Artificial Intelligence In Precision Medicine Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Technology (Deep Learning, Querying Method, Natural Language Processing, Context-Aware Processing), By Component (Hardware, Software, Service), By Therapeutic Application (Oncology, Cardiology, Neurology, Respiratory, Other), By Region & Competition, 2020-2030F

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Report description:

Market Overview
The Global Artificial Intelligence in Precision Medicine Market was valued at USD 1.24 billion in 2024 and is projected to grow significantly, reaching USD 2.15 billion by 2030 with a CAGR of 9.55%. This market is driven by the convergence of AI and precision medicine, an approach that customizes healthcare based on individual genetic, environmental, and lifestyle differences. Precision medicine leverages advanced AI tools-such as machine learning and deep learning-to analyze vast datasets and support personalized diagnoses, treatment plans, and drug development. As chronic diseases continue to rise globally and demand for tailored healthcare solutions increases, AI's role in transforming diagnostics, genomics, and treatment decisions becomes even more critical. Companies like Roche are advancing AI integration by collaborating on digital pathology platforms that deliver high-value clinical insights. This growing synergy is enabling healthcare providers to improve outcomes, enhance efficiencies, and reduce costs through individualized treatment strategies supported by robust data analytics and predictive modeling.
Key Market Drivers
Rising Prevalence of Chronic Diseases is Driving the Global Artificial Intelligence In Precision Medicine Market
The global burden of chronic diseases-such as cancer, diabetes, cardiovascular disorders, and respiratory illnesses-is growing rapidly, significantly increasing the need for personalized healthcare approaches. According to the WHO, chronic diseases account for 71% of all global deaths, with low- and middle-income countries bearing the highest burden. This creates immense pressure on healthcare systems to improve diagnostics, treatment accuracy, and long-term care management. AI-powered precision medicine

offers a transformative solution by using advanced algorithms to analyze large-scale genomic, clinical, and behavioral data to identify disease risks, treatment responses, and patient-specific interventions. For instance, AI applications in genomics help decode genetic mutations and inform the development of targeted therapies, particularly in oncology, where precision treatment is essential for improving survival rates and minimizing adverse effects. As AI continues to accelerate advancements in chronic disease prediction and prevention, its integration with precision medicine is proving critical for managing long-term patient outcomes.

Key Market Challenges

Data Quality and Accessibility Poses a Significant Obstacle To Market Expansion

A major challenge facing the AI in precision medicine market is the inconsistent availability and quality of healthcare data. AI algorithms require access to comprehensive, high-integrity datasets to deliver accurate and reliable insights. However, health data is often siloed across disparate platforms-ranging from electronic health records to genomic sequencing tools and wearable devices-which impedes integration and interoperability. Additionally, issues such as data fragmentation, standardization gaps, and privacy concerns limit the scalability of AI applications. In many cases, healthcare organizations also face legal and technical barriers to data sharing, especially across international borders. This challenge is exacerbated by the need for real-time analytics and the secure handling of sensitive patient information, which require robust infrastructure and data governance protocols. Overcoming these barriers is essential for unlocking AI's full potential in precision medicine and enabling broader adoption across diverse healthcare ecosystems.

Key Market Trends

Technological Advancements

Advancements in artificial intelligence technologies are significantly enhancing the precision medicine landscape. AI-powered platforms now use deep learning and natural language processing to mine massive datasets and identify intricate patterns linked to disease development, drug responses, and clinical outcomes. These insights are transforming how healthcare providers approach diagnostics, treatment planning, and patient management. For example, AI can detect rare genetic mutations or biomarker signatures that inform personalized therapies in oncology or cardiology. The use of AI is also revolutionizing clinical decision-making by offering real-time recommendations based on patient data, imaging results, and clinical trial findings. Additionally, AI-driven tools are improving patient stratification in clinical trials, accelerating drug discovery, and supporting remote patient monitoring. With continued innovations in algorithm development, computational capacity, and data availability, the precision medicine market is increasingly benefiting from scalable, intelligent systems that support personalized and proactive care models.

Key Market Players

- Glanbia Plc
- BioXcel Therapeutics, Inc.
- Sanofi S.A.
- NVIDIA Corp.
- Alphabet Inc. (Google Inc.)
- IBM Technology Corporation
- Microsoft Corporation
- Intel Corp.
- AstraZeneca plc
- GE HealthCare
- Enlitic, Inc.

Report Scope:

In this report, the Global Artificial Intelligence In Precision Medicine Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

- Artificial Intelligence In Precision Medicine Market, By Technology:

o Deep Learning

o Querying Method

o Natural Language Processing
o Context-Aware Processing
- Artificial Intelligence In Precision Medicine Market, By Component:
o Hardware
o Software
o Service
- Artificial Intelligence In Precision Medicine Market, By Therapeutic Application:
o Oncology
o Cardiology
o Neurology
o Respiratory
o Other
- Artificial Intelligence In Precision Medicine Market, By Region:
o North America
 United States
 Canada
 Mexico
o Europe
 France
 United Kingdom
 Italy
 Germany
 Spain
o Asia-Pacific
 China
 India
 Japan
 Australia
 South Korea
o South America
 Brazil
 Argentina
 Colombia
o Middle East & Africa
 South Africa
 Saudi Arabia
 UAE
Competitive Landscape
Company Profiles: Detailed analysis of the major companies present in the Global Artificial Intelligence In Precision Medicine Market.
Available Customizations:
Global Artificial Intelligence In Precision Medicine Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:
Company Information
- Detailed analysis and profiling of additional market players (up to five).

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