

آرتروز

اوستیوآرتریت

DJD

تخریب

Osteoarthritis



Healthy knee joint



Hypertrophy and spurring of bone and erosion of cartilage

یک بیماری غیرالتهابی
مفصلی است که منجر
به تخریب غضروف
مفصلی همراه با
استخوان سازی جدید
در سطح و حاشیه
مفاصل مبتلا میگردد

آپد میووزی

- شایعترین بیماری مفصلی

- شایعترین علت ناتوانی

- در آمریکا 100000 نفر به علت آرتروز زانو به تنهایی نمی توانند به توالت و حمام بروند

- هزینه سالانه در آمریکا 15000000 دلار

- در زیر 55 سالگی شیوع در مرد و زن یکسان است

- آرتروز هیپ در مردان و آرتروز انگشتان در زنان شایعتر است

شروع آرتروز

Estimated Prevalence of Radiographic and Symptomatic OA in Patients Aged 55 Years and Older

<u>Location</u>	<u>Radiographic</u>	<u>Symptomatic</u>
Hand	63-84%	2-4%
Knee	6-14%	10-30%
Hip	3-6%	1%

پاتوفیزیولوژی

غضروف مفصلی

- بافتی کاملاً اختصاصی و دارای ویژگی های زیر:

ارتجاعی

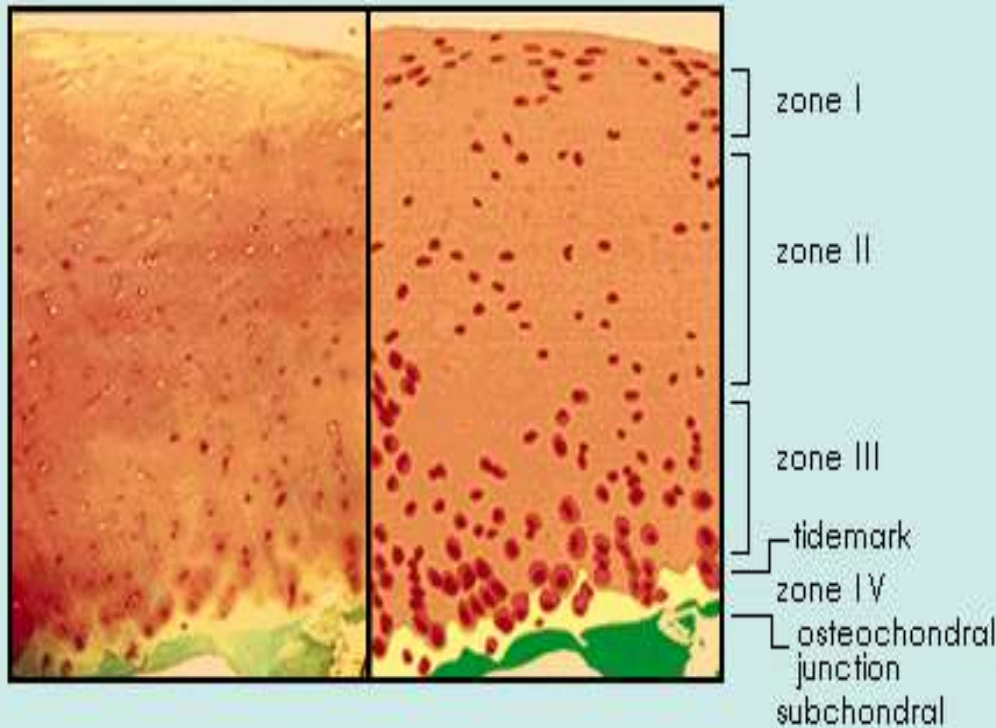
قابلیت فشرده شدن

خود لغزنده سازی

اصطکاک بسیار کم

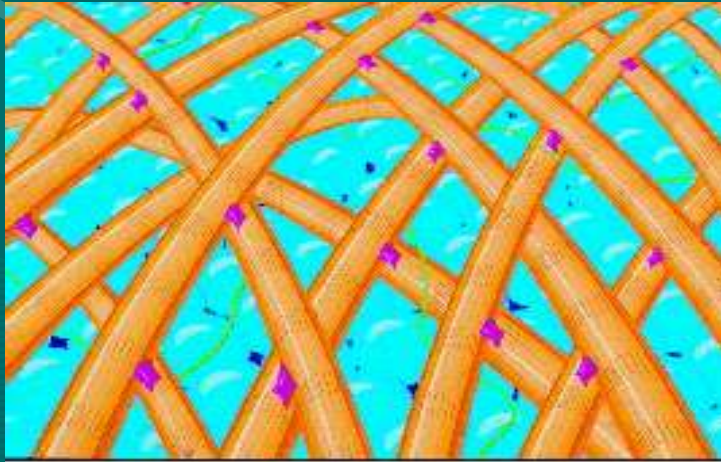
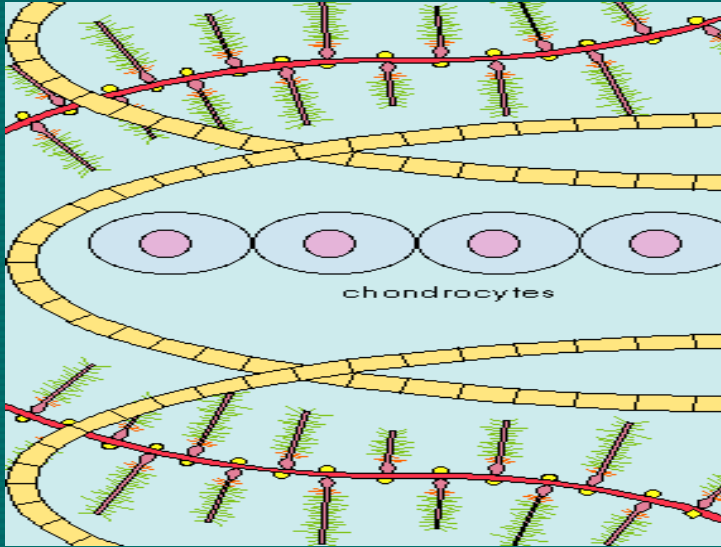
بدون عروق

قدرت ترمیم کم



پائوفیزیولوژی

غضروف مفصلی



• ساختمان غضروف

• اجزا:

آب

مواد معدنی

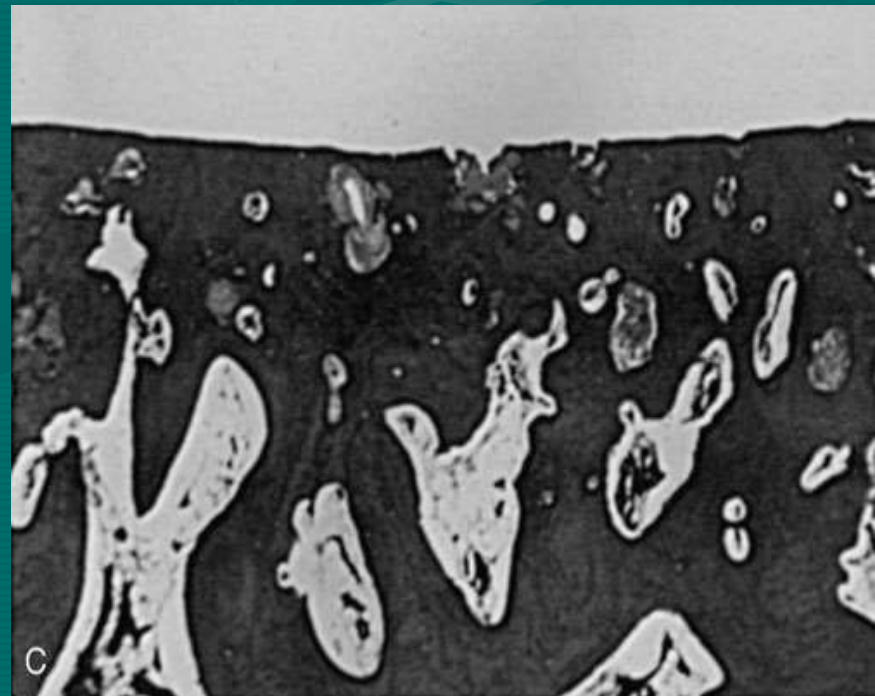
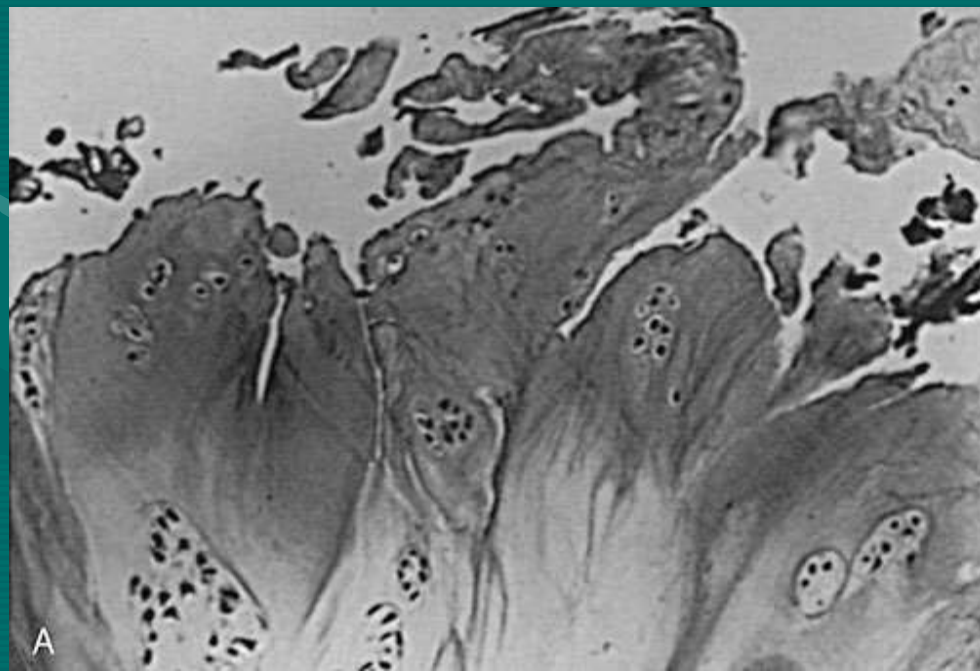
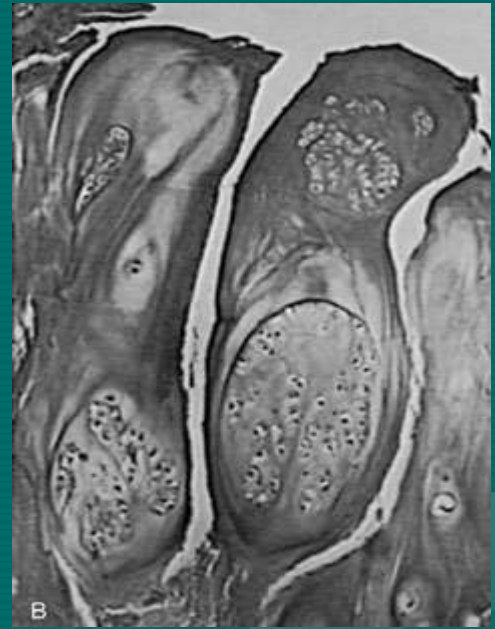
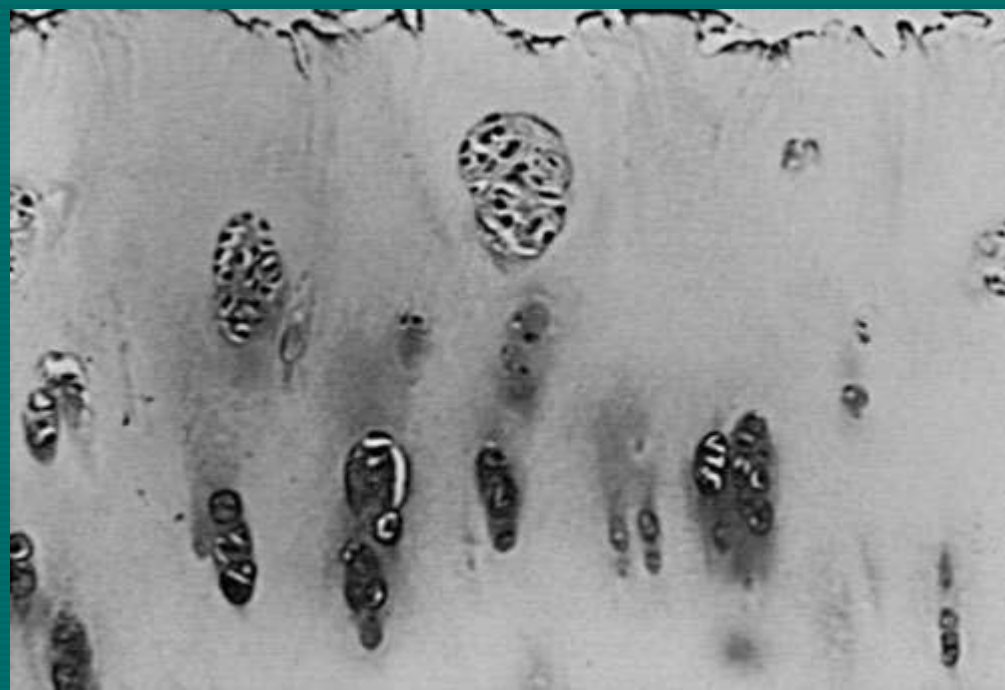
کلاژن II

پروتئوگلیکان

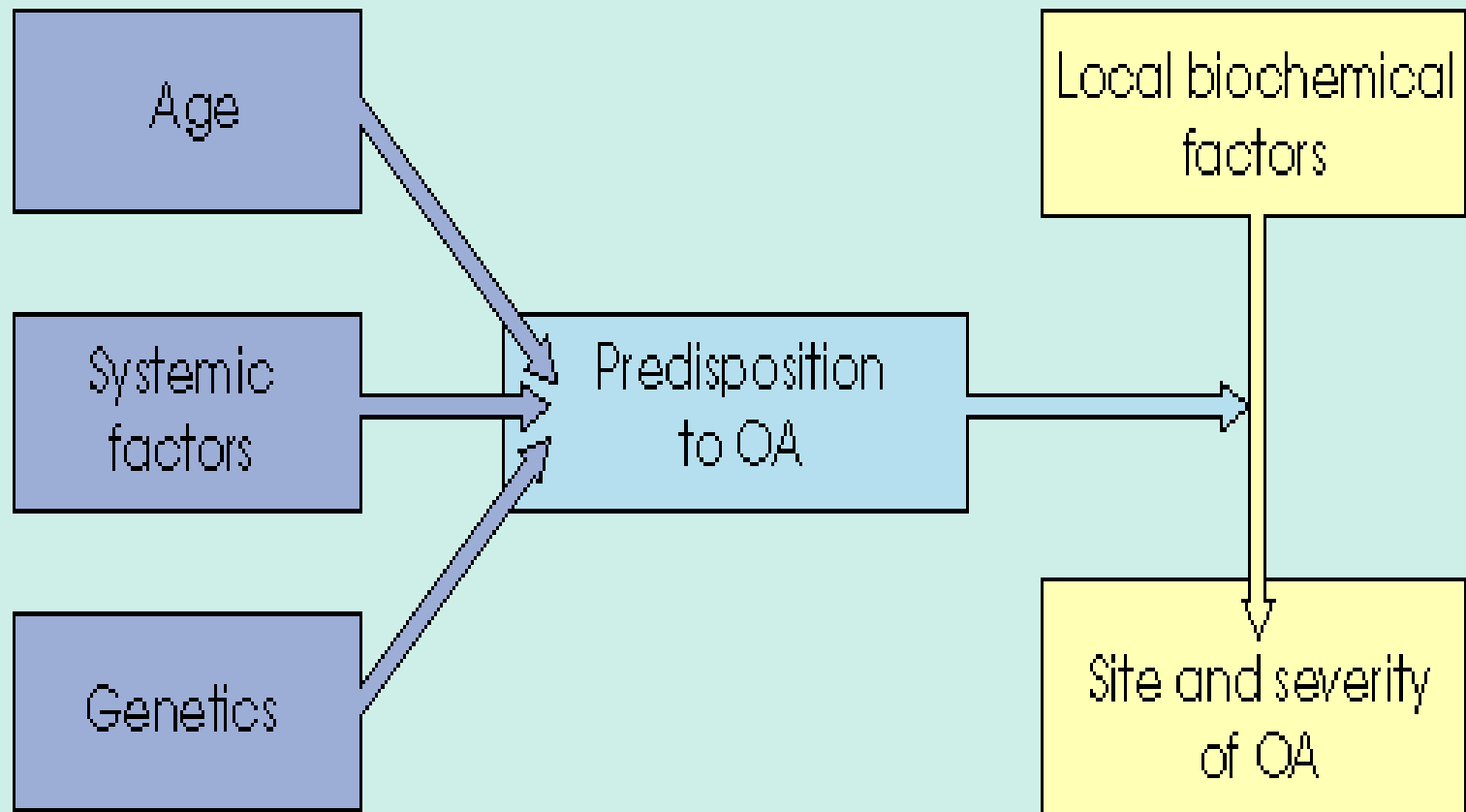
غضروف مفصلی در آرتروز

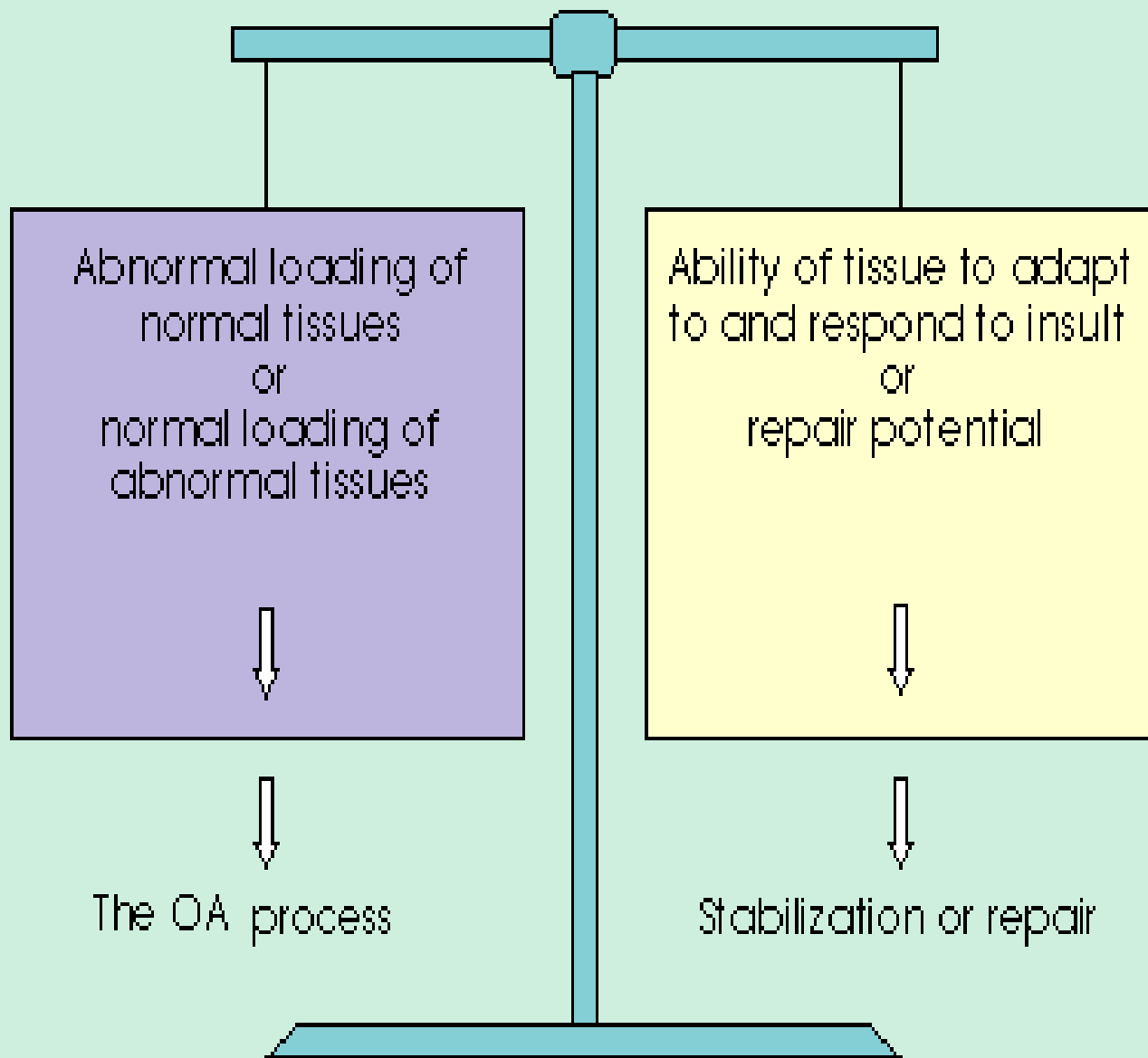


- تخریب پروتئوگلیکان
- کوتاه شدن الیاف کلاژن
- ایجاد زخم و شکاف در غضروف
- عمیق تر شدن شکاف ها
- نازک شدن غضروف
- از بین رفتن کامل
- اسکروز استخوان زیر غضروف

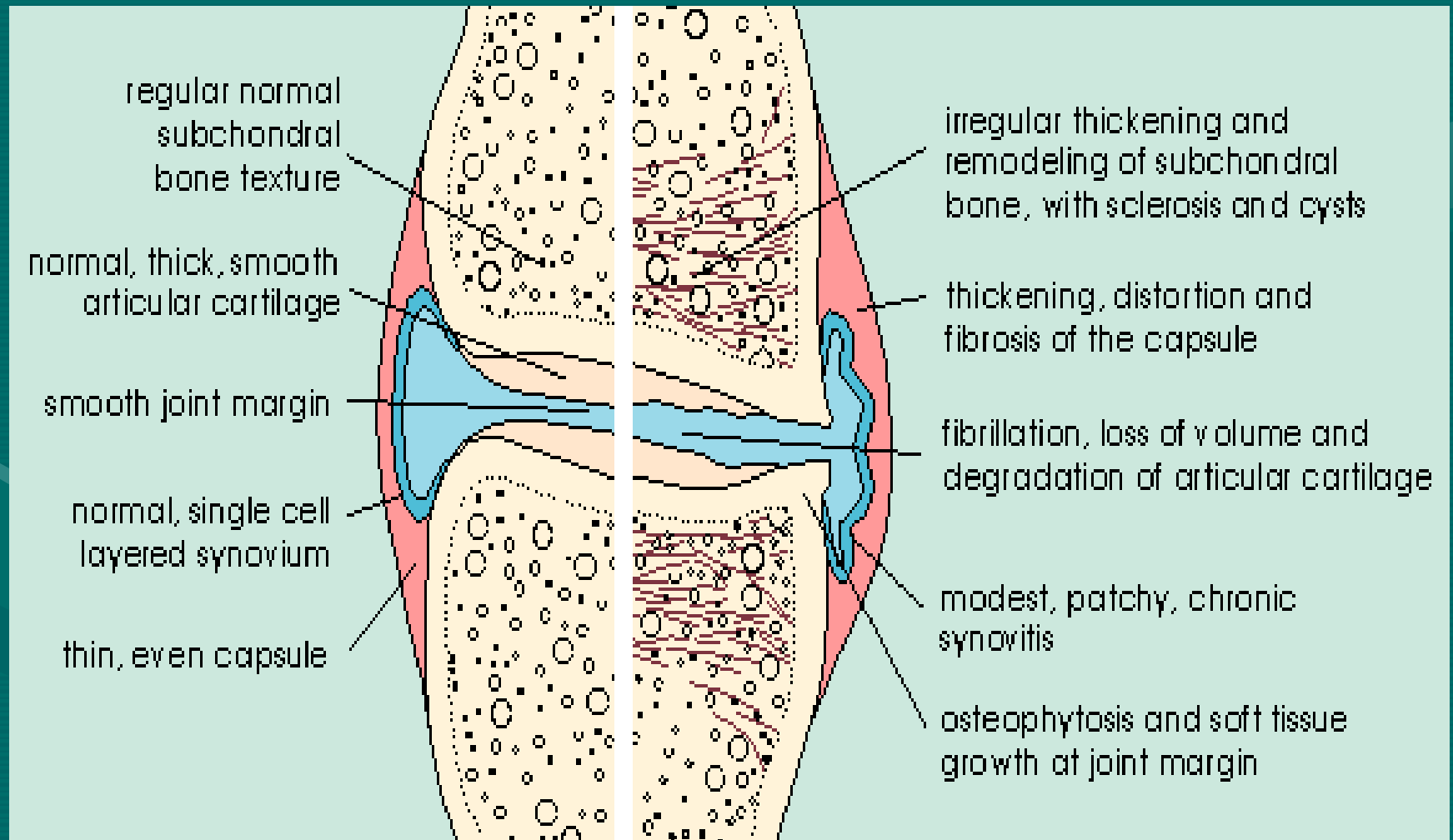


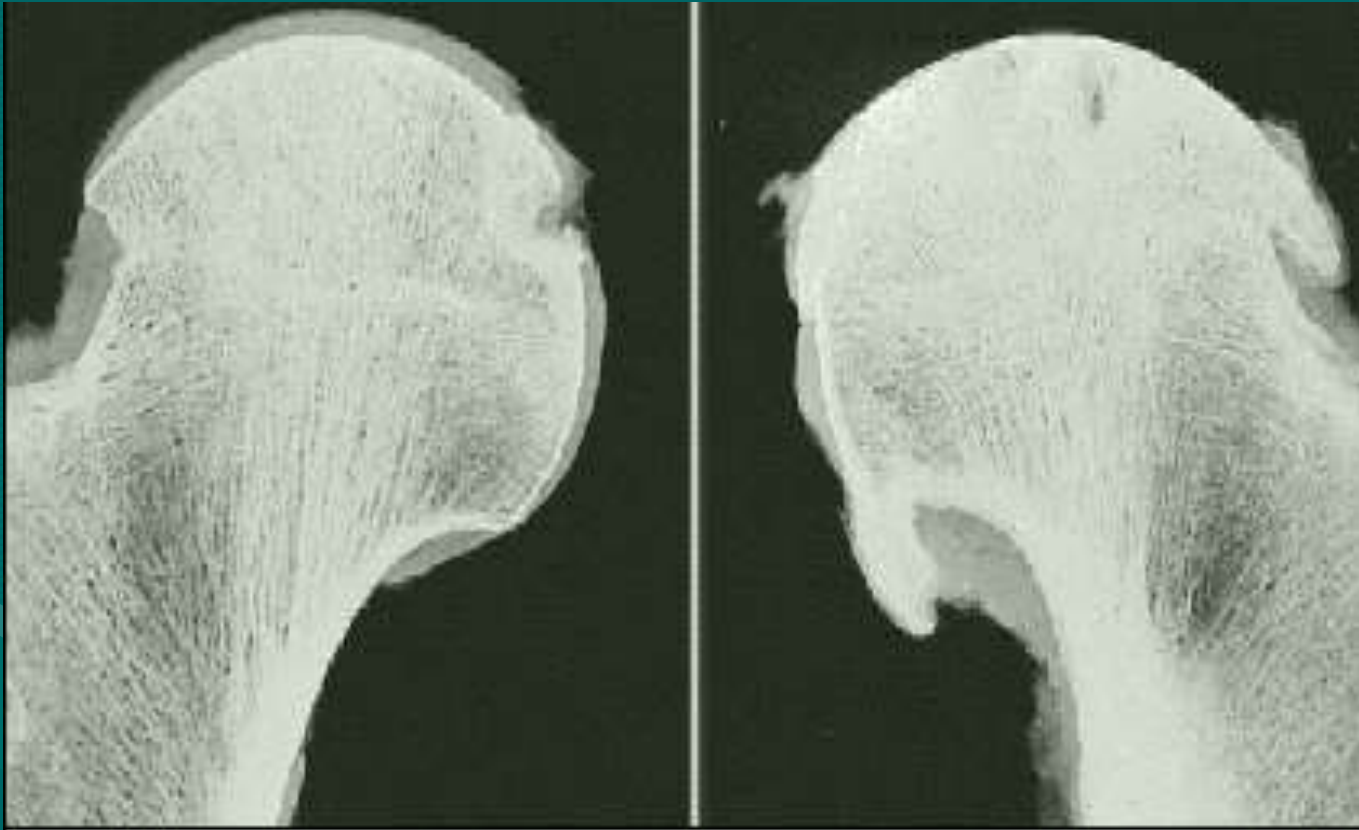
پائوفیزیولوجی

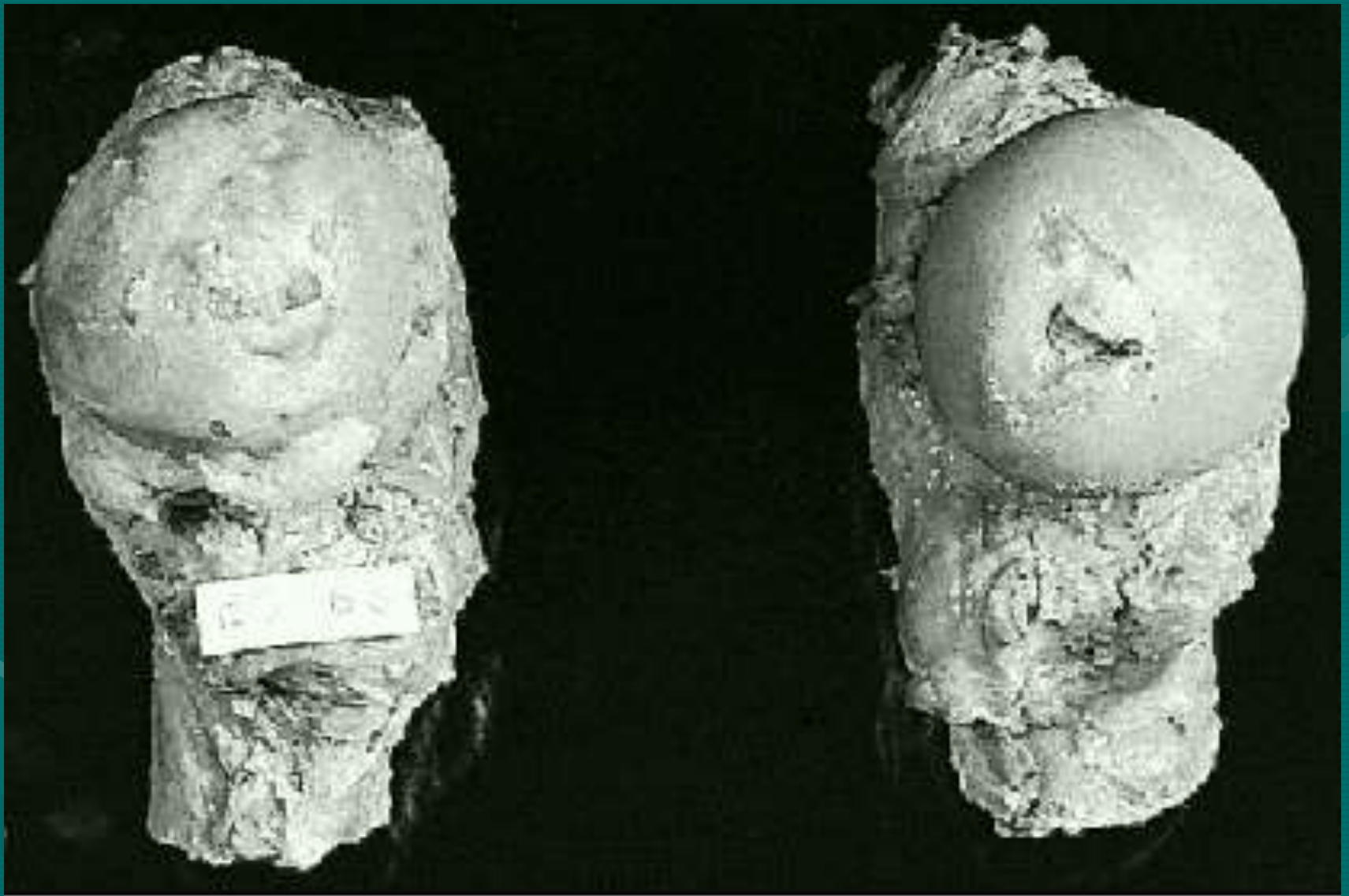




تغییرات ایجاد شده در مفصل







تقسیم بندی

• اولیه

• ثانویه:

- تروما

- بیماری های التهابی مفصلی

- بیماری های متابولیک

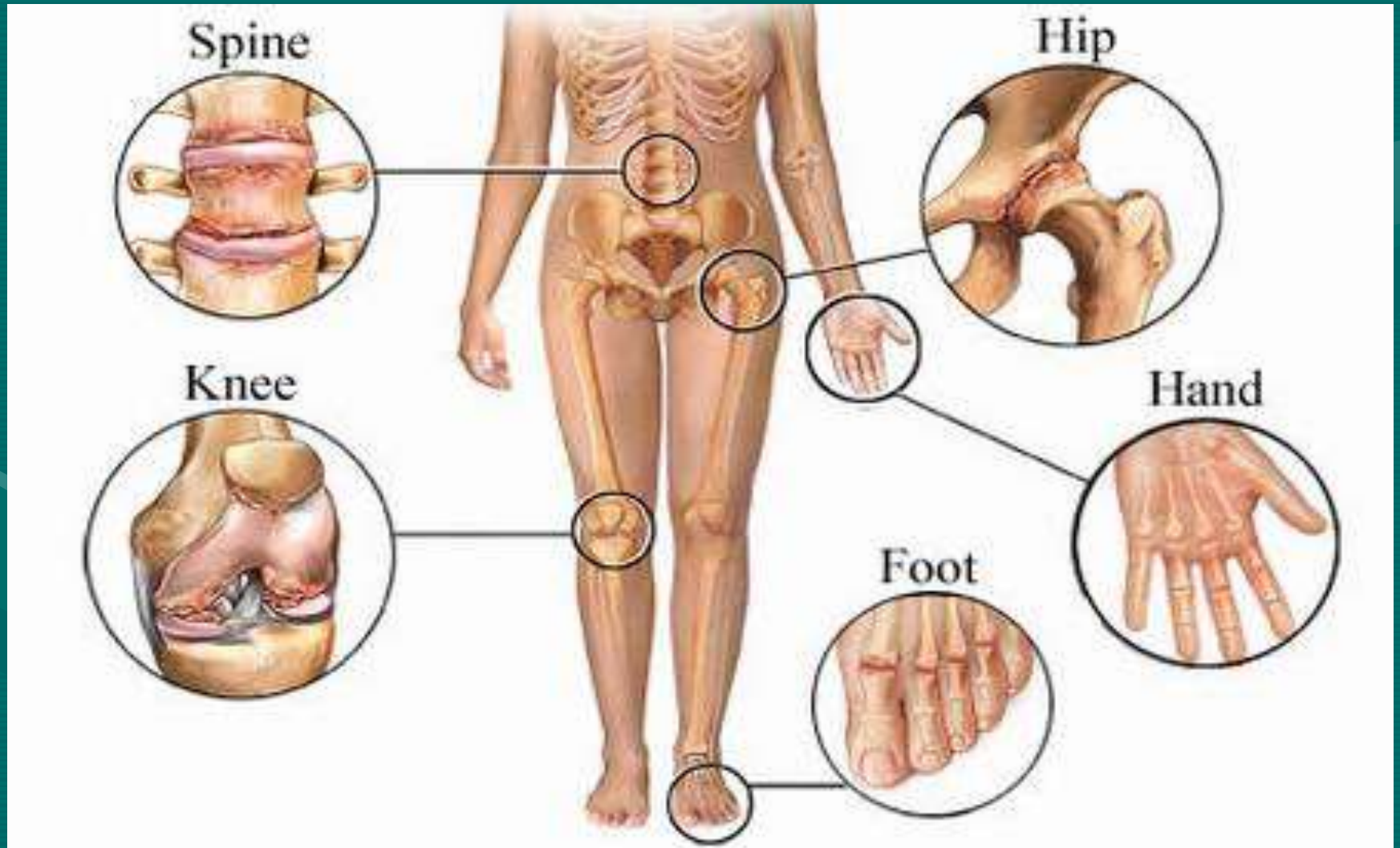
- اختلالات آناتومیک مفصل

- نوروپاتی

عوامل مسأله گنده

- سن
- جنس
- زمينه ژنتيک
- وزن
- شغل
- توده استخوانی
- مکانیک غير طبيعي مفصل

مفاصل مبتلا در استئوآرتریت اولیه



مفادى كه در استئوارترپت اونپه مپتلا

نمى شوك

MCP ○

مچ دست ○

آرنج ○

شانه ○

مچ پا ○

علائم پاپیری

• درد هنگام فعالیت

• درد شروع حرکت

• کاهش دامنه حرکتی

• ناتوانی

معاينه پالپى

- نقاط دردناک اطراف مفصل
- هيپرتروفى استخوانى
- كريپتاسيون
- علائم التهاب خفيف
- کاهش دامنه حرکتى
- لقى مفصل







یافته های پاراکلینیک



- یافته آزمایشگاهی
کمک کننده ای وجود
ندارد

- گاهی برای رد سایر
بیماری ها استفاده
میشوند

رادیوگرافی



- استئوفیت
- کاهش فضای مفصلی
- اسکروز ساب کندرال
- کیست های ساب کندرال











درمان

- آموزش

- کاهش وزن

- ورزش

- مسکن ها

- ضد التهاب ها (Non-Selective & Selective COX2)

- گلوکوزآمین و کندروتین سولفات

- تزریق داخل مفصلی هیالورونات

- تزریق داخل مفصلی کورتیکواستروئید

- جراحی

Treatment Overview

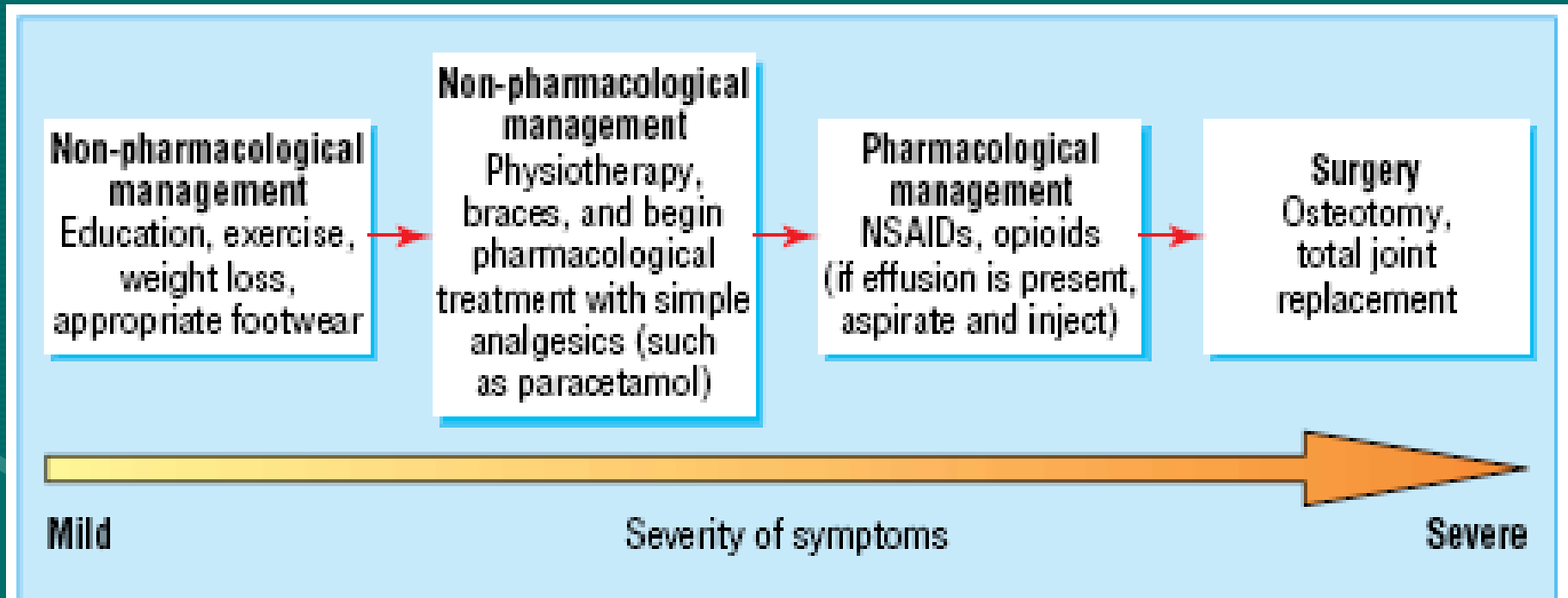
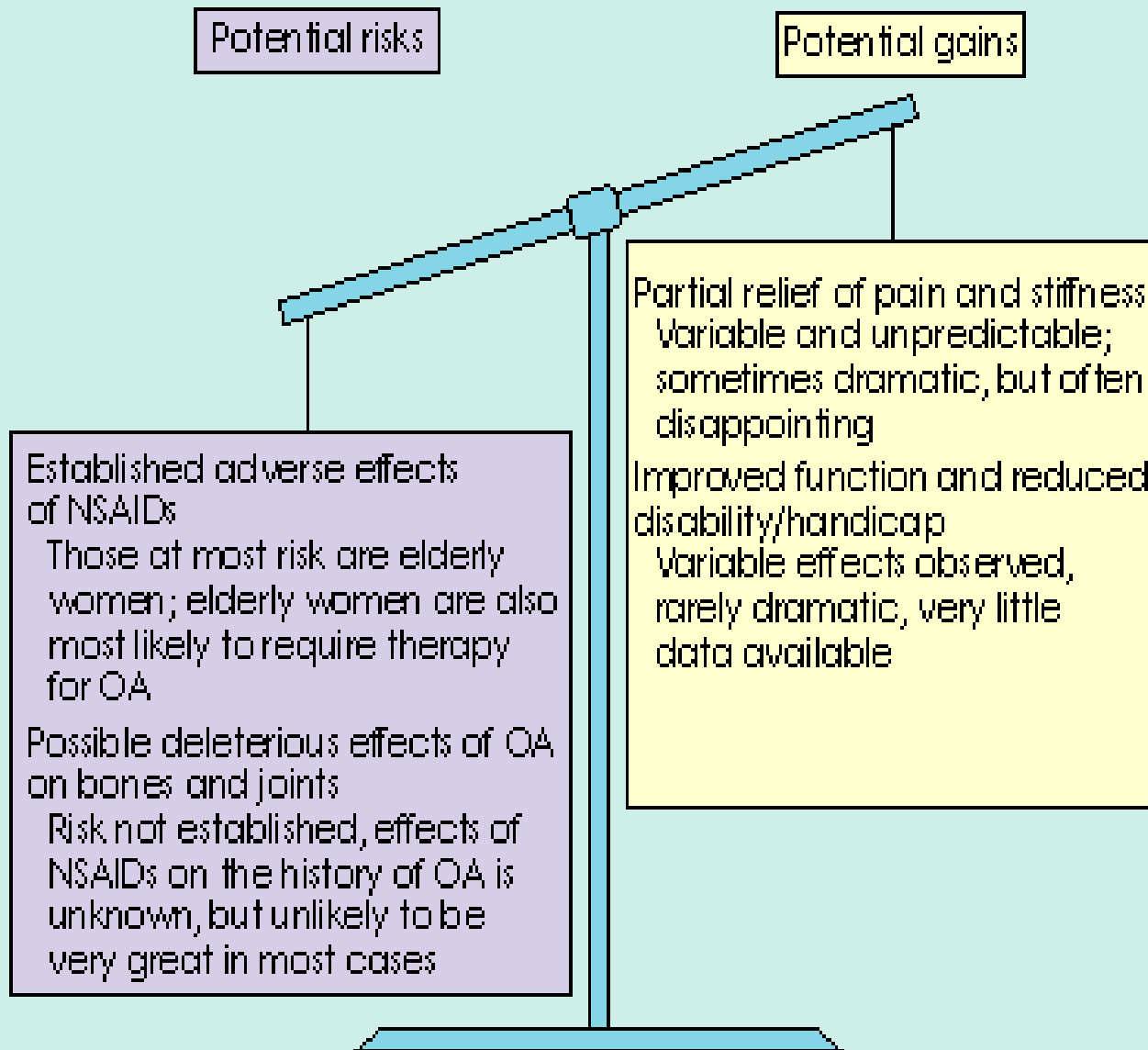


Fig 3 Stepwise algorithm for the management of patients with osteoarthritis. This is an example of a treatment algorithm that is modified according to patient's response and clinician's preference. It highlights the encompassing need to consider non-pharmacological management as first line for all patients

NSAIDs و آرتروز



Distinction between rheumatoid arthritis and osteoarthritis

Feature	Rheumatoid arthritis	Osteoarthritis
Primary joints affected	Metacarpophalangeal	Distal interphalangeal
	Proximal interphalangeal	Carpometacarpal
Heberden's nodes	Absent	Frequently present
Joint characteristics	Soft, warm, and tender	Hard and bony
Stiffness	Worse after resting (eg, morning stiffness)	If present, worse after effort, may be described as evening stiffness
Laboratory findings	Positive rheumatoid factor	Rheumatoid factor negative
	Positive anti-CCP antibody	Anti-CCP antibody negative
	Elevated ESR and C reactive protein	Normal ESR and C reactive protein

CCP: cyclic citrullinated peptide

Typical OA work-up

- History
- PE
- Consider following (especially if OA of knees or hips)
 - Erythrocyte sedimentation rate (ESR)
 - Rheumatoid factor titers
 - Evaluation of synovial fluid
 - Radiographic study of affected joints

Overview

- Definition and Risk Factors
- Idiopathic vs. Secondary OA
- Clinical Features
- Diagnosis
- Radiologic Features
- ACR OA dx for knees, hands, hips
- Goals of Treatment
- Non-pharmacologic treatment
- Pharmacologic treatment
- Surgical Considerations

Goals of Treatment

- Control pain and swelling
- Minimize disability
- Improve the quality of life
- Prevent progression
- Education
- Chronic Condition and Management

Non-pharmacologic Treatment

- Weight Loss
 - Ten-pound weight loss over 10 years decreased the odds for developing knee OA by 50%
 - Even a modest amount of weight loss may be beneficial
- Rest
 - Short period of time, typically 12-24 hours
 - Prolonged rest can lead to muscle atrophy and decreased joint mobility

Non-pharmacological Treatment

- Physical Therapy
 - “Manual therapy” may be more beneficial than exercise programs that focus on muscle strengthening, endurance training, and improved coordination
 - May be more beneficial in those with mild OA
 - Ultrasound therapy may have some benefit based on 2009 Cochrane Review

Tens

- SOR B
- Safety/Tolerability: High
- Efficacy: Medium
- 20 points more effective on scale of 100 compared to placebo
- Few long term studies
- Price: Low to medium

Non-pharmacologic Treatment

- Knee Braces/Shoe Inserts - SOR C
 - Cochrane reports a “sliver of benefit”
 - 73% taping for 3 weeks reported improvement (elastic knee sleeve)
 - Price: Low \$30
- Acupuncture
 - Cochrane January 2010
 - Very small improvements in pain and physical function after 8 weeks and 26 weeks
 - A lot seems to be placebo effect due to incomplete blinding
 - Price: Medium to high, 1000\$ over 3-4 months
 - Reasonable to offer if patient resistant to conventional treatment and wants to try alternative therapies

Non-pharmacological Treatment

- Exercise – focus on low load exercise
 - Tai Chi
 - Yoga
 - Swimming
 - Biking
 - Walking
 - Most important aspect to counsel patients for prevention and treatment
 - Cochrane Review 2009 compares efficacy to NSAIDs in short-term benefits
- Heat and Cold
 - Lack of convincing data despite being commonly used

Acetaminophen

- Cochrane 2009 Review
- NSAIDs are superior to acetaminophen for improving knee and hip pain in people with OA
- Treatment effect was modest
- Median trial duration was only six weeks
- In OA subjects with moderate-to-severe levels of pain
- NSAIDs > Acetaminophen > Placebo
- NNT for Acetaminophen 4 to 16
- 1000mg three to four times daily

NSAIDs

- Tend to avoid for long-term use
 - Rash and hypersensitivity reactions
 - Abdominal pain and gastrointestinal bleeding
 - Impairment of renal, hepatic, and bone marrow function, and platelet aggregation
 - Central nervous system dysfunction in the elderly
- Low dose ibuprofen (less than 1600 mg/day) may have less serious GI toxicity
- Nonacetylated salicylates (salsalate, choline magnesium trisalicylate), sulindac, and nabumetone appear to have less renal toxicity
- Indomethacin should be avoided for long-term use in patients with hip OA
 - associated with accelerated joint destruction

Topical NSAIDs

- A 2004 meta-analysis included 13 trials involving almost 2000 patients
- Randomly assigned to topical NSAID, oral NSAID, or placebo
- Significant short term (one to two weeks) efficacy for pain relief and functional improvement when topical NSAIDs were compared to placebo
- Effect was not apparent at three to four weeks
- Topical NSAIDs were generally inferior to oral NSAIDs
- However topical route was safer than oral use
- Topical Diflofenac (1% gel or patch)

COX-2 Inhibitors

- COX-2 inhibitors appear to be as effective NSAIDs
- Associated with less GI toxicity
- However increased risk of CV events
- Use of low dose ASA may negate the GI sparing effects of COX-2 inhibitors
- Those who are receiving low dose aspirin and a COX-2 selective agent may benefit from antiulcer prophylaxis

Capsaicin

- Capsaicin Ointment 0.025% (qid) & 0.075% (bid)
 - Principle ingredient of chili peppers (substance P)
 - Love It!
 - Tolerability: Medium
 - 50% experience burning which wanes
 - 50% decrease in pain, 25% with placebo
 - Price: 15\$ per month
 - Apply 2-4 times per day

Glucosamine

- Glucosamine Sulfate 1500mg po daily
- Supplement, typically not covered
- Cochrane 2009
 - Rotta preparation glucosamine was superior to placebo in the treatment of pain and functional impairment
 - Non-Rotta preparation failed to show benefit
- Majority of trials that have evaluated the effectiveness of glucosamine sulfate demonstrated significant clinical benefits
- Glucosamine hydrochloride trials are scarce and much less convincing
- Bottom-Line, most likely beneficial if Rotta brand and Sulfate formulation, not HCL

Injections

- Corticosteroid
 - Safety: High for short-term use, data on frequency and degree of use is limited.
 - Study of pt's receiving 8 injections over 2 year period showed no ill effects in comparison with pt's receiving placebo.
 - Tolerability: Medium to high
 - Efficacy: Low to medium. Modest benefit. 16 point reduction in pain on 100-point scale for one month.
 - Price: Low, 100\$-200\$
 - SOR A

Hyaluronic Injections of Knees

- Safety: High
- Tolerability: Medium. Small number pts get flare up of symptoms.
- Efficacy: Low. Recent Meta-analyses and reviews small clinical effect. 75% were satisfied with treatment. Lasts 3-4 months.
- Price: High. 3 injections costs \$700 to \$1000 per injection. Claims of substantial savings d/t delayed joint replacement.
- SOR A

Narcotics for Refractory Pain

- Vicodin/Oxycodone
- Safety: Medium
- Tolerability: Medium
 - Constipation, somnolence, mental status changes
- Price: Low, <\$20 per month with vicodin
- Use of opiates indicated in those who are not candidates for surgery and who continue to have moderate to severe pain despite being on NSAIDs or selective cyclooxygenase (COX)-2 inhibitors

Arthroscopic Interventions

- Controversial
- Arthroscopic debridement with lavage
- Sham-surgery versus arthroscopic lavage/debridement study
- Remove loose pieces of bone and cartilage
- Resurface (smooth out) bones

Prosthetic Joints

- Commonly of the hip or knee or shoulder
- Several types: metal, plastic, ceramic
- Last 10-15 years or more
- About 10% need to be redone
- Usually a treatment of “last resort”

Joint Replacement

- Surgical candidate?
- Often greater improvement in pain rather than function
- Recovery can be strenuous and lengthy
- Infection rate 1%
- Low mortality 0.6% to 0.7%
- Complications include thrombo-embolic events 5%

Education and Self-Help

- Understand the disease
- Reduce pain but remain active
- Clear Functional goals
- Cope physically, emotionally, and mentally
- Have greater control over the disease
- Build confidence

References

- Osteoarthritis-How to best avoid surgery. Journal of Family Practice. July 2009
- Osteoarthritis: Diagnosis and Therapeutic Considerations. AAFP. March 1, 2002.
- FPIN's Clinical Inquiries. Glucosamine and Chondroitin for Osteoarthritis. April 1, 2006.
- Cochrane Review. July 2009. Therapeutic ultrasound for osteoarthritis of the knee or hip.
- Cochrane Review. January 2009. Aquatic exercise for the treatment of knee and hip osteoarthritis.
- Cochrane Review. July 2009. Exercise for osteoarthritis of the knee.
- Cochrane Review. January 2009. Acetaminophen for osteoarthritis.
- Cochrane Review. January 2009. Braces and orthoses for treating osteoarthritis of the knee.
- Cochrane Review. October 2009. Glucosamine therapy for treating osteoarthritis.

Questions?

© Original Artist
Reproduction rights obtainable from
www.CartoonStock.com



"All I can say is, I didn't have all this arthritis and lumbago back when *Nixon* was President!"