

RHEUMATOID ARTHRITIS DIAGNOSIS

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Rheumatoid Arthritis: Key Features

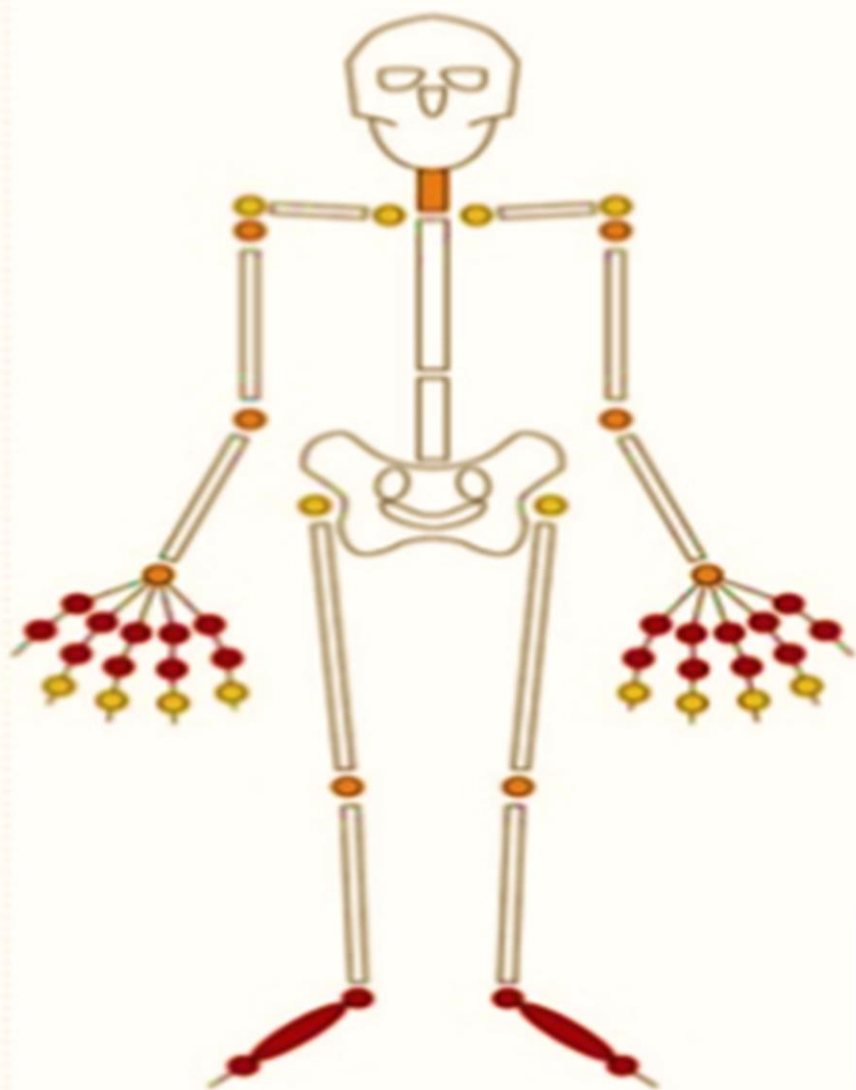
- Symptoms >6 weeks' duration
- Often lasts the remainder of the patient's life
- Inflammatory synovitis
- Palpable synovial swelling
- Morning stiffness >1 hour, fatigue
- Symmetrical and polyarticular (>3 joints)
- Typically involves wrists, MCP, and PIP joints
- **Typically spares certain joints**
- Thoracolumbar spine
- DIPs of the fingers

Rheumatoid Arthritis: Key Features

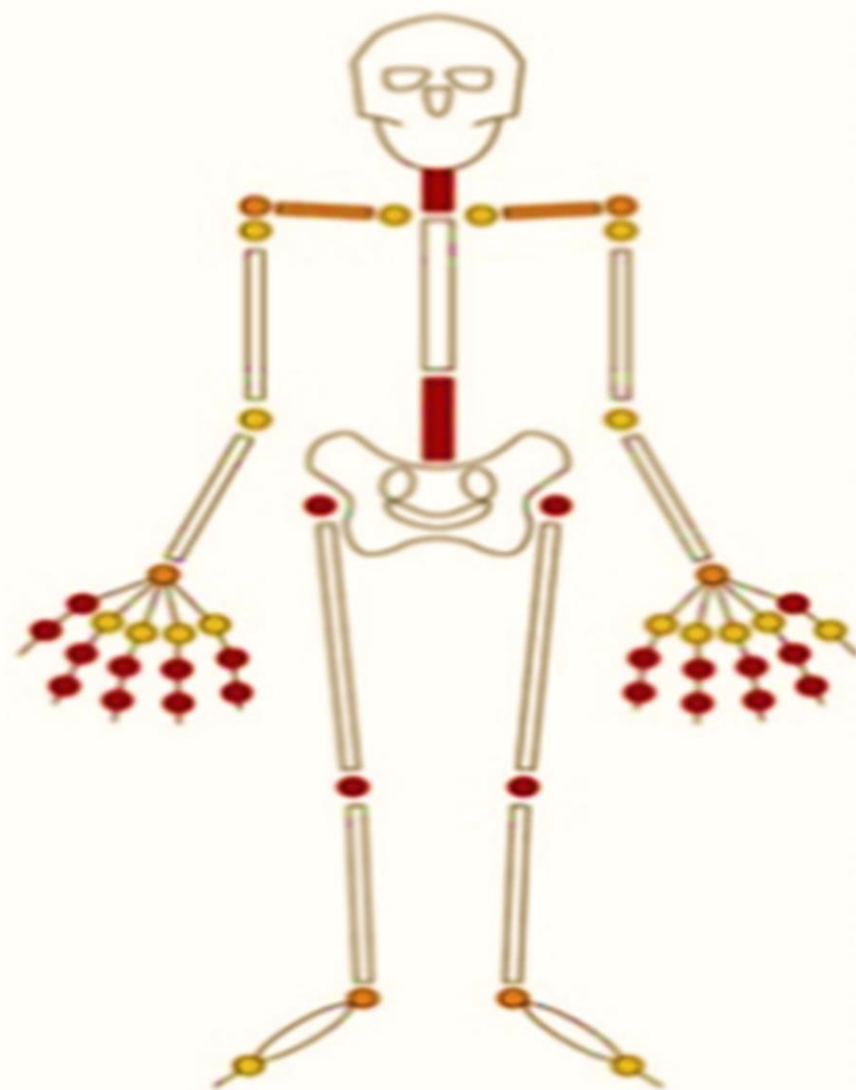
- May have nodules: subcutaneous or periosteal at pressure points
- Rheumatoid factor
- 45% positive in first 6 months
- 85% positive with established disease
- Not specific for RA, high titer early is a bad sign
- Marginal erosions and joint space narrowing on x-ray

Joint Involvement

Rheumatoid arthritis



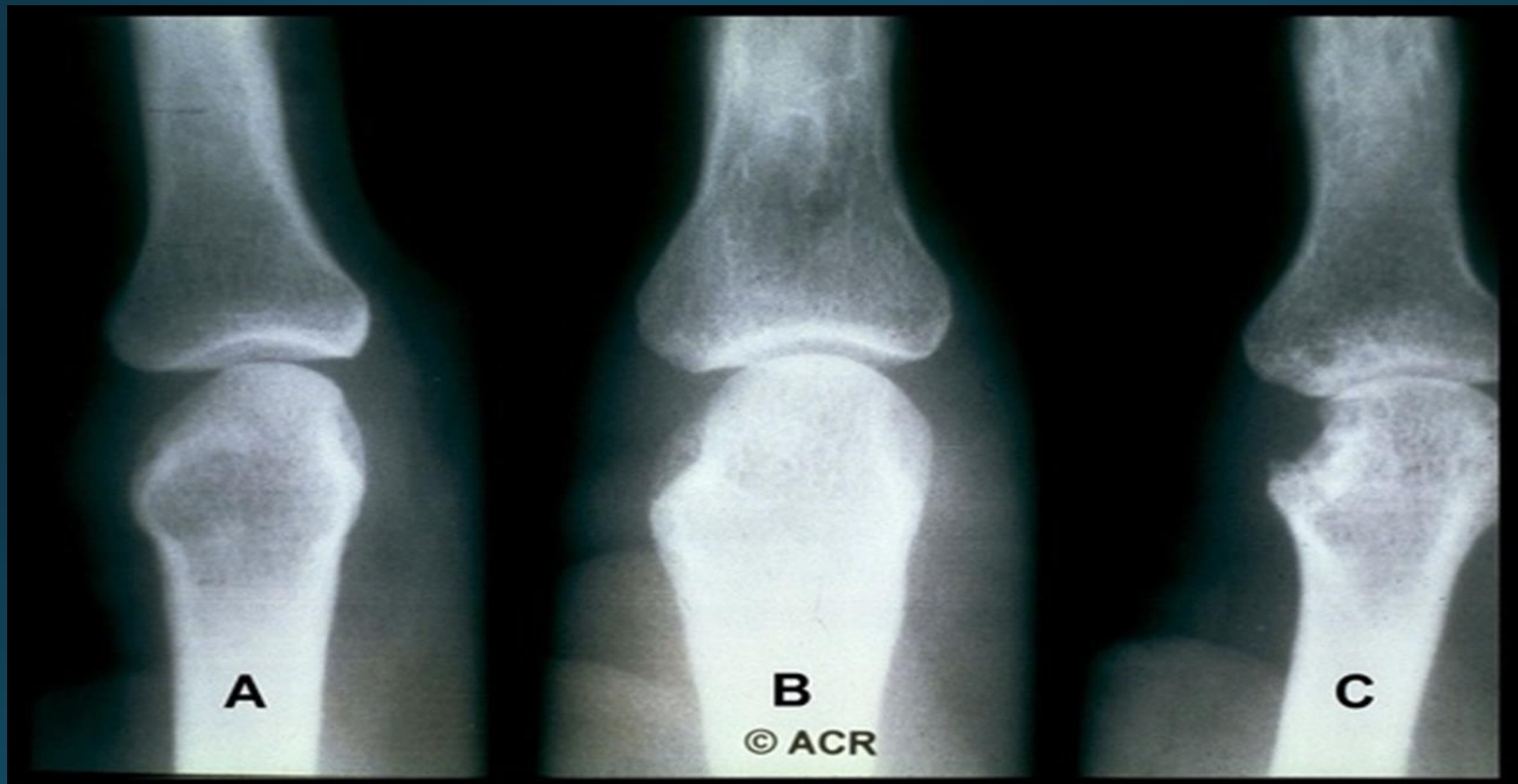
Osteoarthritis



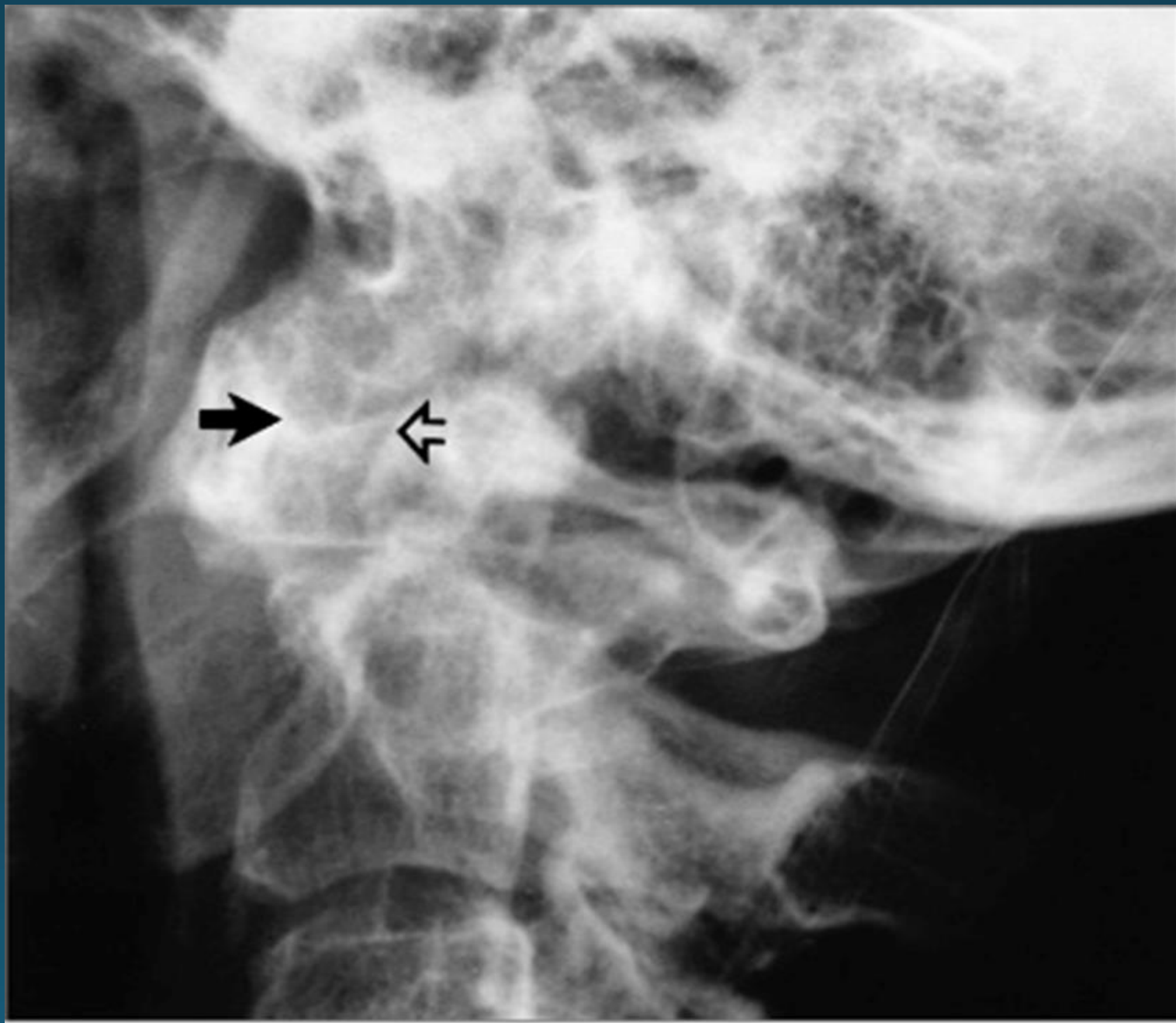
- = Very common
- = Common
- = Uncommon

Source: DiPiro JT, Talbert RL, Yee GC, Matzke GR, Wells BG, Posey LM: *Pharmacotherapy: A Pathophysiologic Approach, 8th Edition*: www.accesspharmacy.com

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Rheumatoid Factor (RF)

- Antibodies that recognize Fc portion of IgG
- Can be IgM , IgG , IgA
- 85% of patients with RA over the first 2 years become RF+
- A negative RF may be repeated 4-6 monthly for the first two year of disease, since some patients may take 18-24 months to become seropositive.
- Prognostic value: Patients with high titres of RF, in general, tend to have POOR PROGNOSIS, MORE EXTRA ARTICULAR MANIFESTATION.

Causes of positive test for RF

- Rheumatoid arthritis
- Sjogrens syndrome
- Vasculitis such as polyarteritis nodosa
- Sarcoidosis
- Systemic lupus erythematosus
- Cryoglobulinemia
- Chronic liver disease
- Infections- tuberculosis , bacterial endocarditis, infectious mononucleosis, leprosy, syphilis, leishmaniasis. Malaria, Rubella, Hepatitis C & B,...
- Malignancies
- Old age(5% women aged above 60)

Anti citrullinated peptide antibodies (ACPA)

- IgG against synovial membrane peptides damaged via inflammation
- Sensitivity (75%) & Specificity (95%)
- Both diagnostic & prognostic value
- Predictive of Erosive Disease
- Disease severity
- Radiologic progression
- Poor functional outcomes
- Most common ACPA is Anticcp
- Another ACPA is AntiMCV (Anti mutated citrullinated vimentin)

- **OTHER ACPAs** : Antibodies to
 - Citrullinated fibrinogen
 - Citrullinated Synthetic type 1 or type 2 collagen telopeptides
 - Citrullinated alpha enolase
- **SERUM 14-3-3eta**: an isoform of the 14-3-3 family of intracellular chaperonin proteins

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Other Lab Abnormalities

- Elevated APRs(ESR, CRP)
- Thrombocytosis
- Leukocytosis
- Eosinophilia
- ANA 30-40%
- Inflammatory synovial fluid
- Hypoalbuminemia

Acute Phase Reactants

Positive acute phase reactants (↑)

Mild elevations

- Ceruloplasmin
- Complement C₃ & C₄

Moderate elevations

- Haptoglobin
- Fibrinogen (ESR)
- α_1 – acid glycoprotein
- α_1 – proteinase inhibitor

Marked elevations

- C-reactive protein (CRP)
- Serum amyloid A protein

Negative acute phase reactants (↓)

- Albumin
- Transferrin

DIAGNOSTIC CRITERIAS

ACR Diagnostic Criteria (1987)

- Morning stiffness
 - Arthritis of 3 or more joints
 - Arthritis of hand joints
 - Symmetric arthritis
 - Rheumatoid nodules
 - Serum rheumatoid factor
 - Radiographic changes
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- **A person shall be said to have rheumatoid arthritis if he or she has satisfied 4 of 7 criteria, with criteria 1-4 present for at least 6 weeks**

2010 ACR/EULAR Classification Criteria

■ a score of $\geq 6/10$ is needed for classification of a patient as having definite RA

■ **A. Joint involvement** **SCORE**

■ 1 large joint 0

■ 2–10 large joints 1

■ 1–3 small joints (with or without involvement of large joints) 2

■ 4–10 small joints (with or without involvement of large joints) 3

■ >10 joints (at least 1 small joint)^{††} 5

■ **B. Serology** (at least 1 test result is needed for classification)

■ Negative RF *and* negative ACPA 0

■ Low-positive RF *or* low-positive ACPA 2

■ High-positive RF *or* high-positive ACP 3

■ **C. Acute-phase reactants** (at least 1 test result is needed for classification)

■ Normal CRP *and* normal ESR 0

■ Abnormal CRP *or* normal ESR 1

■ **D. Duration of symptoms**

■ <6 weeks 0

■ ≥ 6 weeks 1

DIFFERENTIAL DIAGNOSIS

- Viral polyarthritits: rubella ,parvovirus B19 , HBV, HCV, HTLV-I
- Systemic rheumatic diseases: SLE,Sjogren
- Palindromic rheumatism
- Reactive arthritis and arthritis of IBD, Psoriatic arthritis
- Lyme arthritis
- Polymyalgia rheumatica
- Crystalline arthritis
- Infectious arthritis
- Osteoarthritis
- Paraneoplastic disease
- Sarcoid arthropathy
- Multicentric reticulohistiocytosis
- Fibroblastic rheumatism (rare)

THANKS FOR YOUR ATTENTION