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ORTHOPEDICS MARKETS

(SAMPLE COPY, NOT FOR RESALE)

Trends, Industry Participants, Product Overviews and Market Drivers

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1. Overview

1.1 Statement of Report

Orthopedics is a medical specialty that deals with the diagnosis and treatment of disorders and injuries to the skeletal system and the muscles, joints and ligaments associated with it. The orthopedics market has emerged as one of the most vibrant industries in the medical equipment sector. In the recent past, the orthopedics industry has witnessed major private equity transactions, several notable mergers and innovative product launches. As such, the orthopedics market has been experiencing a growth rate of nearly █% to █% annually. █ market leaders currently dominate the global market, each with about \$█ or more in annual sales. These market leaders are focused mainly on developing and marketing products that have a relatively high minimum threshold level of sales. Therefore, there is plenty of scope for mid-sized orthopedics companies to concentrate on less-contested, higher-growth sectors of the orthopedics market. These companies can concentrate on higher-growth extremities and biologics, which are likely to experience a growth rate of █% to █% for the next few years.

The major growth segments within the joint-reconstruction sector are: 1) gender-specific knee implants and 2) hip and knee resurfacing products. The market for hip and knee replacement procedures is growing with the increasingly aging population and a rising number of younger patients opting for joint arthroplasty procedures. New product rollouts, innovative procedure techniques and favorable clinical trial outcomes are some of the key growth drivers in this sector. The availability of innovative products and positive clinical trial data for spinal non-fusion product lines indicates the superiority of this technology over existing technologies. Its benefit over the traditional spinal fusion techniques is propelling the demand and growth of non-fusion spinal implants.

Technological innovations are propelling the orthobiologics market, and this segment will continue to be the focus of investors. Orthobiologics is, in fact, the fastest-growing segment within the orthopedic devices sub-sector, with more than █ products at various stages of clinical development. This report predicts an increased use of orthobiologics, such as bone morphogenic proteins, as well as autologous growth factors in orthopedic and spine surgeries to promote segment growth in the next few years. Another important segment is biodegradable implants, which are propelling the growth of the trauma fixation devices market. There are at least █ biodegradable implants under clinical development with immense potential.

The longer durability of new implants, due to advances in materials and design, is also resulting in more surgeries among young patients. In the past, younger patients used to defer surgeries involving implants because of the high incidence of wear. Most new implants now claim to last up to █ to █ years, which is enabling young patients to have surgery earlier and live a pain-free lifestyle. Surgical procedures such as hip resurfacing and partial knee replacement are now options for young patients. These procedures are generating demand in young adults in their █ and █ who presently are forced to endure pain due to the lack of alternatives.

The purpose of this TriMark report is to provide a detailed analysis of the market for orthopedics, which includes global orthopedic product sales by market segment, global market leaders in orthopedic implants and their sales data, the global orthopedics market by geography, and future projections for each of these segments. Globally, the major orthopedic products witnessed sales revenue of \$█ in █; the U.S. was the largest market with a contribution of \$█, and the non-U.S. regions contributed \$█. In █, the product segments and sales revenue were reconstructive devices (\$█), fracture repair (\$█), arthroscopy/tissue repair (\$█), spinal implants/instrumentation (\$█), orthobiologics (\$█) and other orthopedic products (\$█). The key players and their sales revenue in the orthopedics market in █ were Stryker (\$█), DePuy (a Johnson & Johnson company) (\$█), Zimmer (\$█), Medtronic (\$█), Synthes (\$█), Smith & Nephew (\$█) and Biomet (\$█). Geographically, the U.S. took the leading role (\$█), and the other countries/regions in descending order were the EMEA region (\$█), Japan (\$█), the Pacific region (\$█), and the Canada and Latin American region (\$█). TriMark estimates that the overall orthopedics market will grow at a compounded annual growth rate (CAGR) of █% from █ on and reach a value of \$█ in █.

The main objectives of this analysis are:

- Identifying the current technology developments in the manufacturing of orthopedic implants.
- Understanding the different segments of the orthopedics market, such as hip, knee, shoulder, upper extremities and lower extremities.
- Obtaining a complete understanding of the emerging orthobiologic products, from their basic principles to their clinical applications.
- Discovering feasible market opportunities by identifying high-growth applications in different orthopedics segments.
- Focusing on global development of the industry through an in-depth analysis of the major world markets for orthopedic products, including growth forecasts.
- Presenting market figures regarding the current value of orthopedic products, market projections, market share, key players and sector growth rates.

Key questions answered in this study are:

- How much was the total revenue generated by the global orthopedics industry in [REDACTED] / [REDACTED]?
- How much was the total revenue earned by the individual segments, such as extremity hardware, foot and ankle products, orthobiologics, and reconstructive joint devices in [REDACTED] / [REDACTED]?
- What are the key market drivers for orthopedic products?
- What are the currently available viscosupplements in the market?
- What are the current forces that are shaping the implant market?
- Who are the leaders in each segment of the orthopedics market in previous years?
- What can be done to cut down on overspending in orthopedics in the U.S.?
- What are the list prices of the various orthopedic implants?
- What, according to the current estimate, is the single largest segment of the medical device industry?
- What is the estimated market for back-pain drugs?
- Which orthopedics market areas have the greatest potential for growth?

This report contains:

- A detailed analysis of recent trends in the innovations of orthopedic devices.
- In-depth profiles of the leading companies focusing on technologies and product development in orthopedics.
- A market forecast for different segments of orthopedics.
- A reimbursement scenario for orthopedic surgical procedures in the U.S.
- An analysis of potential new stem cell applications in the clinical sector.
- Market leaders in each segment of orthopedics and their shares in the market.
- The latest data on the orthopedic braces and supports market.
- An analysis of the U.S. market for soft tissue and sports medicine.
- Leaders in the European market for orthopedic products.

1.2 Scope of the Report

A thorough overview of the market for orthopedics is provided, together with analyses of the funding trends, intellectual property, market opportunity, emerging areas of application, pipeline of products and stem cell applications in orthopedics. This study emphasizes companies that are actively developing and marketing orthopedic products that find use in surgical procedures involving knee, hip, shoulder, upper extremities and lower extremities. The report also discusses in detail the synthetic and biologic products finding applications in orthopedic surgical procedures and the product details. Other TriMark Publications reports related to the different healthcare sectors can be found at <http://www.trimarkpublications.com>.

- Identifying the key technology and market trends that drive or affect these markets.
- Assessing the regional significance for each product and market segment for proper emphasis of further regional/national primary and secondary research.
- Completing a confirmatory primary research assessment of the report's findings with the assistance of expert panel partners from the industry being analyzed.

1.4 Executive Summary

It is estimated that the global orthopedics industry generated sales of nearly \$ [REDACTED] in [REDACTED]. This figure is likely to grow by nearly [REDACTED] % to [REDACTED] % annually over the next [REDACTED] years.¹ However, according to the estimates made by [REDACTED], updated [REDACTED], the global orthopedics market was worth \$ [REDACTED] in [REDACTED]. According to [REDACTED], the global orthopedics market was worth \$ [REDACTED] in [REDACTED]. The latter two estimates include the market for orthopedic surgical equipment, bone cement, etc. Another source states that orthopedics has grown into a \$ [REDACTED] global market.² Thus, this report makes use of data provided by [REDACTED] different sources. According to [REDACTED], about [REDACTED] multinational companies dominate the orthopedics industry, each with about \$ [REDACTED] or more in annual sales. The size of these companies makes them concentrate their marketing and R&D efforts on products they believe will have a comparatively high minimum threshold level of sales. As such, there is scope for mid-sized orthopedics companies to target less-contested, higher-growth sectors of the orthopedics market. Orthopedic devices are generally categorized into several primary sectors corresponding to the major product categories within the orthopedics field. They include reconstruction, trauma, arthroscopy, spine and biologics. Extremity hardware comprises implants and other devices to replace or reconstruct injured or diseased joints and bones of the foot, ankle, hand, wrist, elbow and shoulder. In the orthopedics market, extremities hardware is one of the fastest-growing market segments with a CAGR of [REDACTED] % to [REDACTED] %. The extremity hardware market had sales of about \$ [REDACTED] globally in [REDACTED].³ The major trends in extremity hardware are procedure-specific and anatomy-specific devices, locking plates, and an increased growth in total ankle arthroplasty procedures.

The foot and ankle reconstruction segment comprises implants and other devices to reconstruct injured or diseased joints and bones in the foot and ankle. It is estimated that the foot and ankle extremity hardware market generated sales of nearly \$ [REDACTED] globally in [REDACTED].⁴ A large part of the foot and ankle hardware market includes plating and screw systems for reconstructing and fusing joints or repairing bones after traumatic injury. The key trends in foot and ankle hardware comprise the use of external fixation devices in diabetic patients, total ankle arthroplasty and advanced tissue fixation devices.

Upper extremity reconstruction refers to implanting devices to replace, reconstruct or fixate injured or diseased joints and bones in the hand, wrist, elbow and shoulder. It is estimated that the upper extremity hardware market generated sales of about \$ [REDACTED] globally in [REDACTED], nearly [REDACTED] % of which is in total shoulder replacement implants.⁵ The key trends in upper extremity hardware are minimally-invasive fracture repair devices and next-generation joint arthroplasty systems.

Biologic products in orthopedics use both biological tissue-based and synthetic materials to regenerate damaged or diseased bone and to repair damaged or diseased soft tissue. These products induce the body's natural regenerative ability to heal itself, minimizing the need for invasive implant surgery. Biologic products offer a lower morbidity solution to autograft, a procedure that uses a patient's own bone or soft tissue. The three main categories of biological bone grafting products are osteoconductive, osteoinductive and osteogenic. Each type refers to the process by which the materials affect bone growth. Osteoconductive materials act as a scaffold to support the formation of bone but do not stimulate new bone growth, whereas osteoinductive materials trigger bone growth. The osteogenic materials add the latter with a cell-based component. Without viscosupplements, tissue processing services and bone morphogenic protein, it is estimated that the biologics market earned sales of nearly \$ [REDACTED]

1 [REDACTED]
 2 [REDACTED]
 3 [REDACTED]
 4 [REDACTED]
 5 [REDACTED]

globally in [REDACTED].⁶ Most of the reconstructive joint devices are employed to replace or repair joints that have deteriorated or have been damaged as a result of disease or injury. Though there are non-surgical treatment alternatives such as oral medications, injections and joint fluid supplementation, severe cases of disease or injury very often necessitate reconstructive joint surgery. In this type of surgery, the bone area surrounding the affected joint is modified and one or more manufactured components and bone cement are inserted.

The knee joint has the surfaces of three distinct bones: the lower end of the femur, or thigh bone; the upper end of the tibia, or shin bone; and the patella, or kneecap. Cartilage on any of these surfaces may be damaged due to disease or injury, resulting in pain and inflammation and necessitating knee reconstruction. Knee reconstruction was the largest segment of the reconstructive joint device market in [REDACTED] with estimated sales of about \$ [REDACTED] globally.⁷ One of the key trends in knee reconstruction is the use of alternative surface materials to extend implant life and increase conservation of the patient's bone to reduce surgical trauma and speed up recovery.

The hip joint is a ball-and-socket joint that helps with the motion that the hip performs in daily life. It is most usually replaced due to degeneration of the cartilage between the head of the femur, or the ball, and the acetabulum, or hollow portion of the pelvis (the socket). This degeneration results in pain, stiffness and a reduction in hip mobility. It is estimated that the worldwide hip reconstruction market generated sales of about \$ [REDACTED] in [REDACTED].⁸ The key trends in hip replacement procedures and implants are to enhance implant life and to preserve bone stock for possible future procedures. Many new products have been developed incorporating advances in bearing surfaces from the traditional polyethylene surface. These alternative bearing surfaces comprise metal-on-metal, cross-linked polyethylene and ceramic-on-ceramic combinations which show enhanced wear characteristics, leading to longer implant life.

Besides advances in bearing surfaces, implants that preserve more natural bone have been developed to minimize surgical trauma and recovery time for patients. These implants are known as bone-conserving implants, and they leave more of the hip bones intact. Bone-conserving procedures have been developed to enable patients to delay their first total hip procedure and may significantly increase the time from the first procedure to the time when a revision replacement implant is required. Resurfacing of the femoral head permits surgeons to reconstruct the patient's hip while leaving the femoral head and neck intact.⁹

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