

RHEUMATOID ARTHRITIS

RA is the second most common form of arthritis.³⁵ RA is an inflammatory, systemic autoimmune disorder affecting the synovial tissue.^{18,50,65} The progression of RA also leads to difficulty with activities of daily living (ADL) and disability. RA affects women more commonly than men and occurs in adults between 20 and 40 years of age.^{2,20,27} Genetic and environmental factors have been linked as causes of RA.^{1,4,27,63}

Important Concept

Rheumatoid arthritis is an inflammatory, systemic autoimmune disorder affecting the synovial tissue.

The exact etiology of RA is unknown; it is believed to involve a trigger contributing to an autoimmune response.^{2,20,50} The immune response causes the body to attack its own tissue, leading to breakdown of joints.^{2,20,65} RA affects the synovial lining, which expands, damaging the extracellular matrix, cartilage, and bone.^{2,20,38,59} This autoimmune response also activates T cells, which secrete cytokines, causing expansion of the synovial layer. Cytokines increase activation of fibroblastlike cells and macrophages leading to breakdown of cartilage and bone (Fig. 24-3).^{2,20,63}

Early signs and symptoms associated with RA include fatigue, weight loss, fever, and musculoskeletal pain. Later signs or symptoms include pain, tenderness, swelling, redness, and stiffness in specific joints.^{2,9,20,27,63} In contrast to OA, RA morning stiffness can last hours or all day. Fatigue associated with RA may cause patients to need to rest through the day.^{2,63} Extraarticular manifestations can affect the lungs, heart, blood vessels, eyes, skin, and other organs.^{2,9,27,65} It is important for the physical therapist assistant (PTA) to be able to distinguish the main differences between OA and RA (Table 24-1).

Rheumatoid nodules, which occur on bony prominences, extensor surfaces, or pressure points, are a unique feature of RA.^{2,27,50,65} Several common joint deformities occur at the digits and toes, as follows^{49,63}:

- Metacarpophalangeal joints
 - Swelling of the joint
 - Volar subluxation
- PIP joints
 - Swan neck deformity (hyperextension of PIP joint and flexion of DIP joint)
 - Boutonnière deformity (flexion of PIP joint with hyperextension of DIP joint)
- Toes
 - Hallux valgus
 - Hammer toes

Management of Rheumatoid Arthritis

When treating a patient with RA, education and prevention are vital. Some important objectives of physical therapy and occupational therapy have a common theme of prevention: prevent pain; deformities; loss of normal function; and loss of normal social, physical, and work capabilities. An exercise routine should start with range of motion (ROM) exercises in pain-free ranges,^{2,20} and patients with RA should be informed not to overstretch an inflamed tissue to avoid any tears. To prevent contractures and muscular **atrophy**, it is crucial to maintain full ROM of joints through a graded exercise routine.²⁰ Muscle conditioning is also a key component of management, and strength can be increased through gentle isometric and dynamic exercise. Application of heat before exercise can result in better performance.²⁷ During an acute exacerbation, submaximal pain-free isometric exercises are recommended. During subacute and chronic phases, patients can implement dynamic exercise. Vigorous activity should be avoided during an exacerbation of symptoms. Any

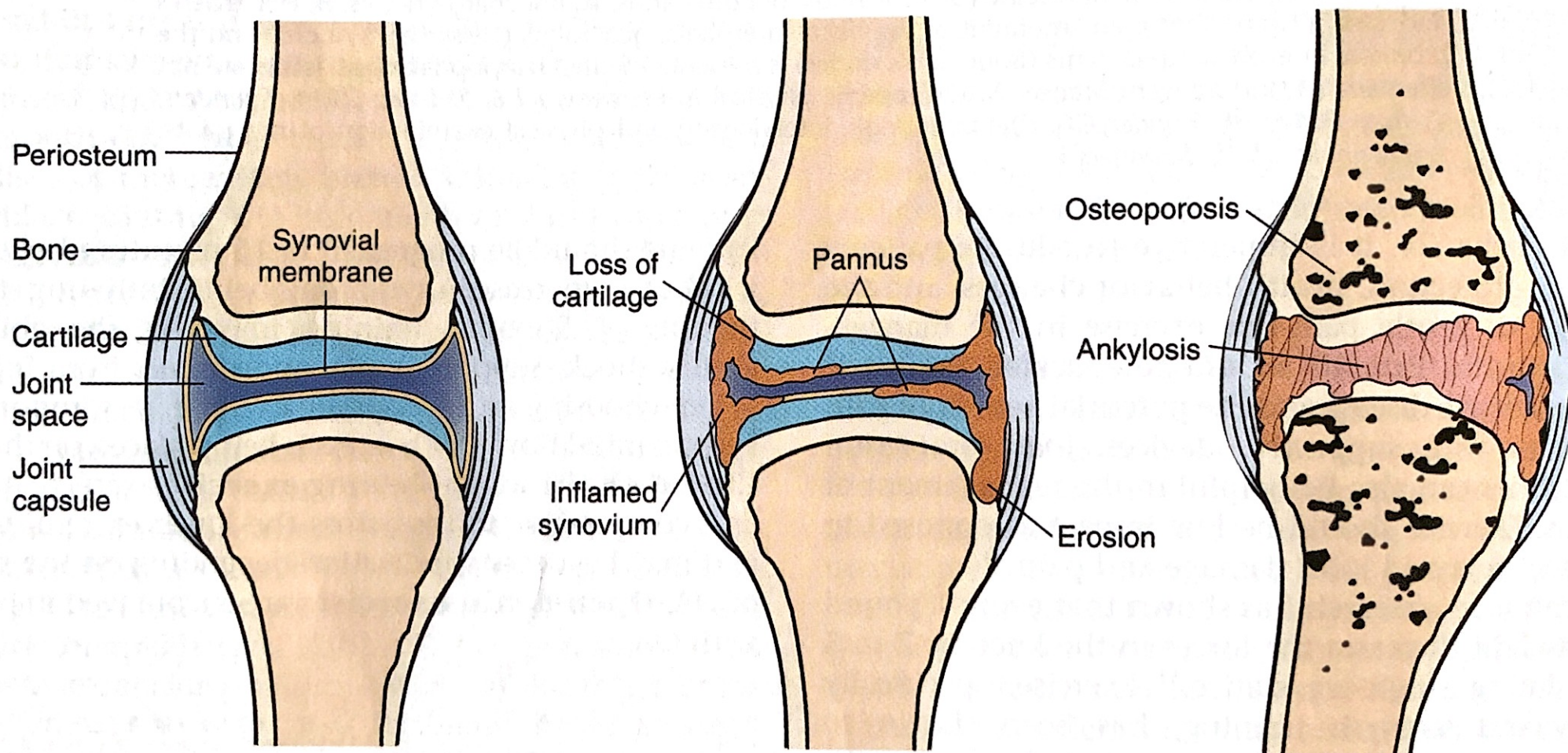


FIG 24-3 Schematic presentation of the pathologic changes in rheumatoid arthritis. Inflammation (synovitis) leads to pannus formation, obliteration of the articular space, and ankylosis. The periarticular bone shows disuse atrophy in the form of osteoporosis. (From Damjanov I: Pathology for the health professions, ed 4, St Louis, 2012, Saunders.)