

# **Osteonecrosis Treatment Market Size and Forecasts (2020 - 2030), Global and Regional Share, Trends, and Growth Opportunity Analysis Report Coverage: By Treatment Type (Drugs and Surgeries), End User (Hospitals, Specialty Clinics, Ambulatory Surgical Centers, and Others), and Geography (North America, Europe, Asia Pacific, Middle East & Africa, and South & Central America)**

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## **Abstracts**

The osteonecrosis treatment market size is expected to grow from US\$ 0.637 billion in 2022 to US\$ 1.021 billion by 2030; the market is estimated to register a CAGR of 6.08% from 2022 to 2030.

Key factors driving the market growth include the rising cases of osteonecrosis in people owing to an increasing number of road accidents and long-term use of steroids among patients. Additionally, the rising geriatric population and growing awareness about bone health benefit the osteonecrosis treatment market. However, the high cost associated with surgical treatments and the risk factors associated with treatment drugs hamper the osteonecrosis treatment market.

Osteonecrosis, also known as avascular necrosis (AVN), is a painful bone disease that results in the death of bone cells. It happens when blood flow to bones is disrupted and worsens over time. The causes of this condition include broken bones, dislocated hips, radiation therapy, and alcohol abuse.

Rising Cases of Orthopedic Injuries and Increasing Geriatric Population Drive

## Osteonecrosis Treatment Market Growth

According to statistics published by Clevelandclinic.org in 2021, 10,000–20,000 Americans are diagnosed with avascular necrosis (AVN) annually, with the condition affecting individuals of all ages and genders. Nearly 20% of people who experience hip dislocation develop AVN. The cases of osteonecrosis are rising globally owing to the increasing number of bone and joint injuries caused by fatal accidents. Although osteonecrosis more commonly affects the hip, it can also hamper the condition of the humerus, knee, and talus. As per an article published by StatPearls in 2023, AVN causes 10% of hip arthroplasties in the US, mostly in people aged 30–65. A displaced hip or knee might cut off blood supply to the leg. As a result, the tissues in the leg may not receive enough blood (a condition known as ischemia) and may die (a condition known as necrosis). Elbow or upper arm fractures can occasionally impede blood flow to the forearm, creating similar complications. When blood supply to a bone is interrupted, a portion of the bone may die, causing osteonecrosis. As per the article published by PubMed Central in January 2022, a cohort study included 170,934 major trauma patients. The study concluded that 78.0% of the major trauma patients with traumatic hip dislocations were injured in road traffic accidents, particularly in motor vehicle accidents (49.9%).

Older people are more likely to experience osteonecrosis as they are more prone to bone degeneration and fractures. In an article published by PubMed in 2020, a study was carried out to assess the effectiveness of cannulated internal fixation in long-term outcomes in 73 patients with femoral neck fracture (FNF), alongside identifying the risk factors affecting outcomes. The study results showed that 7 (i.e., ~10%) experienced femoral head necrosis, and 4 underwent hip replacement. According to the World Health Organization (WHO), 1 in 6 people worldwide will be aged 60 years or over by 2030, with an estimated 1.4 billion people over 60. Therefore, the burgeoning geriatric population and growing awareness about bone health favor the osteonecrosis treatment market.

### Market Opportunity

Development of Biomechanical Solutions and Ongoing Clinical Trials to Launch New Innovations Are Creating Opportunities in the Market.

Biomechanical techniques for avascular necrosis therapy attempt to solve joint mechanics and functioning concerns. AVN frequently causes structural changes in bone, particularly in weight-bearing joints, resulting in discomfort and decreased

mobility. Biomechanical solutions are vital in preserving joint function, reducing pain, and improving a patient's quality of life. These approaches often involve a multidisciplinary collaboration between orthopedic surgeons, biomechanical engineers, and rehabilitation specialists to provide comprehensive care. Various biomechanical approaches are currently being studied and utilized as a treatment for AVN. These approaches include developing specialized and customizable implants for patient-specific treatments and biomechanical analysis using advanced imaging to understand altered patient biomechanics. For instance, in an article published by Sage Journals in January 2023, a study was carried out to stop the advancement of avascular necrosis by restoring lunate vascularity in nine patients who were treated with vascularized bone grafts and interim radiocarpal spanning internal fixation. The study concluded that utilizing a local vascularized bone graft with temporary internal radiocarpal spanning fixation provides a therapeutic option with the advantages of internal immobilization.

Similarly, in an article published by Scielo Brazil in June 2023, a cross-sectional study included nine patients diagnosed with osteonecrosis of the femoral head. The study used Vicon Motion Capture Systems for patients' gait analysis. The study found that individuals with osteonecrosis of the femoral head adopt compensatory gait mechanisms to protect their hip joints. These mechanisms include increased pelvic motion and decreased knee flexion. The study also identified decreased moments for hip flexion and adduction, which may be related to muscle weakness in these groups. Therefore, biomechanical analysis is useful for evaluating the functionality of patients with AVN. This allows physicians to assess daily activities that can significantly affect patients' quality of life. Additionally, it helps them invest in immediate non-operative measures that can improve pain and functionality, eventually leading to better surgical outcomes.

Moreover, according to the European Union Clinical Trials Register, 7255 clinical trials were conducted with subjects under 18 years old, and data on older pediatric trials. According to an article published on MDPI in March 2023, an open-label, non-randomized, prospective clinical trial was conducted to evaluate the efficacy of mesenchymal stem cells (MSCs) in treating idiopathic osteonecrosis of the femoral head (ONFH) in patients with stage less than IIC in the ARCO classification. Eight patients were included in the trial. Autologous bone marrow (40 mL) was obtained four weeks before therapy, and MSCs were expanded under Good Manufacturing Practice (GMP) standards. The study concluded that using autologous mesenchymal stem cells (MSCs) is a safe and potentially effective treatment option for patients with femoral head osteonecrosis (ONFH).

## SEGMENTAL OVERVIEW

The “Global Osteonecrosis Treatment Market” is segmented based on treatment type, end user, and geography. Based on product type, the market is bifurcated into drugs and surgeries. Drug segments are further segmented into NSAIDs, blood thinners, cholesterol-lowering drugs, and others. Similarly, the surgeries segment is sub-segmented into total joint replacement/ total hip arthroplasty (THA), core decompression surgery, bone graft, osteotomy, etc. The drugs segment held the largest market share in 2022. However, the surgeries segment is anticipated to grow with the highest CAGR of 7.6%.

In terms of end users, the osteonecrosis market is segmented into hospitals, specialty clinics, ambulatory surgical centers, and others. The hospital segment is expected to record the highest CAGR in the market from 2022 to 2030. Osteonecrosis treatment involves complicated surgeries that need special medical attention, including diagnosis, treatment, and continuous monitoring. Hospitals play an essential role in delivering complete healthcare services to osteonecrosis patients. Depending on the disease's stage and severity, they provide various treatment options for osteonecrosis. Conservative techniques such as pain management, physical therapy, and lifestyle changes may be included in these treatments. Furthermore, surgical therapies such as joint-preserving operations or joint replacement surgeries may be undertaken in severe cases.

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