

**Knee Replacement Market Assessment, By Procedure Type [Total Knee Replacement, Partial Knee Replacement, Kneecap Replacement, Revision Knee Replacement, Others], By Implant Type [Metal, Plastic, Ceramic, Others], By End-user [Hospitals, Orthopedic Clinics, Ambulatory Surgical Centers, Others], By Region, Opportunities and Forecast, 2017-2031F**

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**Report description:**

Global knee replacement market is projected to witness a CAGR of 5.38% during the forecast period 2024-2031, growing from USD 10.1 billion in 2023 to USD 15.36 billion in 2031. Knee replacement (also known as knee arthroplasty) is a surgical procedure to rectify knee damage using implants made of metal, plastic, or ceramics. These surgeries aim to relieve the pain and suffering caused by knee damage. The elderly population is the major recipient of such surgeries due to age-associated knee problems like arthritis.

The knee replacement market is experiencing growth due to the growing prevalence of osteoarthritis. The rising geriatric population, which is most prone to knee damage, is fueling the demand for knee replacements. Furthermore, technological advances in minimally invasive surgeries and implants used for knee replacements sustain a tendency for continual market expansion. The rising prevalence of osteoarthritis and knee-associated damage across the globe is increasing the demand for more knee replacement surgeries. Knee replacement surgeries are more common in old-age people above the age of 55 years, thus, the growing geriatric population globally and especially in countries like Japan and United States, further propelling the market growth.

As per OECD data, on average 174 hip replacements per 100,000 people, and 137 knee replacements per 100,000 people are being performed. European countries like Switzerland, Finland, and others are leading the number of knee replacements among OECD countries.

High Prevalence of Knee-Associated Osteoarthritis

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The high prevalence of knee-associated osteoarthritis is critical for the expansion of the knee replacement market. Osteoarthritis affects bone joints, and most of the cases are related to knee joints. People over the age of 55 years and female population are highly susceptible to osteoarthritis. The old age population is affected by osteoarthritis due to degenerative bones and reduced synovial fluid while females are affected because of calcium deficiency. As per recent estimates, osteoarthritis cases are expected to grow during the forecasted years.

For instance, according to the WHO factsheet published in July 2023, more than 528 million people are affected by osteoarthritis across the world, out of which around 365 million cases are knee-associated, which requires solutions like knee replacements. Around 73% of these 528 million cases are contributed by the population above the age of 55 years and 60% of these cases belong to female population.

#### Technological Advancements

Technological advancements in the field of implants, minimally invasive surgeries, and knee replacement solutions are major contributors to the growth of the knee replacement market. Advancements such as precise limb alignment, improved accuracy in implant positioning, and implant sizing are enabling patient compliance. Surgical robotics, artificial intelligence, 3D printing, and computer navigation are some of the tools that help in achieving better quality knee replacement solutions. The need for accuracy and precision is driving manufacturers to design innovative solutions, further enhancing market growth.

For example, in October 2023, Medacta Group S.A. announced the launch of GMK SpheriKA, which is the world's first kinematic alignment-optimized femoral component indicated for total knee replacement. Medacta Group S.A. is a Switzerland-based company offering personalized, innovative, and sustainable solutions for sports medicine, joint replacement, and spine surgeries.

#### Government Initiatives Acting as Catalyst

The government's investment in research and development has considerably enhanced the knee replacement market.

Government initiatives aim to reduce the cost of joint replacement surgeries by reforming the medical device regulations and providing subsidies for such surgeries have significantly boosted the market growth. Furthermore, tax exemptions and collaborations with prominent manufacturers have increased domestic output, lowering reliance on imports. These actions have increased the availability and affordability of knee replacement surgeries establishing specific countries as vital players in the knee replacement market, promoting economic growth and technical innovation in the health care sector.

For example, the Comprehensive Care for Joint Replacement (CJR) Model of the United States government is going to complete eight performance years (PYs) in December 2024. The program is a Medicare Part A and B payment model that aims to facilitate finances for patients with hip, knee, and ankle replacements, also called lower extremity joint replacements. The program has been a major success over the course of 8 years and is a good example of government initiatives to support the knee replacement market.

#### Dominance of Total Knee Replacements

Total knee replacements have established their dominance with strong statistics in the market. Total knee replacement is one of the most effective and cost-efficient procedures for knee surgeries. It is most commonly done for patients suffering from highly painful, end-stage knee arthritis. Market data shows that there is a growing need for total knee replacement procedures owing to the growing geriatric population and decline in nutritional intake. Advancements in robotic-assisted surgeries and implant designing are anticipated to sustain the dominance of the total knee replacement segment within the knee replacement market. For instance, in February 2023, as per the press release by CK Birla Hospital, Delhi, more than 2.5 lakh total knee replacement surgeries are performed in India every year, and the number has increased almost three times during the last five years.

#### North America Dominates Knee Replacement Market

The knee replacement market is becoming dominant in the North American region. The region is anticipated to dominate the market with the highest value share due to its significant investment in research and development, technical breakthroughs made by major market players, and highly developed healthcare infrastructure in North American countries like the United States and Canada. The market is expanding in the region because of encouraging government initiatives and a favorable reimbursement environment for handling the rising number of surgical procedures. Regulatory approvals and further market expansion are also beneficial to manufacturers. A growing number of knee surgeries is also contributing to the market growth. For instance, the American College of Rheumatology estimates that 790,000 knee operations are performed in the United States each year. For instance, in April 2023, the USFDA approved the MISHA Knee System, manufactured by Moximed, Inc. for marketing in the

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United States. MISHA Knee System is an implant placed alongside the knee joint which helps in reducing the weight load and saving knee damage without removing the knee joint.

#### Future Market Scenario (2024 - 2031F)

- Growing prevalence of osteoporosis among the geriatric population and females is majorly driving the demand in the knee replacement market.
- Rising geriatric population which is more prone to knee damage across the globe is drastically contributing to the knee replacement market.
- Total knee replacement is the leading segment in the knee replacement market due to the high demand and volume of surgeries being performed.
- Increasing adoption of surgical robotics for knee replacement surgeries as it offers reduced pain, fewer complications, and increased accuracy.

#### Key Players Landscape and Outlook

Key participants in the knee replacement market include Zimmer Biomet Holdings Inc, B. Braun Melsungen AG, Smith & Nephew plc, Stryker Corporation, and Johnson & Johnson Services, Inc. characterizes this landscape, as these companies compete to outperform one another in terms of patient compliance, safety, accuracy, and unique features. The market prognosis remains positive, owing to increased demand for knee replacement surgeries. Knee replacement solution manufacturers are actively involved in designing innovative solutions. Collaborations and modern technologies are projected to increase competition in the market.

In March 2023, Stryker announced the launch of Mako Total Knee 2.0, at the AAOS 2023 annual meeting in Las Vegas. Mako Total Knee 2.0 is unveiled with new features like customizable workflow, intuitive design, innovative digital tensioner that allows surgeons to analyze the knee's stability during total knee arthroplasty without the need for further instrumentation. Mako Total Knee 2.0 has three key components, AccuStop haptic technology, 3D CT-based planning, and insightful data analytics.

In November 2023, Salona Global announced the launch of the Biodex SpaceTek Knee device, which is developed in collaboration with NASA to be used in space as well. Biodex SpaceTek Knee device is a revolutionary portable isokinetic knee dynamometer medical device for treating patients with knee replacements and knee injuries. The FDA approval for the product is still in progress.

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