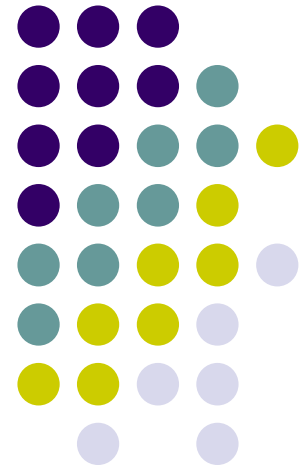


DEGENERATIVNA OBOLJENJA LOKOMOTORNOG APARATA

Branko Ristić

FMN Kragujevac

KC Kragujevac





Reumatična oboljenja

su bolesti lokomotornog sistema
(kostiju, zglobova, mišića i okolnih struktura),

- degenerativne,
- inflamatorne (infekcijske ili autoimmune) ili
- metabolične prirode,

koje često zahvataju i druge organe i organske sisteme



Medicinski i socijano - ekonomski značaj



- visoka učestalost (prvo mesto po učestalosti među hroničnim bolestima)
- hroničan i progresivan tok;
- uticaj na kvalitet života i radnu sposobnost





- **Procene broja obolelih za ceo svet**

● Low Back pain (krstobolja)	632.045 mil
● Bol u vratu	332.049 mil
● OA kolena	250.785 mil
● Druge muskuloskeletne bolesti	560.978 mil

- *(Lancet 15 December 2012)*



Najčešći pojedinačni uzroci invaliditeta

1990		2010		
Mean rank (95% UI)	Disorder	Disorder	Mean rank (95% UI)	% change (95% UI)
1-3 (1 to 3)	1 Low back pain	1 Low back pain	1-1 (1 to 2)	43 (34 to 53)
2-2 (1 to 3)	2 Major depressive disorder	2 Major depressive disorder	1-9 (1 to 3)	37 (25 to 50)
2-5 (1 to 3)	3 Iron-deficiency anaemia	3 Iron-deficiency anaemia	3-3 (2 to 6)	-1 (-3 to 2)
4-4 (4 to 7)	4 Neck pain	4 Neck pain	4-3 (3 to 7)	41 (28 to 55)
6-0 (4 to 8)	5 Other musculoskeletal disorders	5 COPD	5-8 (3 to 10)	46 (32 to 62)
6-1 (4 to 9)	6 COPD	6 Other musculoskeletal disorders	5-9 (4 to 8)	45 (38 to 51)
6-1 (4 to 9)	7 Anxiety disorders	7 Anxiety disorders	6-4 (4 to 9)	37 (25 to 50)
8-7 (6 to 15)	8 Migraine	8 Migraine	8-9 (6 to 15)	40 (31 to 51)
10-0 (7 to 14)	9 Falls	9 Diabetes	9-1 (6 to 13)	68 (56 to 81)
11-4 (8 to 16)	10 Diabetes	10 Falls	10-1 (7 to 14)	46 (30 to 64)
12-1 (8 to 17)	11 Drug use disorders	11 Osteoarthritis	12-3 (9 to 17)	64 (50 to 79)
12-2 (6 to 19)	12 Hearing loss	12 Drug use disorders	12-5 (9 to 16)	40 (27 to 54)
14-0 (9 to 19)	13 Asthma	13 Hearing loss	13-5 (7 to 20)	29 (22 to 36)
14-9 (10 to 21)	14 Alcohol use disorders	14 Asthma	15-3 (10 to 20)	28 (21 to 34)
15-0 (11 to 21)	15 Osteoarthritis	15 Alcohol use disorders	15-8 (12 to 21)	32 (16 to 50)
15-2 (11 to 20)	16 Road injury	16 Schizophrenia	16-0 (9 to 22)	48 (37 to 60)
17-1 (9 to 25)	17 Bipolar disorder	17 Road injury	16-1 (12 to 20)	30 (13 to 49)
17-1 (9 to 24)	18 Schizophrenia	18 Bipolar disorder	16-6 (9 to 23)	41 (31 to 51)
19-5 (12 to 27)	19 Dysthymia	19 Dysthymia	18-6 (13 to 26)	41 (34 to 48)
19-8 (13 to 25)	20 Diarrhoea	20 Epilepsy	21-8 (18 to 27)	36 (27 to 47)
22-2 (13 to 35)	21 Eczema	21 Ischaemic heart disease	21-9 (17 to 29)	48 (40 to 57)
22-7 (19 to 28)	22 Epilepsy	22 Eczema	22-3 (16 to 35)	29 (19 to 39)
23-9 (18 to 32)	23 Tuberculosis	23 Diarrhoea	23-1 (19 to 28)	5 (-1 to 11)
24-5 (19 to 34)	24 Ischaemic heart disease	24 Alzheimer's disease	25-9 (21 to 33)	80 (71 to 88)
25-3 (21 to 33)	25 Neonatal encephalopathy*	25 BPH	26-3 (20 to 35)	84 (48 to 120)
	30 Alzheimer's disease	26 Tuberculosis		
	35 BPH	27 Neonatal encephalopathy*		

Ascending order in rank Descending order in rank

 Communicable, maternal, neonatal, and nutritional disorders
 Non-communicable diseases
 Injuries



ARTROZA

OSTEOARTROZA

osteoarthritis (USA)



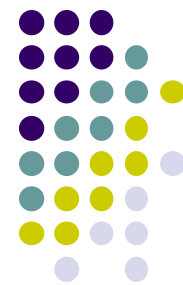
Artrozu karakterišu *neravnomeran gubitak zglobne hrskavice, osteoskleroza sa stvaranjem hipertrofičnih izdanaka na ivicama zglobnih tela i zadebljanje kapsule*

Klinički, stanje karakterišu *bolovi u zglobovima, ograničenje pokreta, krepitacije, povremeni izlivi i različiti stepen lokalne imflamacije*

Spondylosis; Coxarthrosis; Gonarthrosis; Arthrosis ...



Epidemiologija



- u oba pola, kod svih rasa i socijalnih slojeva
- preko 60% ljudi starijih od 35 godina imaju neki od reumatičnih simptoma koji variraju od povremenih bolova u LM aparatu do veoma teških deformiteta sa stalnim bolovima.
- Procenjuje se da u svetu 9,6% muškaraca i 18,0% žena starosti ≥ 60 godina boluje od simptomatske osteoartroze





- RTG: 85% ispitanika ima promene u dobi od 55-64 g.
- RTG: 10% ispitanika ima promene u dobi od 15-24 g.
- Radiografski studije (prevalenca)
 - populacija starosti ≥ 45 godina
 - Artroza kolena: 14,1% za muškarce i 22,8% za žene
 - Artroza kuka: 1,9% kod muškaraca i 2,3% kod žena



Epidemiologija



Radiographic changes (by joint) in osteoarthritis
(%/100 population)

Age (yr)	Hand	Foot	Knee	Hip
18-24	1.6	2.8		
25-34	3.4	7.0		
35-44	14.3	14.1	1.6	
45-54	36.4	23.9	3.0	
55-64	63.0	36.9	5.7	2.7
65-74	74.5	44.2	13.8	3.5



Etiologija



Primarne

- uzrok nije poznat
- dob; pol; hormoni; gojaznost; genetski faktori; klima; ishrana
- **osnova bolesti je dezintegracija hrskavice**, zbog koje nastaju koštane promene, promena f-je zgloba i na kraju promena mehaničkih odnosa.



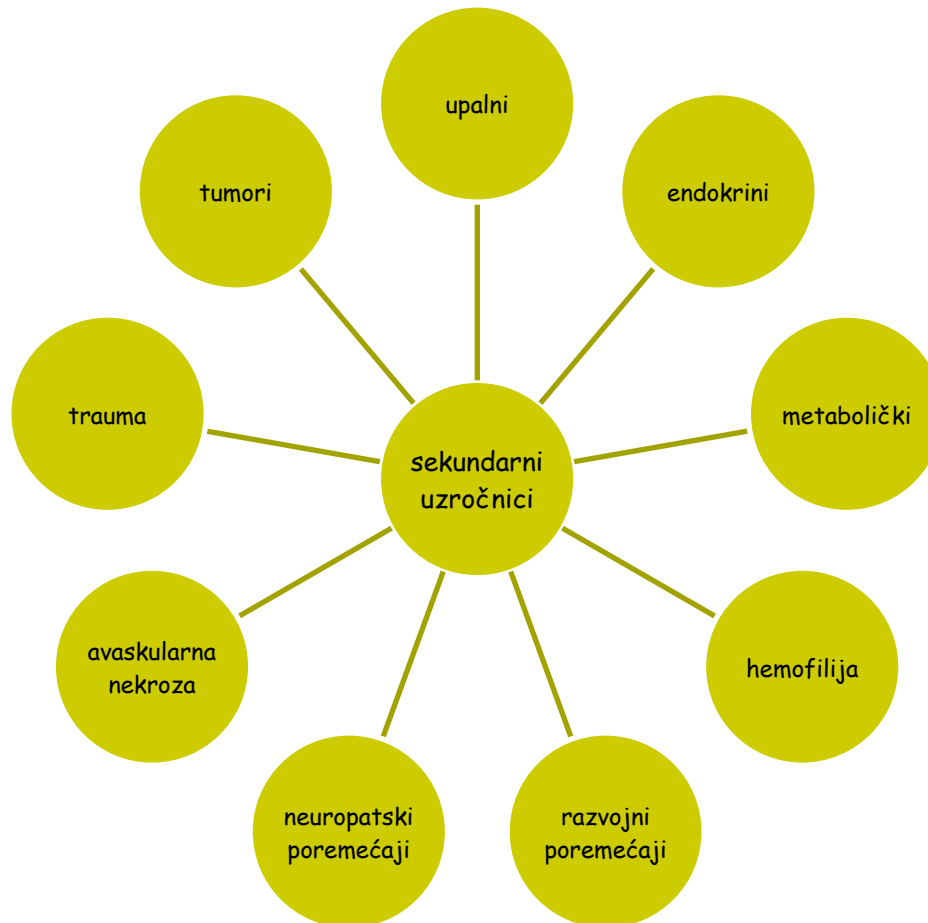
Etiologija



- starost: promene u sadržaju mukopolisaharida
- pol: pojedine artroze češće kod žena (Heberdenovi čvorići)
- fizički naponi
- gojaznost: kolena, ali i šaka i S-K zglobovi
- geni: Heberdenovi čvorići
- klima: nije u uzročnoj vezi sa artrozom, mada hladna i vlažna klima provocira tegobe



Etiologija - sekundarne artroze





Patoanatomija

- primarno na hrskavici, a potom i na kostima i okolnom mekom tkivu
- **fissure** i ljuštenje hrskavice;
- **eburnizacija** subhondralne kosti (skleroza; otvrdnuće)
- **ciste** u subhondralnoj kosti
- **osteofiti** na mestu gde se dodiruju sinovija i hrskavica
- **promene na kapsuli, ligg. i mm.**

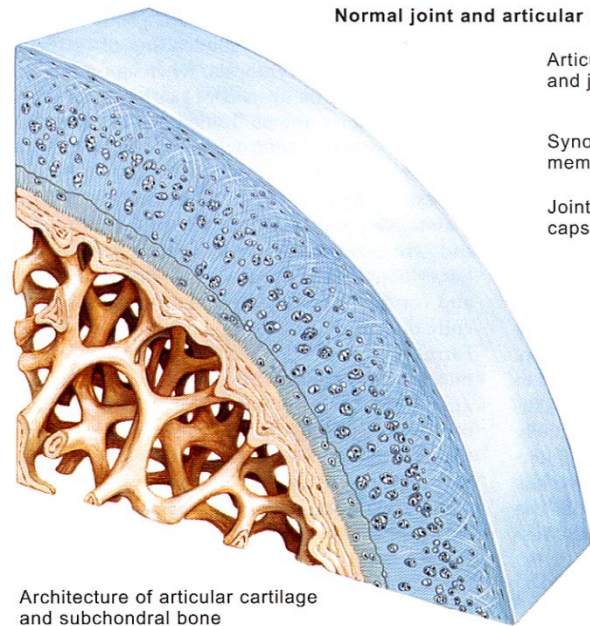


Patoanatomija



Joint and Articular Changes

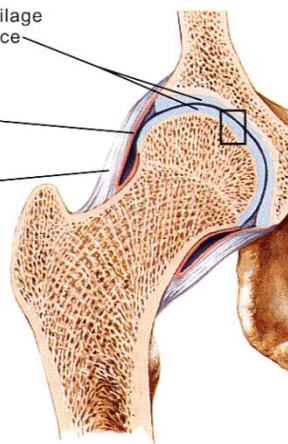
Normal joint and articular surface



Articular cartilage
and joint space

Synovial
membrane

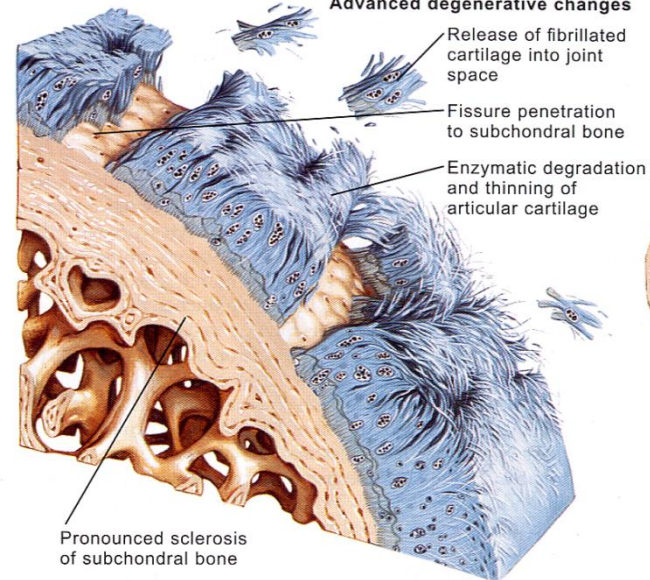
Joint
capsule



Joint with normal space and
cartilage-covered articular
surfaces

Joint and Articular Changes (continued)

Advanced degenerative changes



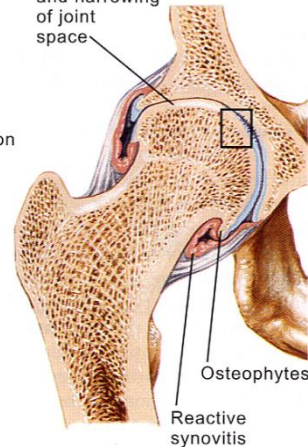
Release of fibrillated
cartilage into joint
space

Fissure penetration
to subchondral bone

Enzymatic degradation
and thinning of
articular cartilage

Pronounced sclerosis
of subchondral bone

Loss of cartilage
and narrowing
of joint
space



Osteophytes

Reactive
synovitis

Marked narrowing of joint space
with local loss of articular
cartilage, osteophyte formation,
and bone remodeling





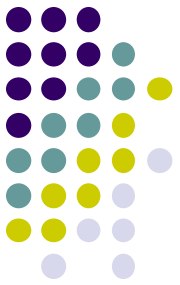
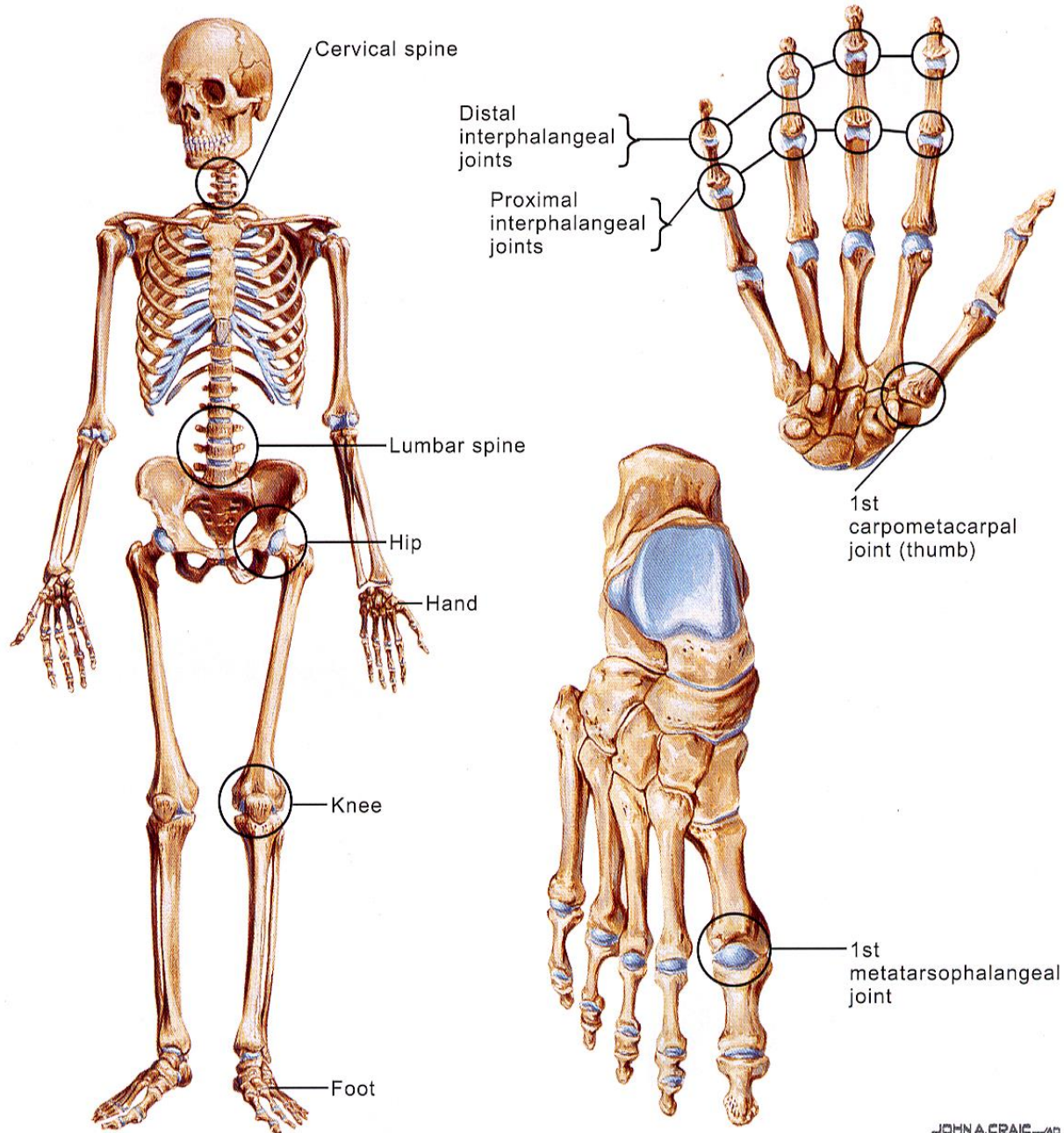
Primarna artroza

se najčešće javlja :

- DIP; koleno; kuk; slabinska i vratna kičma; MTP; PIP; CMC palca
- Znatno ređe : TM, zglobovi ramena, kostovertebralni
- Skočni zglob veoma retko, osim kao sekundarna artroza.



Distribution of Joint Involvement





Kliničke manifestacije

- bol
- ukočenost (kontraktura)
- deformacija



BOL



je subjektivna, teško definišuća i objektivno nemerljiva kategorija

Reumatska bol može biti artikularnog, periartikularnog, muskularnog ili neurogenog porekla.



Bol



- mehaničkog i vaskularnog porekla obično se javlja pri pokretima,
- stalno prisutna bol sugerije inflamatornu etiologiju.
- koji se pojačava noću i prilikom odmora ide u prilog tumorske, zapaljenjske ili neuropatske etiologije.
- nezavisna od položaja i stepena aktivnosti, koji ne reaguje na terapiju sugerije psihičko poreklo.





Reumatska bol

- *Duboka, najčešće tupa, nejasno lokalizovana, praćena osećajem gnječenja i obamrlosti.*
- *Bol može pogoršati promena vremena ili pojačano opterećenje zgloba.*
- *U odmaklim stadijumima bol je stalna i javlja se i u miru (noću)*



UKOČENOST

posle mirovanja, ne traje dugo (do 30 min), osećaj grebanja, škripanje (krepitacije).

Kontrakture nastaju usled mišićnog spazma, inkongruencije zglobnih površina, osteofita, fibroze mekih tkiva



DEFORMACIJA

*Osteofiti, fibroza kapsule,
izliv*

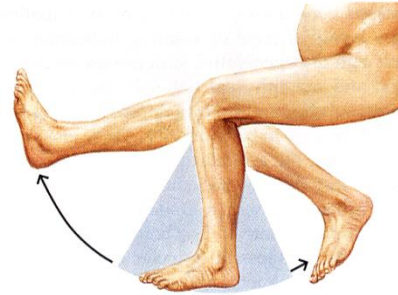
Nestabilnost



Clinical Findings



Joint pain and stiffness, particularly after period of rest

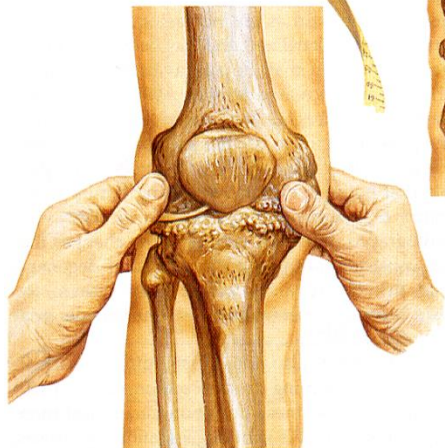


Limited range of motion in affected joint on both active and passive testing

JOHN A. CRAIG
C. Machado
© Ciba



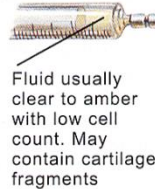
In severe cases, disuse leads to muscle atrophy



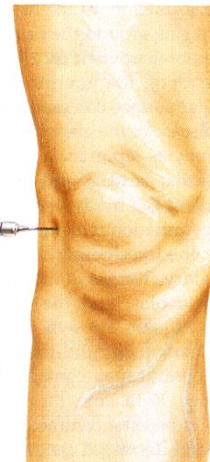
Joint palpation reveals osteophytes and crepitus (grinding sensation) on joint movement



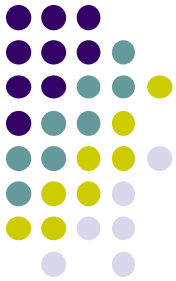
Osteophytes visible or palpable



Fluid usually clear to amber with low cell count. May contain cartilage fragments



Arthrocentesis most useful for ruling out other joint disorders



Heberdenovi i Bouchard-ovi nodusi



Istorija bolesti



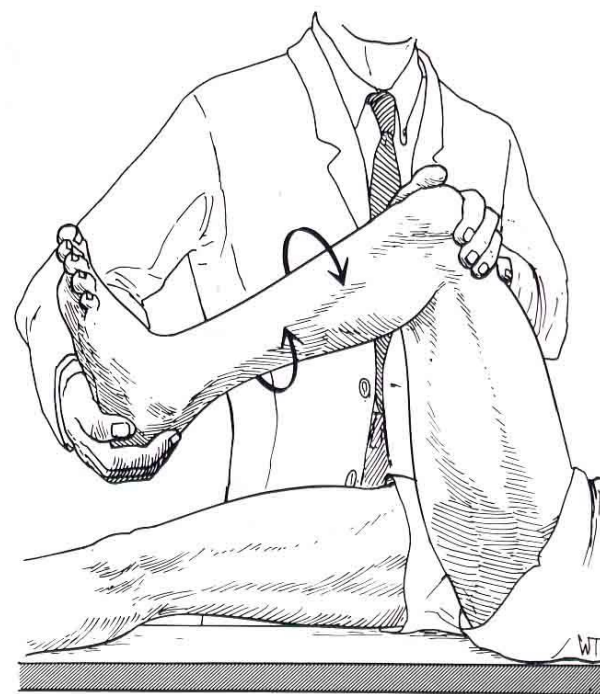
- utvrditi koliko simptomi utiču na dnevne aktivnosti i radnu sposobnost (tolerancija na bol, stepen fizičke aktivnosti, očekivanja ...)
- utvrditi opšte zdravstveno stanje, prethodne bolesti na zglobu, upotreba lekova (i narodnih)



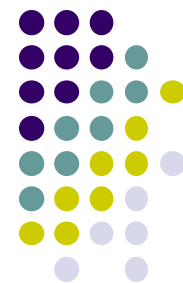
Fizikalni nalaz



- aktivna i pasivna pokretljivost zglobov
- kontrakture i stabilnost zglobov
- krepitacije, izliv, palpatorna osetljivost, mišićna atrofija



Klinička slika



- Simptomi kod *četrvtine* obolelih sa RTG znacima.
- Klinička slika kod primarne i sekundarne artroze se *ne razlikuje*
- Zglobovi su *asimetrično* zahvaćeni (za razliku od RA)



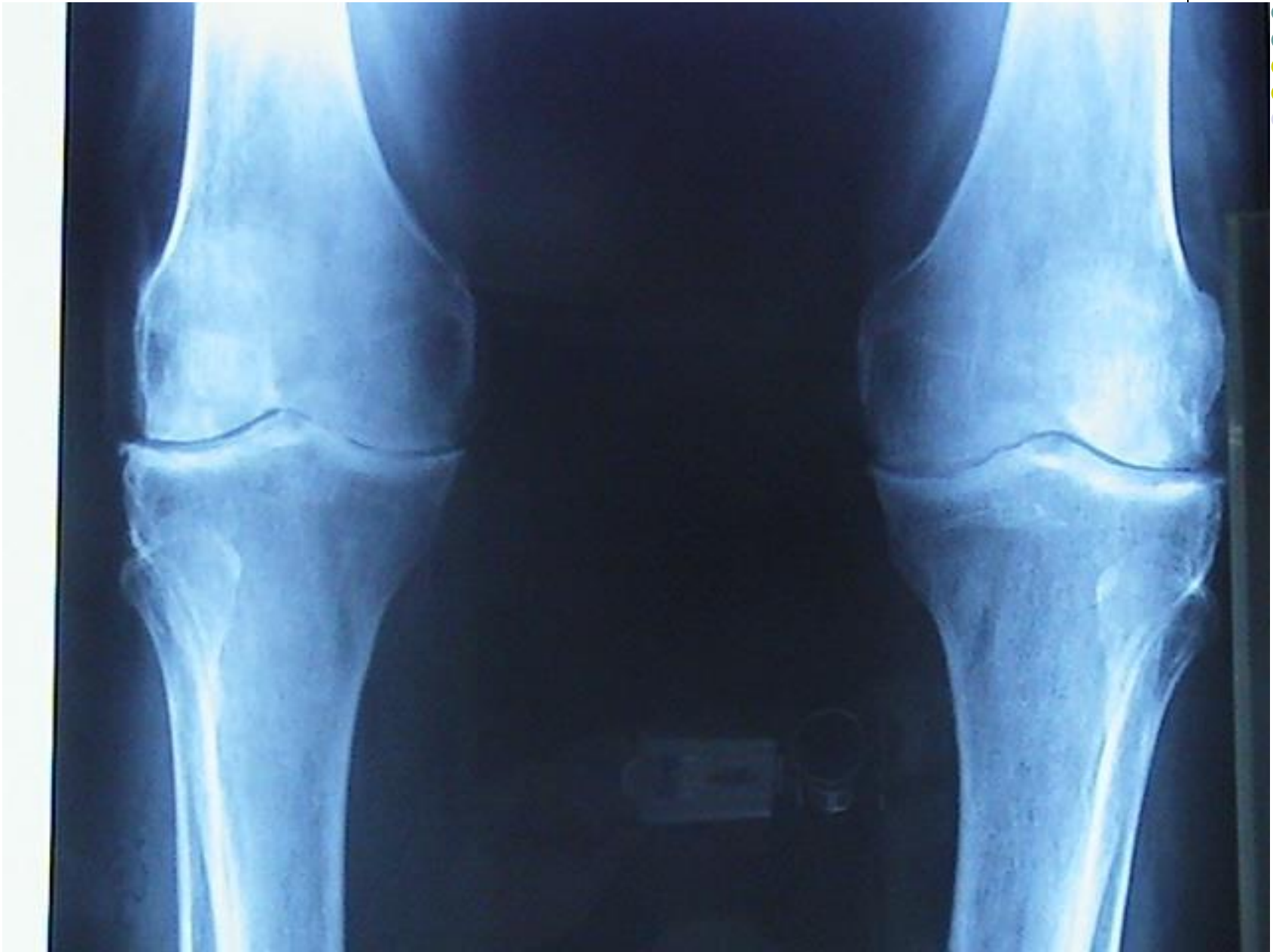


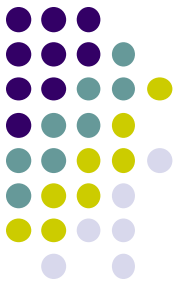
RTG

- suženje zglobne pukotine
- skleroza subhondralne kosti; subhondralne ciste
- osteofiti
- slobodna zglobna tela
- subluksacije, deformiteti u odmakloj fazi

Druge imaging studije - u određenim slučajevima









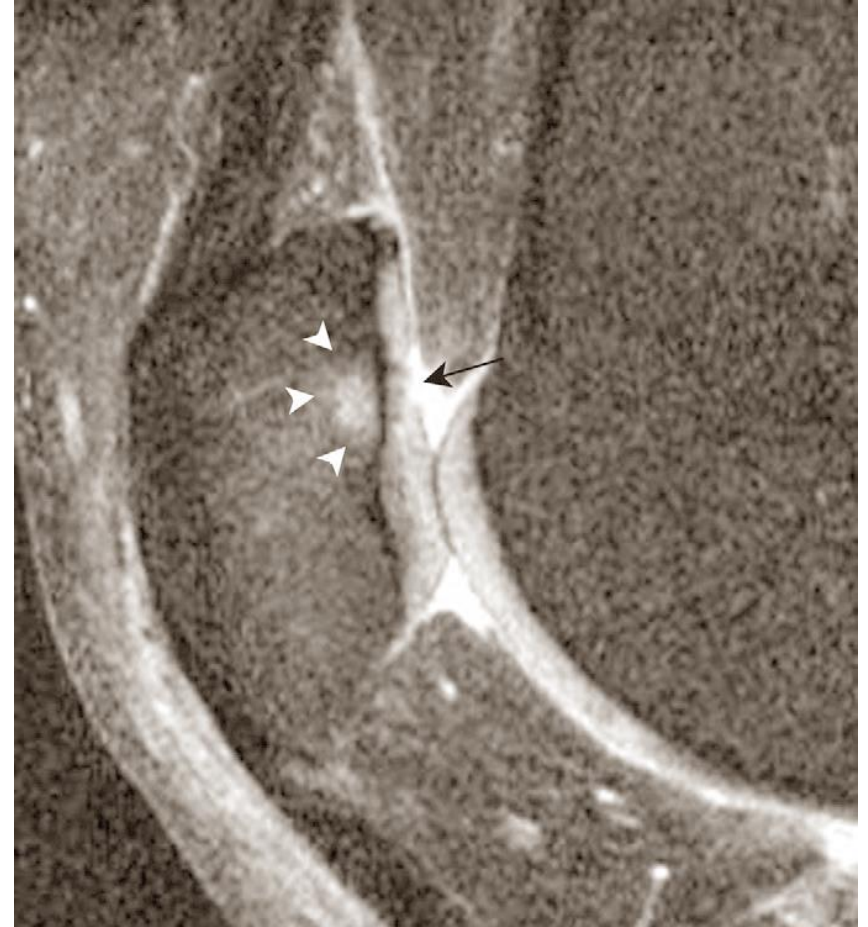
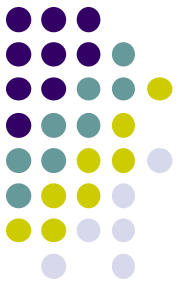


Kellgren-Lawrence

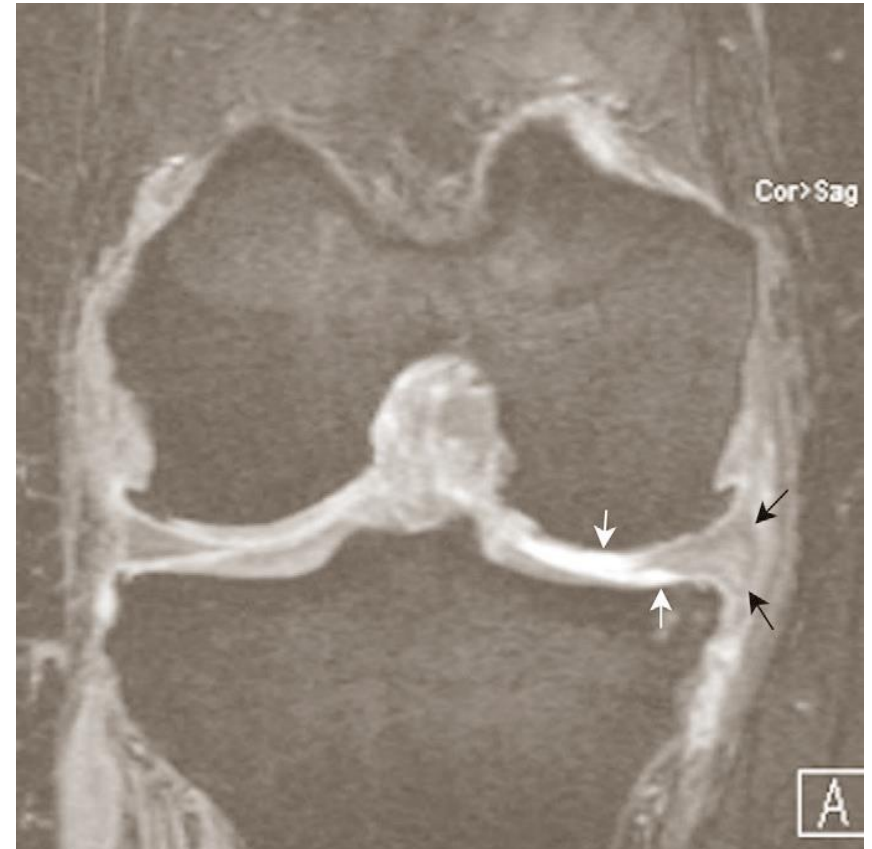
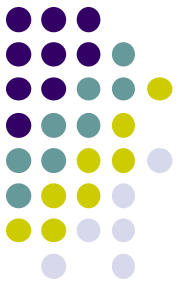
- Grade 0 Nema karakteristika osteoartroze
- Grade 1 Sumnja na suženje zglobnog prostora i mogući osteofiti
- Grade 2 Konkretni osteofiti i moguće suženje zglobnog prostora
- Grade 3 Više umereno izraženih osteofita, suženje zglobnog prostora i subhondralna skleroza i mogući deformitet koštanih krajeva
- Grade 4 Veliki osteofiti, izraženo suženje zglobnog prostora, izražena skleroza i deformitet koštanih okrajaka



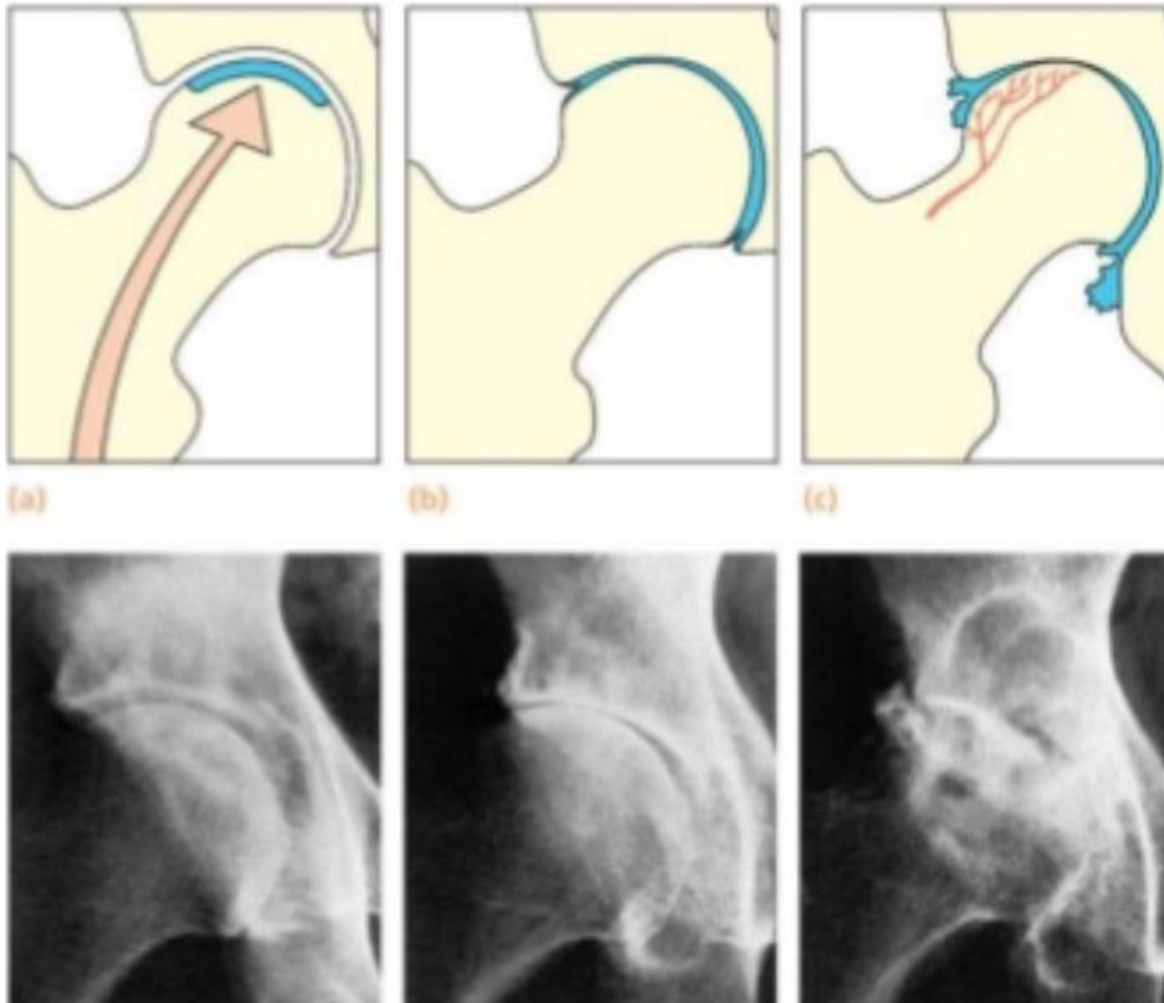
MRI



MRI



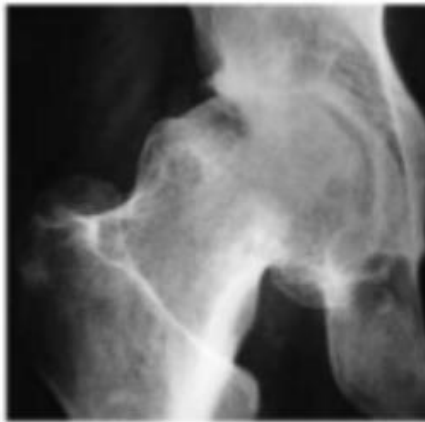
Tönnis Classification of Osteoarthritis by Radiographic Changes



Sekundarne osteoartroze



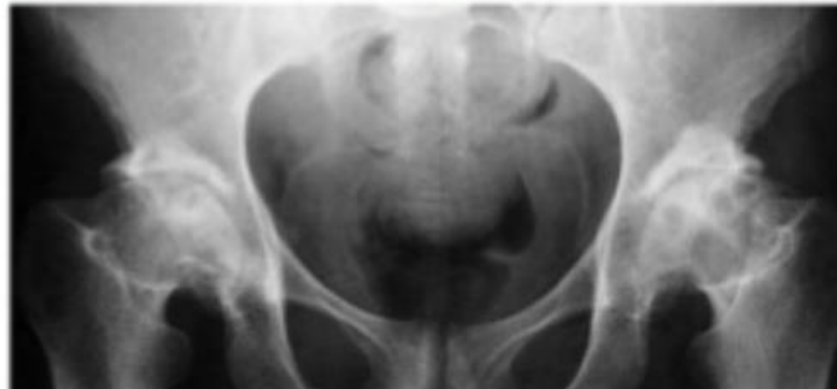
(a)



(b)



(c)



19.37 Secondary osteoarthritis (a) After Perthes' disease. (b) After slipped upper femoral epiphysis. (c) After congenital subluxation. (d) After rheumatoid disease. (e) Bilateral in a patient with multiple epiphyseal dysplasia.





- *Laboratorijski*, hematološki, serološki i imunološki nalazi su ***nekarakteristični***
- Laboratorijski nalazi nam služe da **isključimo druga oboljenja**, a pre svega RA i septični arthritis
- ***Sinovijalna tečnost*** : blede žuta i **prozirna**;
 - leukocita manje od 2000/ml;
 - polimorfonukleari < 15%;
 - glukoza kao u krvi;
 - krv se može naći posle povreda ili preloma osteofita (krv je i znak za vilonodularni sinovitis)





- Razmaz, mikrobiloški nalaz,
- Mikroskopija sa polarizovanim svetlom (giht)
- *Dijagnostička artroskopija*





Dijagnoza se postavlja na osnovu kliničkog i radiološkog nalaza

- Bol pri pokretu i na palpaciju zgloba, krepitacije, zadebljanje zgloba, izliv, ograničeni pokreti i atrofija muskulature
- RTG

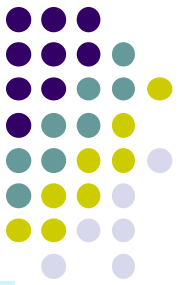


DIFERENCIJALNA DIJAGNOZA



- Brzo nastali sinovitis:
 - monoartikularni reumatizam,
 - giht ... (pomoć laboratorije)
- šaka
 - RA,
 - psorijatični artritis





Hvala na pažnji

