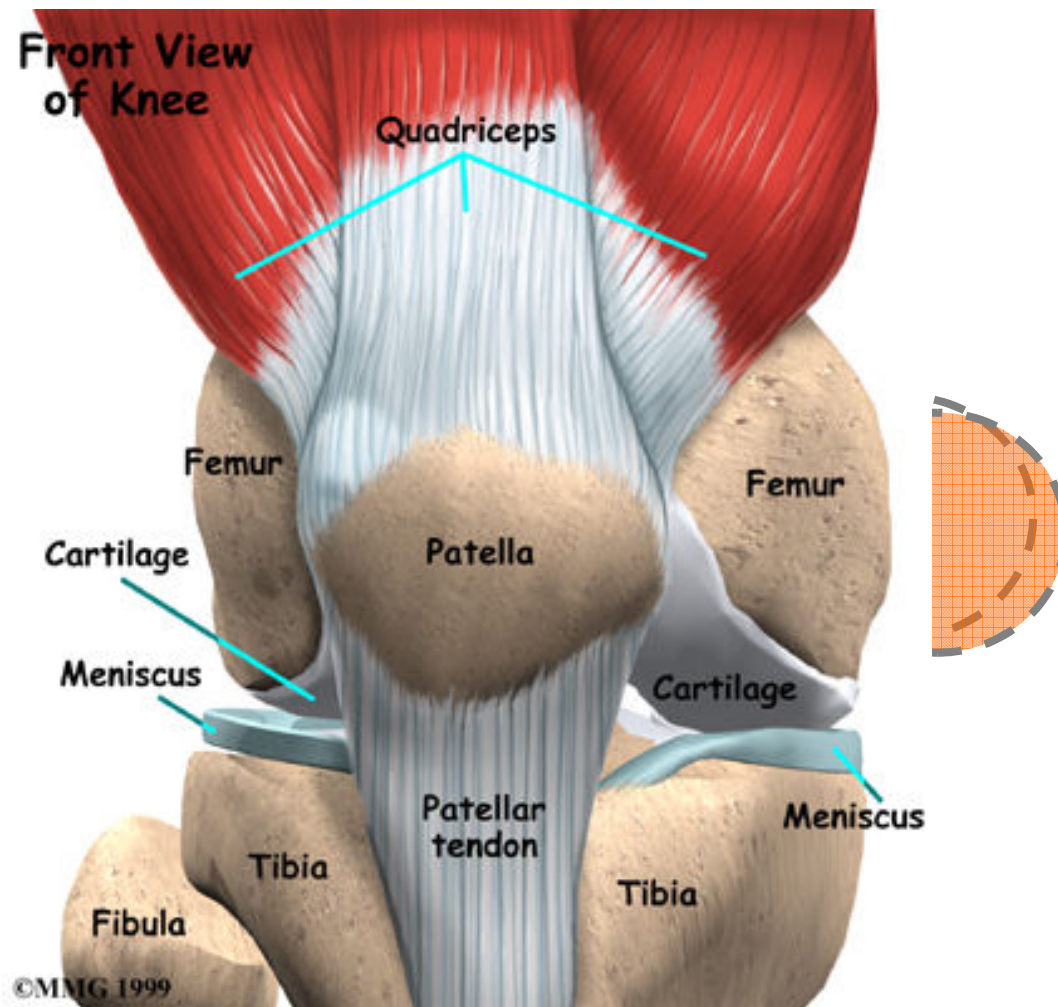


KOLENSKI SKLEP

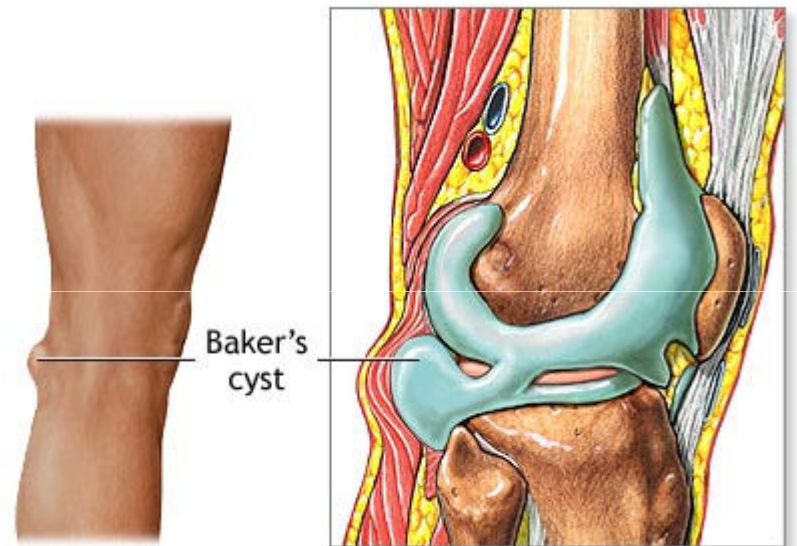




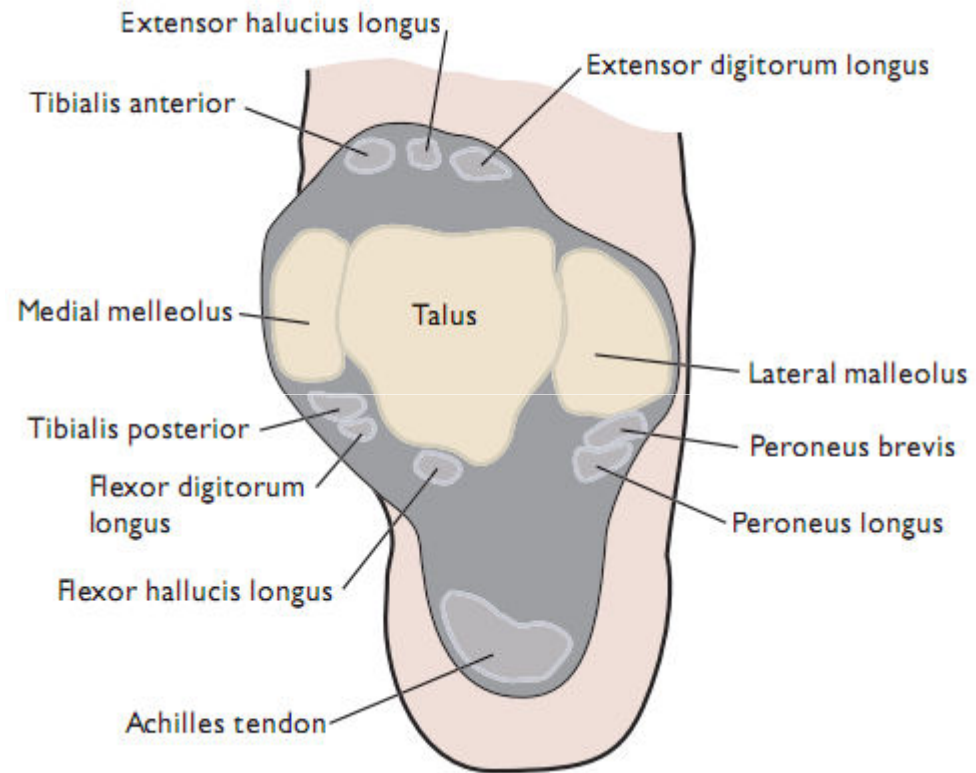
KOLENSKI SKLEP



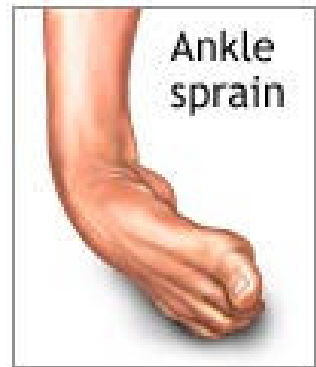
BAKERJEVA CISTA



ADAM.



GLEŽENJ



Swelling, inflammation,
and bruising of ankle

Damage to
ligaments
of the ankle



ADAM



HVALA ZA
POZORNOST