

# **Bionic Smart Knee Market By Material (Titanium, Graphite) , By End User (Hospitals, Orthopedic Clinics, Others) : Global Opportunity Analysis and Industry Forecast, 2024-2033**

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## **Abstracts**

### **Bionic Smart Knee Market**

The bionic smart knee market was valued at \$1.3 billion in 2023 and is projected to reach \$2.8 billion by 2033, growing at a CAGR of 7.8% from 2024 to 2033.

A bionic smart knee is a unique prosthetic device utilized for knee replacement. The device is equipped with sensors, microprocessors, and Bluetooth technology, which facilitate the replacement procedure. This smart knee imitates the natural functions of a human knee, along with enhancing comfort and mobility. The primary features of bionic smart knee include its dynamic adjustment capabilities and remarkable gait analysis. Moreover, the device's connectivity features enable its integration with external devices or mobile apps, allowing users to monitor their performance and customize the settings or performance.

Advancements in technology and material sciences are driving the growth of the bionic smart knee market as these upgraded devices offer refined functionality and experience to the users. In addition, rise in the prevalence of mobility issues and knee injuries, along with surge in awareness regarding the availability of advanced therapeutics is boosting the adoption of bionic smart knee. An emerging trend in the bionic smart knee market is the neuroprosthetic regulation of the device. Control of the smart knee through neural abilities is anticipated to amplify the imitation of natural human gait by the device. To facilitate neural control, the agonist and antagonist muscle pairs critical for knee movement need to be surgically connected to mimic the natural

dynamics.

However, the availability of prosthetic devices and the facility to undergo a successful replacement are majorly restricted in developed regions, which hampers the market growth. In addition, the high cost of smart knee administration, maintenance, and insurance coverage prevents budget-sensitive patients from undergoing replacement, which limits the widespread expansion of the market. According to an article by the U.S. News & World Report—an American news magazine—on an average, robotic smart knee replacements cost around \$2,400 higher than the conventional replacement surgeries. On the contrary, the market is poised for lucrative opportunities due to the advent of remote health. Bionic smart knee enables remote checkups and post-operative monitoring, eliminating the hassle of multiple hospital visits after surgery.

### Segment Review

The bionic smart knee market is segmented into material, end user, and region. On the basis of material, the market is bifurcated into titanium and graphite. As per end user, it is divided into hospitals, orthopedic clinics, and others. Region wise, it is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

### Key Findings

On the basis of material, the titanium segment dominates the bionic smart knee market.

As per end user, hospitals are the leading segment in the market.

Region wise, North America was the highest revenue generator in 2023.

### Competition Analysis

The key players operating in the global bionic smart knee market include Stryker Corporation., Zimmer Biomet Holdings, Inc., Smith & Nephew plc, Johnson & Johnson, B. Braun Melsungen AG, Medtronic, Ossur, Wright Medical Group N.V., Exactech, Inc., and ConforMIS, Inc. These major players have adopted various key development strategies such as business expansion, new product launches, and partnerships, to strengthen their foothold in the competitive market.

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Expanded list for Company Profiles

Key Market Segments

By Material

Titanium

Graphite

### By End User

Hospitals

Orthopedic Clinics

Others

### By Region

North America

U.S.

Canada

Mexico

Europe

France

Germany

Italy

Spain

UK

Rest of Europe

Asia-Pacific

China

Japan

India

South Korea

Australia

Rest of Asia-Pacific

LAMEA

Brazil

South Africa

Saudi Arabia

Rest of LAMEA

Key Market Players

Stryker Corporation.

Zimmer Biomet Holdings, Inc.

Smith & Nephew plc

Johnson & Johnson

B. Braun Melsungen AG

Medtronic

?ssur

Wright Medical Group N.V.

Exactech, Inc.

ConforMIS, Inc.

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