

Healthcare 3D Printing Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The healthcare 3D printing market is expected to register a CAGR of 17.5% during the forecast period.

The outbreak of the COVID-19 pandemic has significantly impacted the overall global economy and, subsequently, the 3D printing industry. Due to the rapid spread of the virus, the governments issued an order for the complete lockdown of some key cities. The lockdowns affected the production of 3D printing manufacturers, attributed to the labor shortage and the complete disruption of logistics and supply chains in the nation. According to a Springer Journal published in December 2020, the additive manufacturing community emerged to fight against the lack of medical devices during the COVID-19 pandemic. The study stated that diverse designs were produced and used in hospitals by patients and health workers. There was also an increasing use of 3D-printed devices, such as face shields, masks, valves, and nasopharyngeal swabs, which also positively impacted the market's growth. Furthermore, as per the QMED article published in April 2021, in the battle against COVID-19, 3D printer companies specializing in a range of services pivoted their technology and designs to support relief efforts, mass-producing medical products essential for providers in a pandemic. Thus, owing to the increasing use of 3D printing in combating COVID-19, the market is gaining traction and is expected to experience an upward trend over the forecast period.

The significant factors fueling the market's growth are technological advancements leading to enhanced applications, increasing medical applications, and an increasing trend in customized 3D printing. Technological advances are contributing to the market's growth. For instance, in February 2021, Apollo Hospitals and Anatomiz3D Medtech collaborated to design and build hospital 3D printing labs in India that would enable doctors to visualize and print implants for complicated surgical cases.

In March 2022, Zoriox Innovation Labs, consisting of a team of surgeons, dentists, mechanical engineers, biomedical engineers, software engineers, graphic designers, prosthetists, and anatomists, created a 360-degree solution for facial reconstruction using

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3D printing technology. Also, many hearing aids are 3D printed with current innovations and technological advancements, making it one of the essential factors expected to drive this market over the forecast period. This has been the case with dental implants as well. Such factors are likely to drive the market's growth over the forecast period.

However, factors such as a shortage of skilled professionals and stringent regulatory guidelines are expected to impede market growth over the forecast period.

Healthcare 3D Printing Market Trends

Metals and Alloy Segment is Expected to Witness Considerable Growth Over the Forecast Period

The metal and alloy sub-segment is expected to hold a significant market share in terms of the materials segment. Biocompatibility is of utmost importance for any 3D-printed device for implants or other medical uses. Any material used must comply with surface chemistry, surface topography, and other parameters that drive biological response to the implanted device.

Titanium alloy and pure titanium are the most preferred and biocompatible metallic materials for biomedical implants. Thus, 3D printing is the perfect technology, and a wide variety of biomaterials, such as metals and alloys, hydrogels, and polymeric biomaterials based on them, have been used and developed as inks for creating 3D structures with a wide range of sizes and stiffness. Titanium alloys like Ti6Al4V improve strength and have corrosion resistance. However, it is essential to consider that the high elastic modulus of titanium causes an elastic mismatch between the bones and the implant.

Titanium is one of the most widely adopted metals for 3D printing for medical applications. Per the NCBI article published in November 2020, Sandvik's additive manufacturing and metal powder specialists are preparing for the future of medical implants by working on the potential of 3D-printed titanium devices for the medical industry at its cutting-edge titanium powder plants in Sandviken, Sweden.

Furthermore, with technological advancements, 3D printing of titanium is expected to revolutionize medical device manufacturers over the forecast period. Also, increasing research and development are contributing to the segment's growth. For instance, in March 2021, I-Form, the Science Foundation Ireland research center for advanced manufacturing, partnered with Fort Wayne Metals to develop 3D-printed wires for next-gen medical devices.

Thus, due to the abovementioned factors, the segment is expected to experience growth over the forecast period.

North America is Expected to Witness Significant Growth Over the Forecast Period

North America is expected to dominate the overall healthcare 3D printing market over the forecast period, owing to factors such as increasing trends and developments in customized 3D printing and technological advancements, leading to enhanced applications. For instance, as per the research study of NCBI published in April 2020, 3D-printed ventilator splitters and adjustable flow control valves have been adapted, such as the no2covid-ONE valve, a single ventilator for use with multiple patients who have different oxygen requirements in the United States. Therefore, such increasing adoption of 3D printing is anticipated to boost the market in North America.

Key product launches, high concentration of market players or manufacturer's presence, acquisitions and partnerships among major players, and increasing research work in the United States are some of the factors driving the growth of the healthcare 3D printing market. For instance, in July 2022, the United States, Ohio State University, in collaboration with Nexxt Spine LLC, initiated a clinical trial to evaluate and compare radiographic and clinical outcomes in patients who are to undergo combined interbody/posterolateral lumbar fusion procedures, supplemented with pedicle screw instrumentation, using the Nexxt Spine

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Nexxt Matrixx™ 3D-printed titanium cage or the Honour™ poly-ether-ether-ketone cage.

Increasing strategic initiatives are also contributing to the market's growth. For instance, in March 2022, 3D LifePrints launched point-of-care medical 3D printing services in the United States.

Thus, the abovementioned factors are expected to drive market growth in North America during the forecast period.

Healthcare 3D Printing Market Competitor Analysis

The healthcare 3D printing market is moderately competitive in nature. The major players in the market have implemented specific strategies, like product launches, to sustain market competition. With the rising demand driven by the increasing medical applications, manufacturers are investing more in R&D. Some of the market's major players are Stratasys Ltd, Renishaw PLC, 3D Systems Inc., Nanoscribe GmbH & Co. KG, and Nano3D Biosciences Inc., among others.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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