

Structure of Osteoarthritis: Symptoms, Causes and Risk factors

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DESCRIPTION

Osteoarthritis is a prevalent orthopedic condition that affects millions of people worldwide. It is a chronic degenerative joint disease characterized by the breakdown of cartilage, which cushions the ends of bones in a joint. As one of the leading causes of pain and disability in the aging population, osteoarthritis has a significant impact on the quality of life for those affected. This comprehensive exploration of osteoarthritis aims to shed light on its causes, symptoms, diagnosis, treatment options, and ongoing research efforts, providing valuable insights into managing and living with this condition.

Structure of a joint

To understand osteoarthritis, it's essential to first comprehend the structure and function of a joint. A joint is the point where two or more bones meet, allowing for movement and flexibility in the body. The major components of a joint include:

Bones: The ends of two adjacent bones come together to form a joint. These bones are covered with a layer of smooth, protective tissue called cartilage.

Cartilage: Cartilage is a tough and flexible tissue that covers the ends of bones within a joint. It acts as a cushion, reducing friction and enabling smooth joint movement.

Synovium: The synovium is a thin membrane that lines the joint capsule and produces synovial fluid, which lubricates and nourishes the joint.

Joint capsule: The joint capsule is a fibrous tissue that surrounds the joint, providing stability and support.

Ligaments: Ligaments are strong bands of connective tissue that connect bones to each other and help control joint movement.

Symptoms

Osteoarthritis manifests with various symptoms, typically affecting weight-bearing joints like the knees, hips, and hands.

Common osteoarthritis symptoms include persistent joint pain, especially during or after activity, joint stiffness upon waking or after inactivity, reduced range of motion, and joint swelling or tenderness. Crepitus, a grinding sensation during joint movement, may occur. Muscle weakness and joint instability can develop as osteoarthritis progresses. These symptoms impact daily activities, potentially leading to disability. Osteoarthritis's gradual onset and progression make early diagnosis vital for effective management, which may include pain relief measures, exercise, and lifestyle adjustments to improve joint function and quality of life.

Causes and risk factors

Osteoarthritis is a complex condition with multiple contributing factors. While the exact cause of osteoarthritis is not always clear, several key factors are associated with its development.

These causes can vary from person to person, and it's often a combination of factors that lead to the onset and progression of osteoarthritis. Here are some of the primary causes and risk factors associated with osteoarthritis:

Age: Age is one of the most significant risk factors for osteoarthritis. As people get older, the wear and tear on their joints accumulates over time, leading to cartilage breakdown and the development of osteoarthritis.

Genetics: Genetic factors can play a role in an individual's susceptibility to osteoarthritis. If there is a family history of osteoarthritis, especially in close relatives, there may be a genetic predisposition to the condition.

Gender: Osteoarthritis can affect both men and women, but it tends to be more common in women, particularly after menopause. Hormonal changes may contribute to this gender difference.

Joint injuries and trauma: Previous joint injuries, such as fractures, ligament tears, or dislocations, can increase the risk of developing osteoarthritis in the affected joint. These injuries may lead to altered joint mechanics and accelerated cartilage wear.

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