

# Artificial Intelligence (AI) In Precision Therapies Market - Strategic Insights and Forecasts (2026-2031)

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## Abstracts

The Artificial Intelligence (AI) in Precision Therapies market is forecast to grow at a CAGR of 28.0%, reaching USD 12.7 billion in 2031 from USD 3.7 billion in 2026.

The Artificial Intelligence in precision therapies market is strategically positioned within the broader transformation of personalized medicine. Healthcare systems are shifting from standardized treatment protocols toward data-driven, patient-specific therapeutic approaches. AI enables the analysis of complex genomic, clinical, and imaging datasets to guide treatment selection and optimize outcomes. Macro drivers include rising prevalence of chronic and genetic diseases, increased investment in digital health infrastructure, and the growing emphasis on precision medicine programs.

Pharmaceutical and biotechnology companies are integrating AI tools into drug development and clinical decision support processes. This positions the market as a critical enabler of next-generation therapeutic innovation.

## Market Drivers

A primary driver is the growing demand for personalized treatment solutions. AI platforms support the identification of biomarkers and patient subgroups for targeted therapies. This improves treatment efficacy and reduces adverse reactions. Another driver is the increasing use of genomic and molecular data in clinical practice. Advances in sequencing technologies generate large datasets that require AI-based analytics for interpretation. Rising research and development spending by pharmaceutical companies further supports market expansion. AI is also being adopted to accelerate drug discovery and optimize clinical trial design. Government and institutional support for precision medicine initiatives strengthens adoption across healthcare systems. The need to improve clinical outcomes while reducing long-term treatment costs continues

to reinforce demand for AI-enabled precision therapies.

## Market Restraints

High implementation costs remain a key restraint, particularly for small healthcare providers and research institutions. Integration of AI platforms with existing clinical and laboratory systems requires substantial investment and technical expertise. Data privacy and regulatory compliance challenges create barriers to large-scale deployment. Healthcare data is highly sensitive and subject to strict governance frameworks. Limited availability of skilled professionals in bioinformatics and AI engineering restricts operational scalability. Interoperability issues between data sources also limit the effectiveness of predictive and therapeutic models. Ethical concerns related to algorithm transparency and clinical accountability influence adoption decisions in regulated environments.

## Technology and Segment Insights

The market can be segmented by component, application, and end user. By component, solutions include software platforms and professional services such as integration and support. Software accounts for the largest share due to continuous algorithm development and clinical model refinement. By application, key segments include oncology, rare diseases, cardiology, and neurology. Oncology dominates due to the high adoption of targeted therapies and biomarker-driven treatment protocols. End users include hospitals, pharmaceutical companies, biotechnology firms, and research institutions. Pharmaceutical and biotechnology companies represent a major segment because of their focus on drug discovery and therapy optimization. Cloud-based deployment models are gaining traction due to scalability and lower infrastructure costs compared with on-premise systems.

## Competitive and Strategic Outlook

The competitive landscape includes healthcare technology providers, analytics firms, and pharmaceutical partners. Strategic focus areas include expanding therapeutic applications, improving model accuracy, and strengthening regulatory compliance frameworks. Companies are forming collaborations with research institutions and healthcare providers to access high-quality clinical and genomic data. Product differentiation is driven by integration with electronic health records and laboratory systems. Regional expansion strategies target markets with strong precision medicine programs and advanced healthcare infrastructure. Investment in explainable AI and

validation studies is becoming central to competitive positioning.

The Artificial Intelligence in precision therapies market is moving toward structured commercialization. Growth is driven by personalized medicine adoption and rising data availability. While regulatory and cost challenges persist, continuous innovation and collaboration are expected to support sustained market expansion through 2031.

### Key Benefits of this Report

**Insightful Analysis:** Gain detailed market insights across regions, customer segments, policies, socio-economic factors, consumer preferences, and industry verticals.

**Competitive Landscape:** Understand strategic moves by key players to identify optimal market entry approaches.

**Market Drivers and Future Trends:** Assess major growth forces and emerging developments shaping the market.

**Actionable Recommendations:** Support strategic decisions to unlock new revenue streams.

**Caters to a Wide Audience:** Suitable for startups, research institutions, consultants, SMEs, and large enterprises.

### What Businesses Use Our Reports For

Industry and market insights, opportunity assessment, product demand forecasting, market entry strategy, geographical expansion, capital investment decisions, regulatory analysis, new product development, and competitive intelligence.

### Report Coverage

Historical data from 2021 to 2024, Base Year 2025, Forecast Years 2026-2031

Growth opportunities, challenges, supply chain outlook, regulatory framework, and trend analysis

Competitive positioning, strategies, and market share evaluation

Revenue growth and forecast assessment across segments and regions

Company profiling including strategies, products, financials, and key developments

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