United States 3D Printing Medical Devices Market Report and Forecast 2025-2034

Market Report | 2025-06-20 | 250 pages | EMR Inc.

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Report description:

The United States 3D printing medical devices market was valued at USD 1093.81 Million in 2024, driven by the increasing demand for personalized medical solutions and advancements in biocompatible 3D printing materials in the region. The market is anticipated to grow at a CAGR of 17.10% during the forecast period of 2025-2034, with the values likely to reach USD 5302.87 Million by 2034. The market is driven by rising adoption of patient-specific implants and devices, coupled with strong research funding and regulatory support. Growth in orthopedic and dental applications is also expected during the forecast period.

Key segments contributing to market expansion include orthopedic and dental applications, where 3D printing offers cost-effective solutions and improved customization over traditional manufacturing methods. In orthopedics, for instance, custom joint replacements and spinal implants are becoming more common, while in dental care, 3D-printed crowns, bridges, and aligners are seeing widespread adoption. Furthermore, hospitals and research institutions are increasingly integrating 3D printing into their workflows for pre-surgical planning and medical training, creating new avenues for growth across the healthcare ecosystem.

United States 3D Printing Medical Devices Market Overview

3D printing medical devices involves manufacturing patient-specific implants, surgical instruments, and prosthetics using additive layer technology. This process enhances design precision, reduces production time, and enables personalized healthcare solutions, particularly beneficial in orthopedics, dental, and cranial surgeries. The market is witnessing robust growth, driven by technological advancements, a strong healthcare infrastructure, and increasing demand for custom medical solutions. Supportive regulatory frameworks and rising clinical adoption further strengthen market potential. The market is poised to grow at a CAGR of 17.10% during the forecast period of 2025-2034.

United States 3D Printing Medical Devices Market Growth Drivers

High Prevalence of Oral Diseases to Drive the Application of 3D Printing Managing Dental Issues

The increasing incidence of oral health disorders significantly drives the demand for 3D printing technologies in dental applications across the United States. In May 2024, a study by Emeka Okobi et al. reported that nearly 90% of adults aged 20-64 had experienced dental caries, while approximately 47% of adults aged 30 and older suffered from periodontal disease. This widespread prevalence is accelerating the adoption of customized, cost-effective dental devices through 3D printing, supporting market growth.

United States 3D Printing Medical Devices Market Trends

The market is experiencing key trends such as the introduction of new products and a rise in FDA approvals.

New Product Launches Accelerate Innovation in the Market

The market is experiencing strong growth driven by the introduction of advanced, application-specific systems. A notable example occurred in June 2021, when Stratasys Ltd. launched the J5 MediJet, a compact, multi-material 3D printer designed for creating sterilizable, biocompatible medical models and surgical guides. This innovation highlights how new product launches are boosting market value and expanding clinical accessibility to precision medical printing.

Increasing FDA Approvals to Propel Expansion in United States 3D-Printed Medical Devices Market

The growing number of FDA approvals for 3D-printed medical implants is accelerating the adoption of personalized and precision healthcare solutions in the United States. For instance, in April 2024, 3D Systems received FDA clearance for its patient-specific 3D-printed PEEK cranial implants, enabling safer and more cost-effective cranial reconstruction. These regulatory endorsements validate the safety and efficacy of advanced 3D printing technologies, encouraging broader clinical use. This trend of expanding FDA approvals is a key driver stimulating innovation and robust growth within the market.

United States 3D Printing Medical Devices Market Segmentation

The market report offers a detailed analysis of the market based on the following segments:

Market Breakup by Component

- Equipment
??- 3D Printers
??- 3D Bioprinters

- Services and Software
- Material

??- Metals and Alloys Steel Titanium Others
??- Polymers Nylon Glass-filled Polyamide Epoxy Resins Photopolymers Plastics Biological Cells Others
??- Biological Cells
??- Others

Market Breakup by Technology

- Fused Deposition Modelling (FDM)
- Bioprinting

- Selective Laser Sintering (SLS)
- Electron Beam Manufacturing (EBM)
- Stereo-lithography
- Binder Jetting
- Others

Market Breakup by Application

- Medical Implants
- Prosthetics
- Wearable Devices
- Tissue Engineering
- Dental
- Others

Market Breakup by End User

- Hospitals
- Specialty Clinics
- Research and Academic Institutes
- Pharmaceutical & Biotechnology Companies
- Others

Market Breakup by Region

- New England
- Mideast
- Great Lakes
- Plains
- Southeast
- Southwest
- Rocky Mountain
- Far West

United States 3D Printing Medical Devices Market Share

Equipment to Lead the Market Share by Component

The equipment segment is expected to lead the market due to its central role in enabling advanced, patient-specific 3D printing applications. 3D printers are being widely adopted for creating anatomical models, implants, and surgical tools with high precision and reduced lead times. The 3D bioprinters category is gaining traction in tissue engineering and regenerative medicine, supporting the development of customized tissue scaffolds and organ models.

A key example is the Stratasys J5 MediJet, launched in June 2021, which demonstrates the direction of innovation in this space. This all-in-one 3D printer supports multi-material and multi-color printing within a compact, office-friendly system, enabling the efficient production of patient-specific surgical guides and anatomical models. By enhancing workflow efficiency and lowering operational costs, such products are becoming essential assets for hospitals and medical device companies. Alongside equipment,

the market also includes services and software, such as modeling and simulation platforms, as well as materials used in 3D printing, like biocompatible polymers and metals.

United States 3D Printing Medical Devices Market Analysis by Region

The 3D printing medical devices market in United States spans across key regions including New England, Mideast, Great Lakes, Plains, Southeast, Southwest, Rocky Mountain, and Far West. The Far West region includes states like California, Washington, Oregon, Alaska, and Hawaii. The region boasts some of the most technologically advanced healthcare systems in the country. Leading academic medical centers, such as those affiliated with UCLA, Stanford, and UCSF, actively collaborate with technology firms to explore new clinical applications of 3D printing. This fosters a robust environment for innovation and early adoption. It is home to many of the country's top biotechnology, MedTech, and 3D printing companies, including those based in the Silicon Valley corridor. These organizations are heavily involved in the development of patient-specific implants, anatomical models, and even bioprinted tissues. Partnerships between tech firms and medical researchers accelerate the commercialization of cutting-edge 3D printed medical solutions.

Leading Players in the United States 3D Printing Medical Devices Market

The key features of the market report comprise patent analysis, funding and investment analysis, and strategic initiatives by the leading players. The major companies in the market are as follows:

Koninklijke Philips N.V.

Koninklijke Phillips N.V., headquartered in Amsterdam, Netherlands, and established in 1891, is actively engaged in the 3D printing medical devices market through Philips Additive. The company collaborates with global leaders like Markforged, EOS, and Meltio to offer advanced 3D printing solutions, including metal and composite technologies. These solutions support medical device manufacturing by enabling precise, durable, and complex component production across various healthcare applications.

Stratasys

Established in 1989 and headquartered in Eden Prairie, Minnesota, Stratasys Ltd. is a global leader in polymer 3D printing. The company plays a prominent role in the 3D printing medical devices market. In February 2023, Stratasys partnered with Ricoh USA, Inc. to expand access to patient-specific 3D-printed anatomic models in the United States. These models support surgical planning, diagnostics, and clinician education by providing realistic, biomechanically accurate representations of patient anatomy. Through this collaboration, Stratasys offers an integrated, cloud-based solution enabling faster, more accessible, and cost-effective production of medical models for hospitals and clinics.

Materialise NV

Materialise NV, founded in 1990, is a global leader in 3D printing solutions. The company plays a prominent role in the 3D printing medical devices market through its Mimics inPrint software, the first to receive FDA clearance for creating diagnostic 3D-printed anatomical models. This advancement supports U.S. hospitals in establishing point-of-care 3D printing facilities, enhancing personalized surgical planning and patient care. Materialise's medical division offers certified software platforms and services that facilitate the production of patient-specific surgical guides, implants, and models for clinical use.

GE Healthcare

Headquartered in Chicago, Illinois, GE Healthcare is actively involved in the United States 3D printing medical devices market. In

May 2022, GE Additive partnered with Orchid Orthopedic Solutions to advance electron beam melting (EBM) technology for large joint orthopedic implants, aiming for scalable, precise production by 2024.

Other key players in the market include Johnson & Johnson MedTech, 3D Systems, Inc., Proto3000, PRODWAYS GROUP, Nikon SLM Solutions AG, and CELLINK.

Key Questions Answered in the United States 3D Printing Medical Devices Market Report

- What was the United States 3D printing medical devices market value in 2024?
- What is the United States 3D printing medical devices market forecast outlook for 2025-2034?
- What major factors aid the demand for the United States 3D printing medical devices market?
- How has the market performed so far, and how is it anticipated to perform in the coming years?
- What are the market's major drivers, opportunities, and restraints?
- What are the major United States 3D printing medical devices market trends?
- Which component is expected to dominate the market segment?
- Which technology is projected to lead the market segment?
- Which application is anticipated to drive the market segment?
- Which end user is likely to dominate the market segment?
- Who are the key players in the United States 3D printing medical devices market?
- What are the current unmet needs and challenges in the market?
- How are partnerships, collaborations, mergers, and acquisitions among the key market players shaping the market dynamics?

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