

بسم الله الرحمن الرحيم.



Rheumatoid Arthritis



Dr. Parviz Soufivand
kermanshah university of medical sciences

Definition

- Rheumatoid arthritis (RA) is a chronic inflammatory disease
- Unknown etiology
- Marked by a symmetric, peripheral polyarthritis.
- It is the most common form of chronic inflammatory arthritis and often results in **joint damage** and **physical disability**

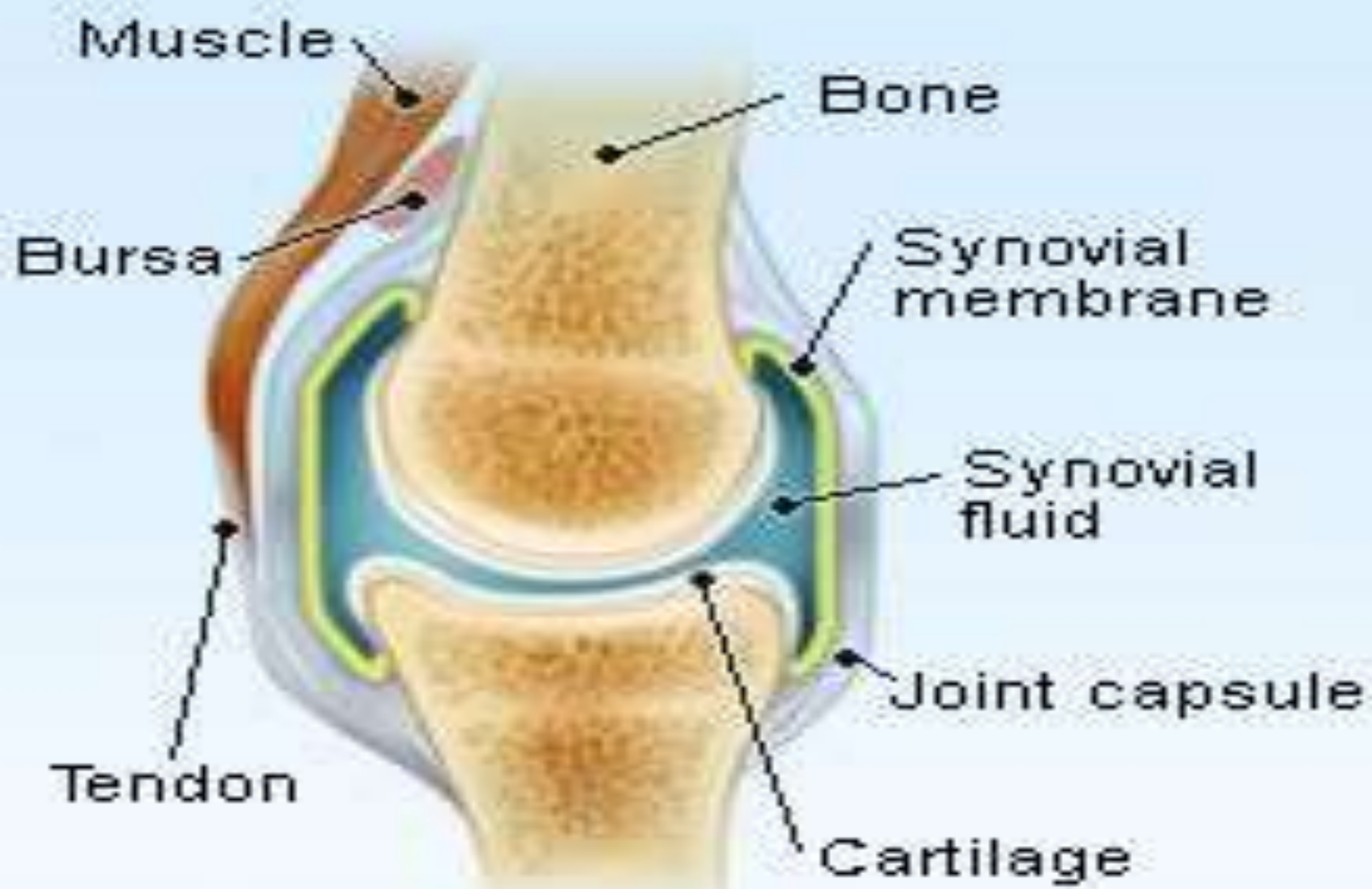
EPIDEMIOLOGY

- 1% (0.1–1.9%) of the adult population

in first degree family	4%
concordance in dizygotic twins	2-5%
concordance in monozygotic twins	12-15%

- Females / males(2–3:1)
- The incidence of RA increases between 40 and 50 years of age
- After which it plateaus until the age of 75 and then decreases

Normal Joint



Healthy

Rheumatoid

*Genetic
Smoking
Trauma
Infection*

Capsule

Synovium

Cartilage

Synoviocytes

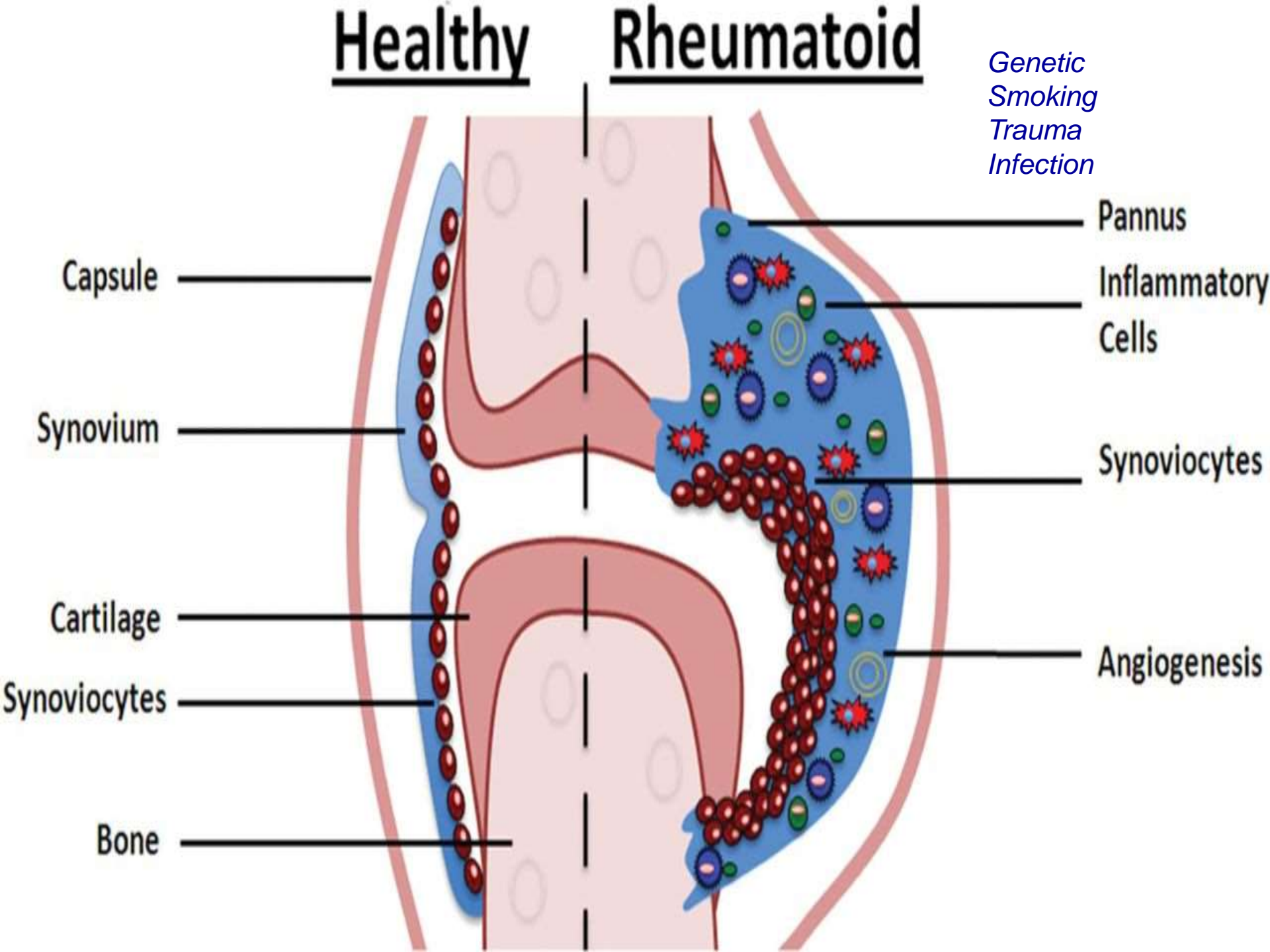
Bone

Pannus

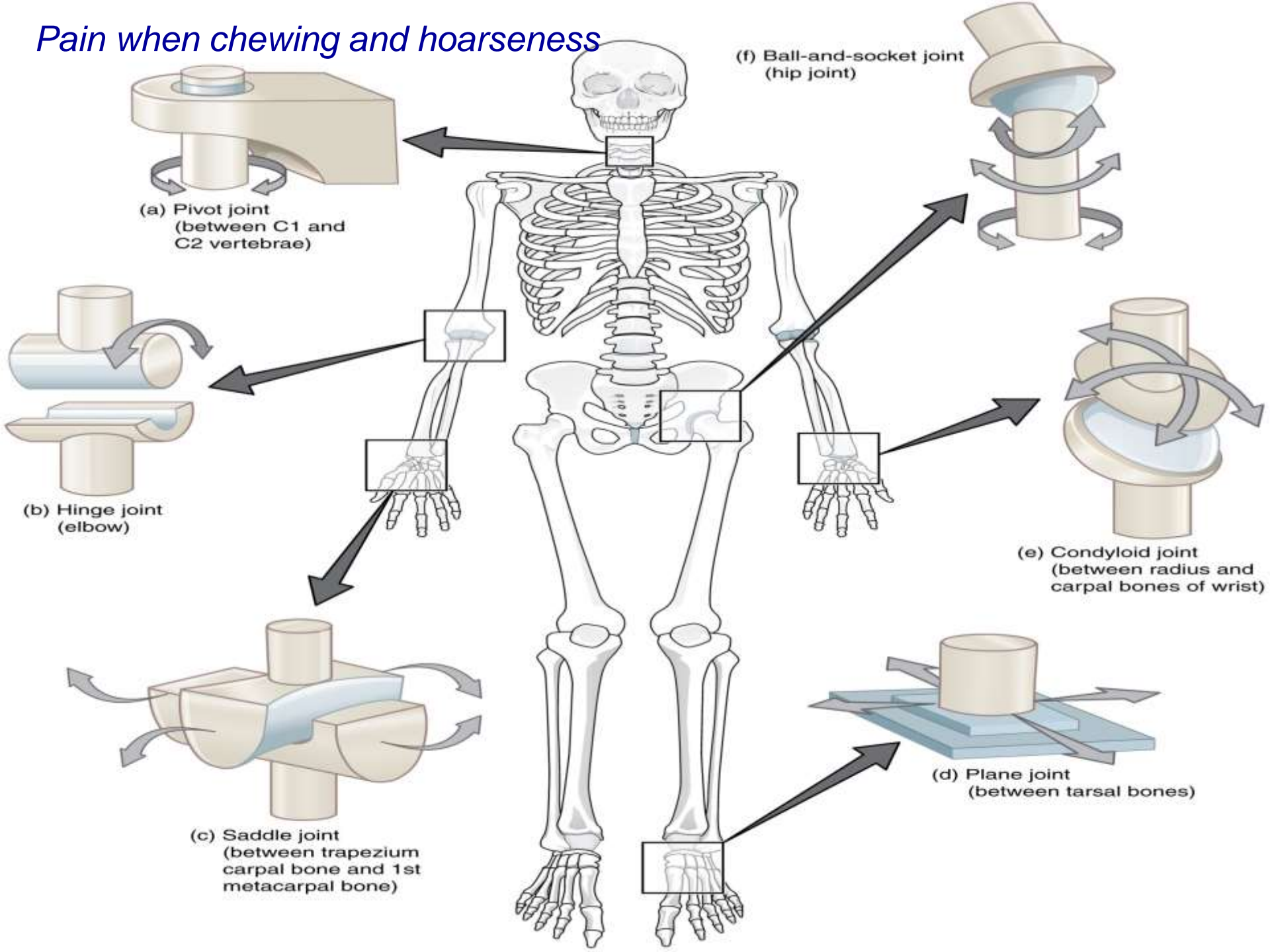
Inflammatory
Cells

Synoviocytes

Angiogenesis



Pain when chewing and hoarseness







Ulnar deviation results from subluxation of the MCP joints, with subluxation of the proximal phalanx to the volar side of the hand. Hyperextension of the PIP joint with flexion of the DIP joint



("swanneck deformity"), flexion of the PIP joint with hyperextension of the DIP joint



boutonnière deformity”), and subluxation of the first MCP joint with hyperextension of the first interphalangeal (IP) joint

Boutonniere Deformity



Z deformity

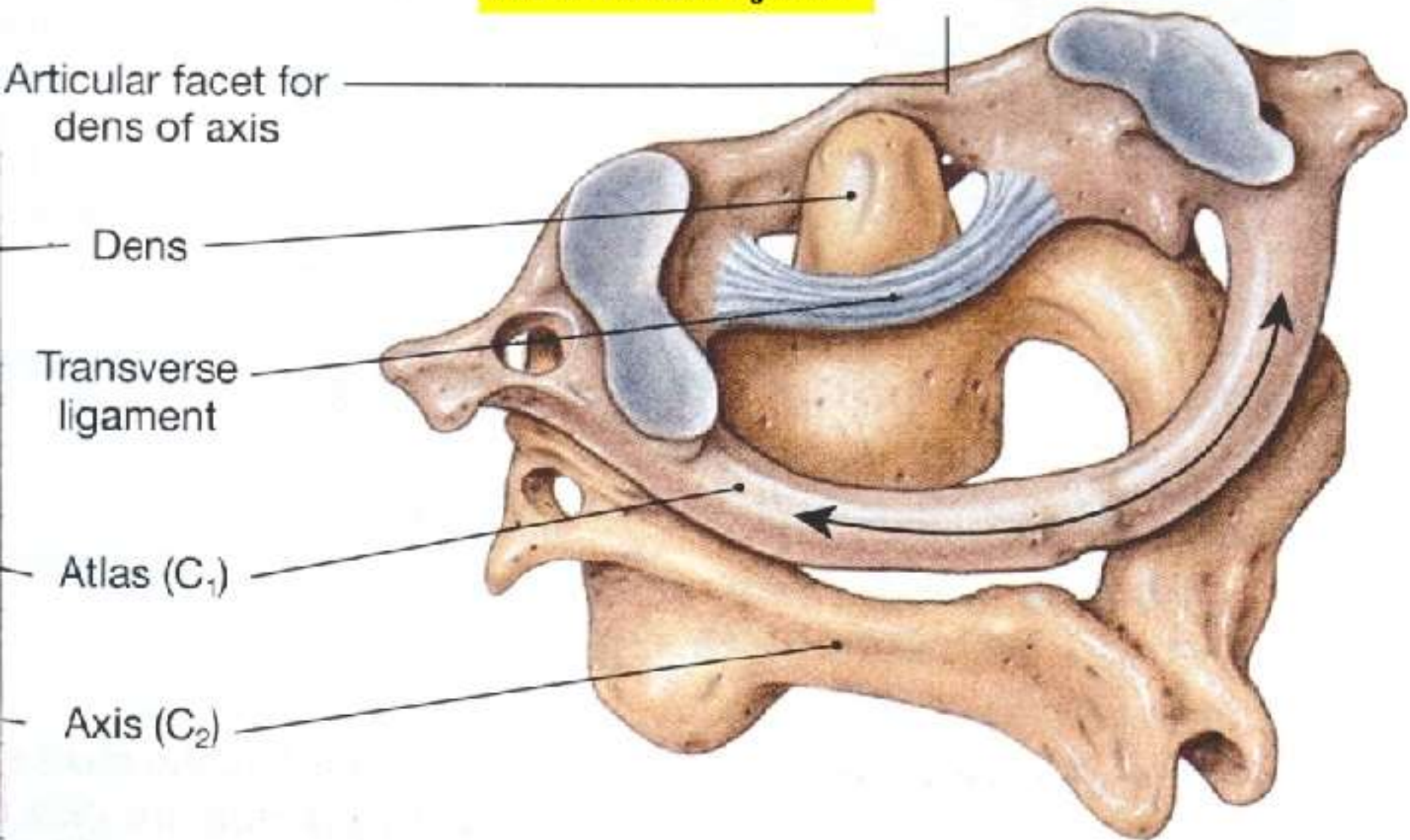




piano-key

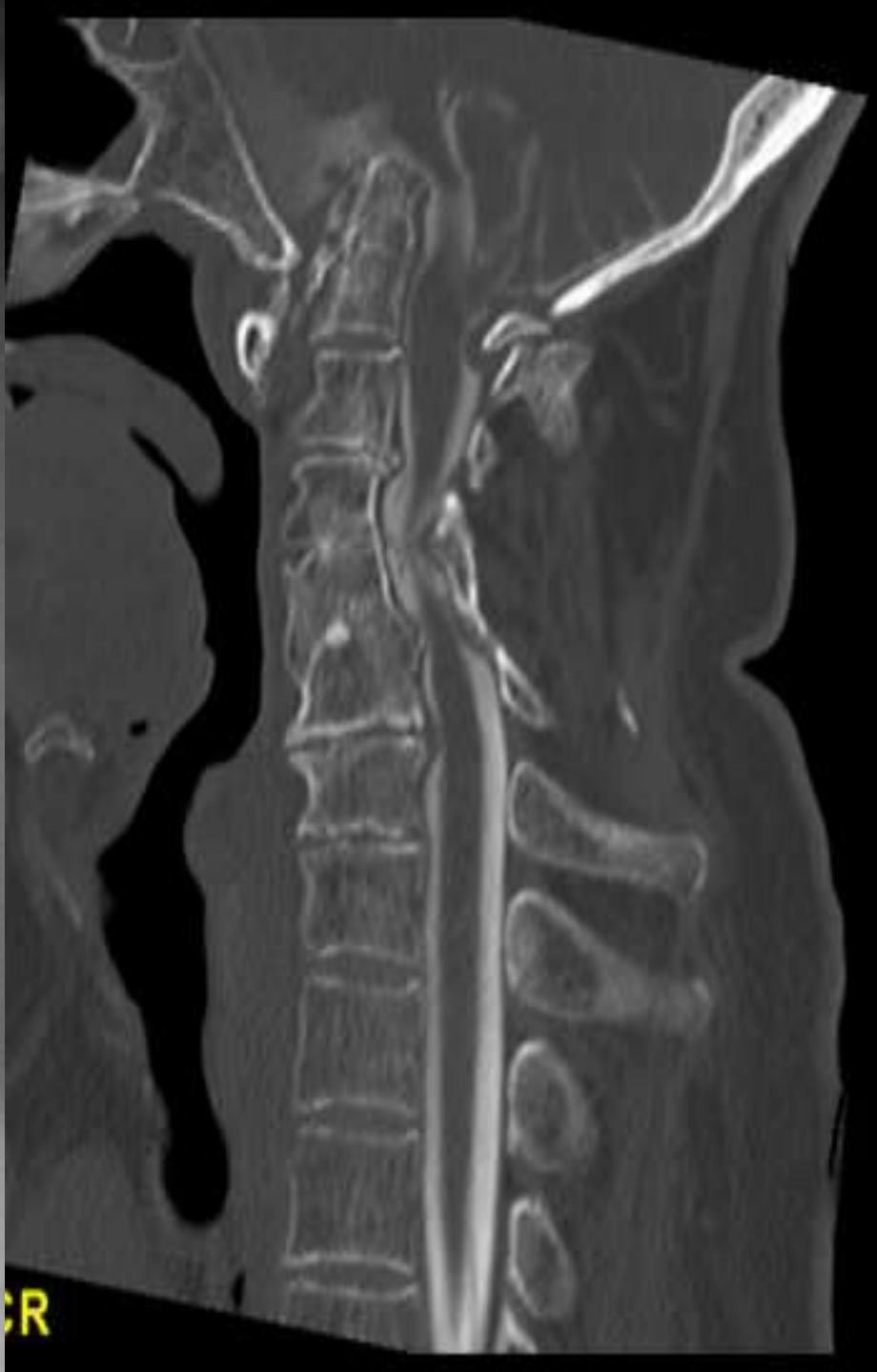


Atlantoaxial joint



(f) The articulated atlas and axis; note the location and orientation of the transverse ligament.





CR

Atlantoaxial involvement

- Neurologic manifestations
- Instability of C1 on C2
- Atlantoaxial subluxation has been declining in recent years
- Occurs now in less than 10% of patients

CLINICAL FEATURES

- Inflammation of the joints, tendons, and bursae.
- Early morning joint stiffness (more than 6· min)
- The earliest involved joints are typically the small joints of the hands and feet.
- Monoarticular, oligoarticular (≤ 4 joints), or polyarticular (>5 joints)
- The wrists, metacarpophalangeal (MCP), and proximal interphalangeal (PIP)
- Distal interphalangeal(DIP)

Patterns of Onset

❑ PRE-CLINICAL RHEUMATOID ARTHRITIS

- RF and ACPA :
- In approximately one-half of patients, often many years before RA symptom onset

Insidious Onset

- 55% to 65% of patients
- The small joints of the hands, wrists, and feet are most commonly affected.
- The joint pattern is often symmetric, and is accompanied by morning stiffness
- Less commonly, onset is characterized by a slowly evolving monoarticular or oligoarticular presentation, with a predilection for larger joints, such as the elbows, knees, or hips

Acute or Intermediate Onset

- 8% to 15% of all cases
- polyarticular arthritis that can be intensely inflammatory and may involve both small and large joints when the patient is first seen by a physician
- DD : viral infection – Leukemia
- A 17-year- man with knee and ankle pain and swelling of the upper joints
- Increase ESR / CRP _ RF positive – CBC normal - Anti CCP (neg) – Wright - viral (neg) – Sono (normal)

Systemic onset

The first complaint is non-focal, such as weight loss, fatigue, depression, or fever,

Extra-articular feature such as serositis or vasculitis.

Articular manifestations may be absent

Persistent monoarthritis

The patient initially has persistent arthritis affecting a single large joint such as knee, shoulder, ankle or wrist.

Palindromic Rheumatism

- Relatively brief but intense episodes of joint inflammation
- Rheumatologist : asymptomatic
- The self-limited
- palindromic flares : which may last from a few hours to a few days , often monoarticular
- knees, fingers, or shoulders
- Mimic crystalline arthropathy or septic arthritis
- RF and/or ACPA, is often helpful
- RA (1/3 -2/3)

Atypical Onset

❑ The initial presentation :

- Simple bursitis or tendonitis
- Evolve into tenosynovitis
- Carpal tunnel syndrome

A 35-year- female

Pain in the wrist and fingers.

NCV : CTS

Another month with similar symptoms on the left hand .

A few weeks later with the same symptoms on the ankle.

ESR :65

RF : +++

Anti ccp > 200

❑ HEMATOLOGIC

- A normochromic, normocytic anemia
- The degree of anemia parallels the degree of inflammation
- C-reactive protein (CRP) and erythrocyte sedimentation rate (ESR)
- Platelet counts
- Felty's syndrome : Neutropenia , splenomegaly, and nodular RA (1%)
- T cell large granular lymphocyte leukemia (T-LGL)

- **VASCULITIS**

- Long-standing disease, a positive test for serum RF, and hypocomplementemia
- Less than 1% of patients
- Small and medium vessels
- Petechiae , purpura, digital infarcts, gangrene, livedo reticularis, and in severe cases large, painful lower extremity ulcerations.

petechiae purpura



Digital Infarction,

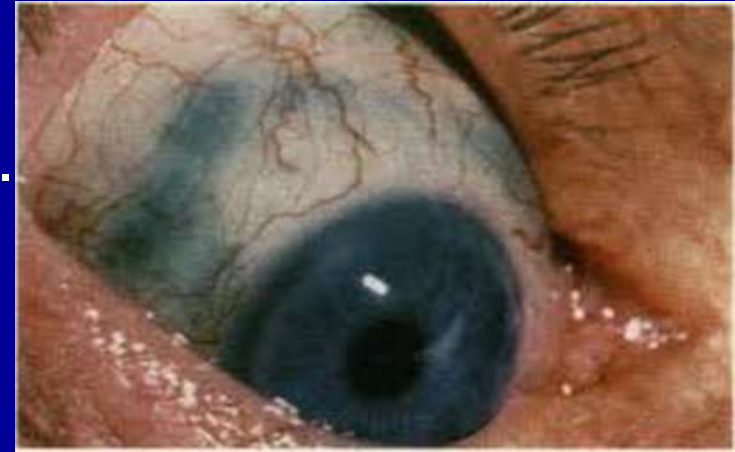


large ulcers of the lower extremities are painful



Ocular manifestation of rheumatoid arthritis- different forms and frequency

- 691 patient with the diagnoses of RA.
- Keratoconjunctivitis sicca (5.06%)
- Scleritis (2.06%) , Diffuse scleritis was present in one patient
- while nodular was present in 13 patients
- Ocular manifestation was present in 27.2% of patients
- Women were more affected



NODULES

- Subcutaneous nodules (30–40%)
- Highest levels of disease activity
- A positive test for serum RF
- Radiographic evidence of joint erosions
- Firm , nontender , and adherent to periosteum, tendons, bursae forearm, sacral prominences, and Achilles tendon.
- The lungs, pleura, pericardium, and peritoneum.
- Nodules are typically benign, although they can be associated with infection, ulceration, and gangrene



- PULMONARY
- Pleuritis , the most common pulmonary manifestation of RA, Chest pain , dyspnea, pleural friction rub and effusion.
- Pleural effusions tend to be exudative with increased numbers of monocytes and neutrophils.
- Interstitial lung disease (ILD) (dry cough and progressive shortness of breath)
- ILD can be associated with cigarette smoking and is generally found in patients with higher disease activity

Cardiovascular Disease

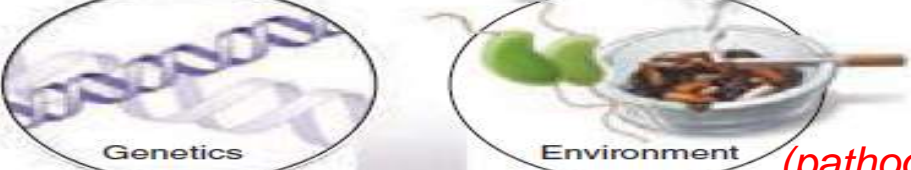
- The most common cause of death
- The incidence of **coronary artery disease** and carotid **atherosclerosis** is higher in RA patients than in the general population

Osteoporosis

- Osteoporosis is more common in patients with RA than an age- and sex-matched population, with prevalence rates of 20–30%.
- **The inflammatory** milieu of the joint probably , Chronic use of **glucocorticoids** and disability-related **immobility** also contributes to osteoporosis



HLA-DR, PTPN22, PADI4, etc.)



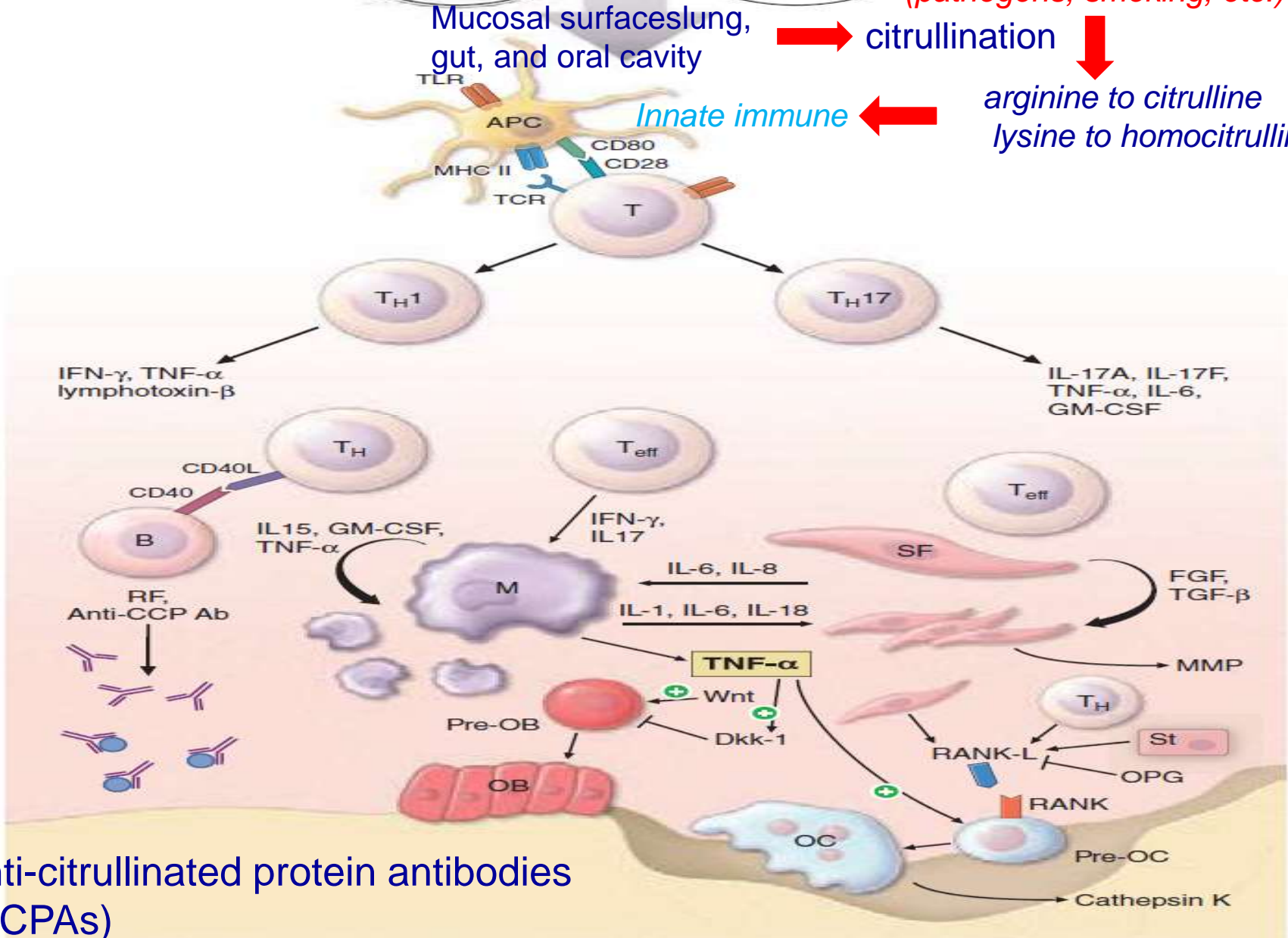
Mucosal surfaces lung, gut, and oral cavity

(pathogens, smoking, etc.)

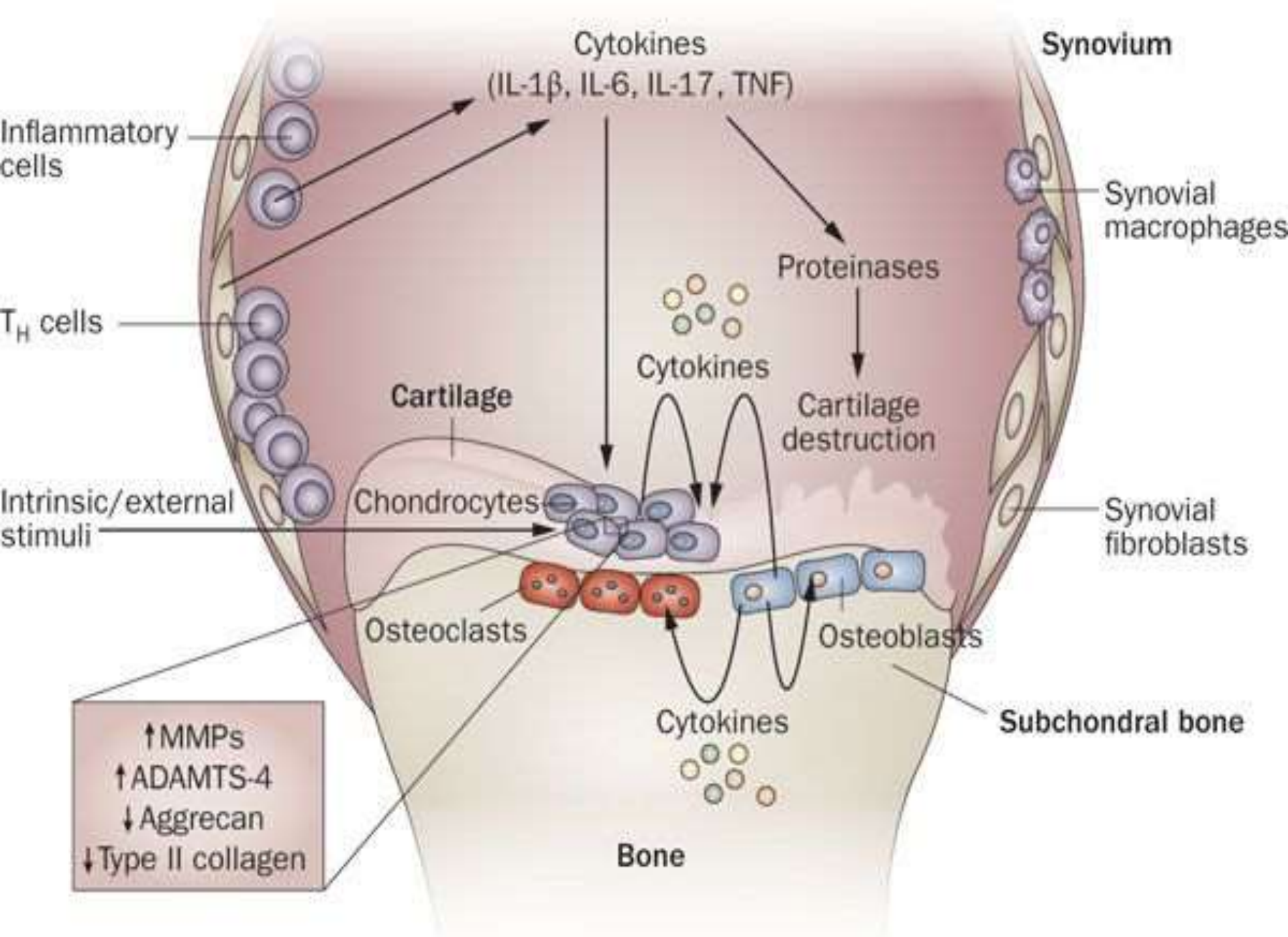
citrullination

arginine to citrulline
lysine to homocitrulline

Innate immune



anti-citrullinated protein antibodies (ACPAs)



THE HALLMARK OF OA CARTILAGE DEGENERATION IS A LOSS OF CARTILAGE MATRIX HOMEOSTASIS

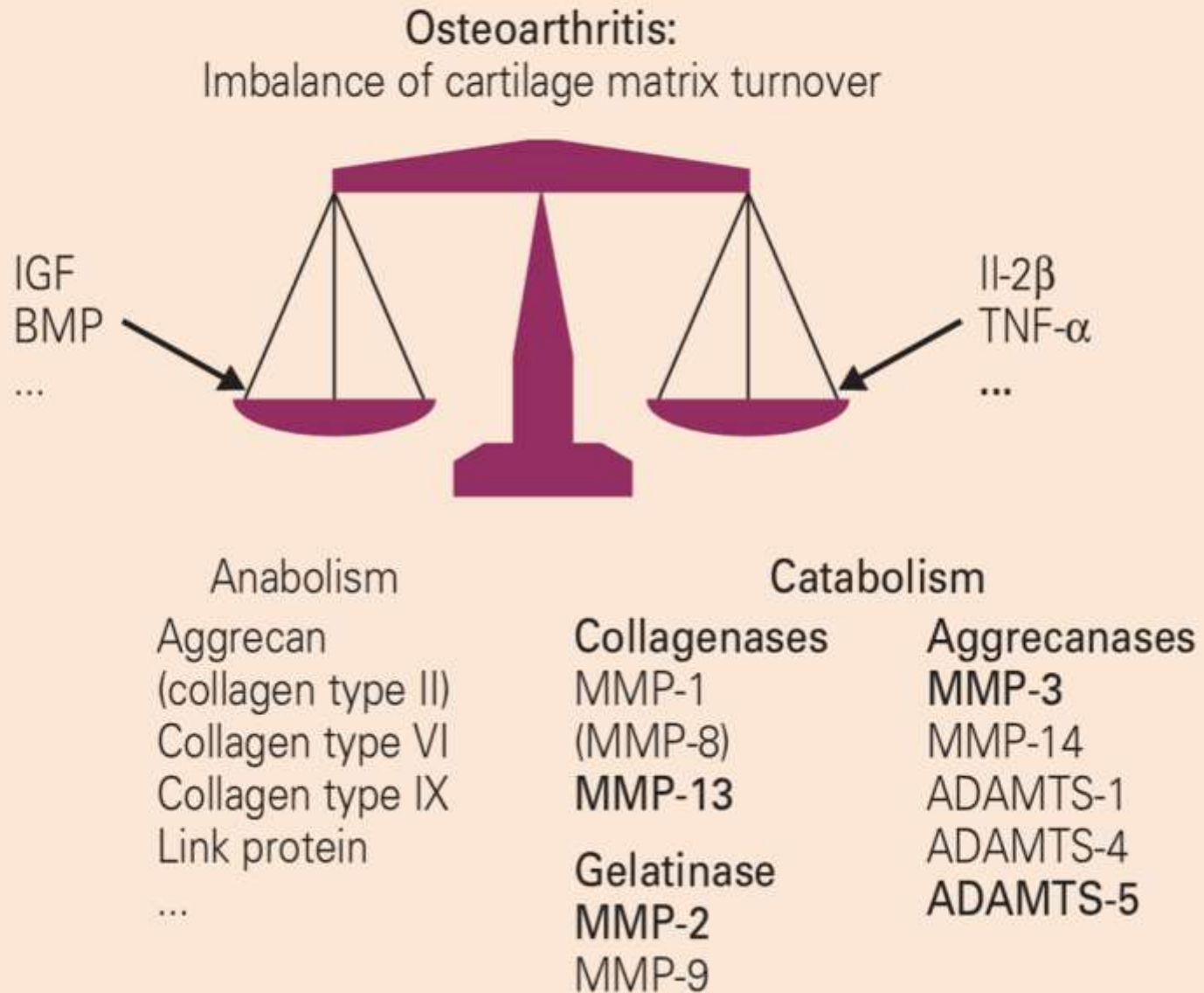


TABLE 380-1

CLASSIFICATION CRITERIA FOR RHEUMATOID ARTHRITIS

		Score
Joint involvement	1 large joint (shoulder, elbow, hip, knee, ankle)	0
	2–10 large joints	1
	1–3 small joints (MCP, PIP, thumb IP, MTP, wrists)	2
	4–10 small joints	3
	>10 joints (at least 1 small joint)	5
Serology	Negative RF and negative ACPA	0
	Low-positive RF or low-positive anti-CCP antibodies (≤ 3 times ULN)	2
	High-positive RF or high-positive anti-CCP antibodies (> 3 times ULN)	3
Acute-phase reactants	Normal CRP and normal ESR	0
	Abnormal CRP or abnormal ESR	1
Duration of symptoms	<6 weeks	0
	≥ 6 weeks	1