

AI-enabled Medical Devices Global Market Insights 2025, Analysis and Forecast to 2030, by Market Participants, Regions, Technology, Application, Product Type

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Abstracts

AI-enabled Medical Devices Market Summary

The AI-enabled Medical Devices market revolutionizes healthcare with intelligent diagnostics and monitoring, achieving 90% accuracy in applications like cardiac arrhythmia detection. This sector is defined by its integration of machine learning, computer vision, and NLP, enhancing devices like imaging systems and wearables. Key features include real-time analytics, reducing diagnosis times by 30%, and interoperability with EHR systems. The market supports hospitals and home care, with over 500 FDA-approved AI devices. Innovations like edge AI and 5G connectivity drive adoption. The global AI-enabled Medical Devices market is estimated to reach a valuation of approximately USD 15.0–20.0 billion in 2025, with compound annual growth rates projected in the range of 25.0%–35.0% through 2030. Growth is fueled by rising chronic diseases, healthcare digitization, and regulatory support, positioning AI devices as pivotal for precision medicine.

Application Analysis and Market Segmentation

Hospitals & ClinicsHospitals use AI for imaging and surgery, growing at 26%–35%, with AI reducing misdiagnoses by 20%. Trends include robotic surgery with 95% precision.

Diagnostic CentersDiagnostic centers, focusing on radiology, grow at 25%–34%, with AI improving throughput by 30%.

Ambulatory Surgical Centers (ASCs) ASCs grow at 24%–33%, with compact AI devices for outpatient care.

Home Care Settings Home care, with wearables, grows at 25.5%–34.5%, with remote monitoring cutting hospital visits by 25%.

Others Research labs grow at 24%–32%, with AI-driven clinical trials.

By Technology

Machine Learning Machine learning, powering diagnostics, grows at 26%–35%, with predictive models improving outcomes by 20%.

Natural Language Processing (NLP) NLP, for voice-activated devices, grows at 25%–34%, with EHR integrations.

Computer Vision Computer vision, for imaging, grows at 26.5%–35.5%, with 98% accuracy in tumor detection.

Context-Aware Computing Context-aware systems grow at 24.5%–33.5%, with real-time patient monitoring.

Regional Market Distribution and Geographic Trends

Asia-Pacific: 26%–35% growth, with China's AI hubs and Japan's imaging tech.

North America: 25%–34% growth, with U.S. FDA approvals and Canada's telehealth.

Europe: 24.5%–33.5% growth, with Germany's medical tech and UK's NHS integrations.

Latin America: 25%–34% growth, with Brazil's hospitals and Mexico's diagnostics.

Middle East & Africa: 24%–33% growth, with UAE's smart hospitals and South Africa's chronic care.

Key Market Players and Competitive Landscape

GE Healthcare: \$20B revenue, AI imaging leader.

Siemens Healthineers: \$18B, AI diagnostics, 15% market share.

Philips: \$19B, patient monitoring systems.

Medtronic: \$30B, AI surgical devices.

Boston Scientific: \$12B, cardiac AI solutions.

Abbott Laboratories: \$43B, wearable diagnostics.

Johnson & Johnson: \$90B, robotic surgery.

Canon Medical: Imaging AI, \$4B revenue.

Fujifilm: AI ultrasound systems.

Industry Value Chain AnalysisThe value chain spans algorithm development, device manufacturing, and clinical integration.

Raw Materials and Upstream SupplySensors and chips, with GE securing 10M units annually.

Production and ProcessingAI integration in ISO 13485 facilities, with Siemens scaling 1M devices yearly.

Distribution and LogisticsGlobal supply chains ensure 98% delivery success.

Downstream Processing and Application Integration

Hospitals: AI imaging systems.

Home Care: Wearable analytics. Downstream yields 30% margins via precision.

End-User IndustriesHealthcare captures value through 90% diagnostic accuracy.

Market Opportunities and Challenges

OpportunitiesAsia-Pacific's healthcare digitization drives AI adoption. Europe's smart hospitals boost growth, while Latin America's chronic care expands. Edge AI and 5G enhance scalability, and home care niches grow.

ChallengesHigh costs—\$1M per system—limit adoption. Regulatory delays slow approvals by 12 months. Data privacy risks 10% trust erosion, while clinician training gaps impact integration.

Contents

CHAPTER 1 EXECUTIVE SUMMARY

CHAPTER 2 ABBREVIATION AND ACRONYMS

CHAPTER 3 PREFACE

3.1 Research Scope

3.2 Research Sources

3.2.1 Data Sources

3.2.2 Assumptions

3.3 Research Method

Chapter Four Market Landscape

4.1 Market Overview

4.2 Classification/Types

4.3 Application/End Users

CHAPTER 5 MARKET TREND ANALYSIS

5.1 Introduction

5.2 Drivers

5.3 Restraints

5.4 Opportunities

5.5 Threats

CHAPTER 6 INDUSTRY CHAIN ANALYSIS

6.1 Upstream/Suppliers Analysis

6.2 AI-enabled Medical Devices Analysis

6.2.1 Technology Analysis

6.2.2 Cost Analysis

6.2.3 Market Channel Analysis

6.3 Downstream Buyers/End Users

CHAPTER 7 LATEST MARKET DYNAMICS

7.1 Latest News

7.2 Merger and Acquisition

- 7.3 Planned/Future Project
- 7.4 Policy Dynamics

CHAPTER 8 HISTORICAL AND FORECAST AI-ENABLED MEDICAL DEVICES MARKET IN NORTH AMERICA (2020-2030)

- 8.1 AI-enabled Medical Devices Market Size
- 8.2 AI-enabled Medical Devices Market by End Use
- 8.3 Competition by Players/Suppliers
- 8.4 AI-enabled Medical Devices Market Size by Type
- 8.5 Key Countries Analysis
 - 8.5.1 United States
 - 8.5.2 Canada
 - 8.5.3 Mexico

CHAPTER 9 HISTORICAL AND FORECAST AI-ENABLED MEDICAL DEVICES MARKET IN SOUTH AMERICA (2020-2030)

- 9.1 AI-enabled Medical Devices Market Size
- 9.2 AI-enabled Medical Devices Market by End Use
- 9.3 Competition by Players/Suppliers
- 9.4 AI-enabled Medical Devices Market Size by Type
- 9.5 Key Countries Analysis
 - 9.5.1 Brazil
 - 9.5.2 Argentina
 - 9.5.3 Chile
 - 9.5.4 Peru

CHAPTER 10 HISTORICAL AND FORECAST AI-ENABLED MEDICAL DEVICES MARKET IN ASIA & PACIFIC (2020-2030)

- 10.1 AI-enabled Medical Devices Market Size
- 10.2 AI-enabled Medical Devices Market by End Use
- 10.3 Competition by Players/Suppliers
- 10.4 AI-enabled Medical Devices Market Size by Type
- 10.5 Key Countries Analysis
 - 10.5.1 China
 - 10.5.2 India
 - 10.5.3 Japan

- 10.5.4 South Korea
- 10.5.5 Southeast Asia
- 10.5.6 Australia

CHAPTER 11 HISTORICAL AND FORECAST AI-ENABLED MEDICAL DEVICES MARKET IN EUROPE (2020-2030)

- 11.1 AI-enabled Medical Devices Market Size
- 11.2 AI-enabled Medical Devices Market by End Use
- 11.3 Competition by Players/Suppliers
- 11.4 AI-enabled Medical Devices Market Size by Type
- 11.5 Key Countries Analysis
 - 11.5.1 Germany
 - 11.5.2 France
 - 11.5.3 United Kingdom
 - 11.5.4 Italy
 - 11.5.5 Spain
 - 11.5.6 Belgium
 - 11.5.7 Netherlands
 - 11.5.8 Austria
 - 11.5.9 Poland
 - 11.5.10 Russia

CHAPTER 12 HISTORICAL AND FORECAST AI-ENABLED MEDICAL DEVICES MARKET IN MEA (2020-2030)

- 12.1 AI-enabled Medical Devices Market Size
- 12.2 AI-enabled Medical Devices Market by End Use
- 12.3 Competition by Players/Suppliers
- 12.4 AI-enabled Medical Devices Market Size by Type
- 12.5 Key Countries Analysis
 - 12.5.1 Egypt
 - 12.5.2 Israel
 - 12.5.3 South Africa
 - 12.5.4 Gulf Cooperation Council Countries
 - 12.5.5 Turkey

CHAPTER 13 SUMMARY FOR GLOBAL AI-ENABLED MEDICAL DEVICES MARKET (2020-2025)

- 13.1 AI-enabled Medical Devices Market Size
- 13.2 AI-enabled Medical Devices Market by End Use
- 13.3 Competition by Players/Suppliers
- 13.4 AI-enabled Medical Devices Market Size by Type

CHAPTER 14 GLOBAL AI-ENABLED MEDICAL DEVICES MARKET FORECAST (2025-2030)

- 14.1 AI-enabled Medical Devices Market Size Forecast
- 14.2 AI-enabled Medical Devices Application Forecast
- 14.3 Competition by Players/Suppliers
- 14.4 AI-enabled Medical Devices Type Forecast

CHAPTER 15 ANALYSIS OF GLOBAL KEY VENDORS

- 15.1 GE Healthcare
 - 15.1.1 Company Profile
 - 15.1.2 Main Business and AI-enabled Medical Devices Information
 - 15.1.3 SWOT Analysis of GE Healthcare
 - 15.1.4 GE Healthcare AI-enabled Medical Devices Revenue, Gross Margin and Market Share (2020-2025)
- 15.2 Siemens Healthineers
 - 15.2.1 Company Profile
 - 15.2.2 Main Business and AI-enabled Medical Devices Information
 - 15.2.3 SWOT Analysis of Siemens Healthineers
 - 15.2.4 Siemens Healthineers AI-enabled Medical Devices Revenue, Gross Margin and Market Share (2020-2025)
- 15.3 Philips
 - 15.3.1 Company Profile
 - 15.3.2 Main Business and AI-enabled Medical Devices Information
 - 15.3.3 SWOT Analysis of Philips
 - 15.3.4 Philips AI-enabled Medical Devices Revenue, Gross Margin and Market Share (2020-2025)
- 15.4 Medtronic
 - 15.4.1 Company Profile
 - 15.4.2 Main Business and AI-enabled Medical Devices Information
 - 15.4.3 SWOT Analysis of Medtronic
 - 15.4.4 Medtronic AI-enabled Medical Devices Revenue, Gross Margin and Market

Share (2020-2025)

15.5 Boston Scientific

15.5.1 Company Profile

15.5.2 Main Business and AI-enabled Medical Devices Information

15.5.3 SWOT Analysis of Boston Scientific

15.5.4 Boston Scientific AI-enabled Medical Devices Revenue, Gross Margin and
Market Share (2020-2025)

15.6 Abbott Laboratories

15.6.1 Company Profile

15.6.2 Main Business and AI-enabled Medical Devices Information

15.6.3 SWOT Analysis of Abbott Laboratories

15.6.4 Abbott Laboratories AI-enabled Medical Devices Revenue, Gross Margin and
Market Share (2020-2025)

Please ask for sample pages for full companies list

Tables & Figures

TABLES AND FIGURES

Table Abbreviation and Acronyms

Table Research Scope of AI-enabled Medical Devices Report

Table Data Sources of AI-enabled Medical Devices Report

Table Major Assumptions of AI-enabled Medical Devices Report

Figure Market Size Estimated Method

Figure Major Forecasting Factors

Figure AI-enabled Medical Devices Picture

Table AI-enabled Medical Devices Classification

Table AI-enabled Medical Devices Applications

Table Drivers of AI-enabled Medical Devices Market

Table Restraints of AI-enabled Medical Devices Market

Table Opportunities of AI-enabled Medical Devices Market

Table Threats of AI-enabled Medical Devices Market

Table COVID-19 Impact for AI-enabled Medical Devices Market

Table Raw Materials Suppliers

Table Different Production Methods of AI-enabled Medical Devices

Table Cost Structure Analysis of AI-enabled Medical Devices

Table Key End Users

Table Latest News of AI-enabled Medical Devices Market

Table Merger and Acquisition

Table Planned/Future Project of AI-enabled Medical Devices Market

Table Policy of AI-enabled Medical Devices Market

Table 2020-2030 North America AI-enabled Medical Devices Market Size

Figure 2020-2030 North America AI-enabled Medical Devices Market Size and CAGR

Table 2020-2030 North America AI-enabled Medical Devices Market Size by Application

Table 2020-2025 North America AI-enabled Medical Devices Key Players Revenue

Table 2020-2025 North America AI-enabled Medical Devices Key Players Market Share

Table 2020-2030 North America AI-enabled Medical Devices Market Size by Type

Table 2020-2030 United States AI-enabled Medical Devices Market Size

Table 2020-2030 Canada AI-enabled Medical Devices Market Size

Table 2020-2030 Mexico AI-enabled Medical Devices Market Size

Table 2020-2030 South America AI-enabled Medical Devices Market Size

Figure 2020-2030 South America AI-enabled Medical Devices Market Size and CAGR

Table 2020-2030 South America AI-enabled Medical Devices Market Size by Application

Table 2020-2025 South America AI-enabled Medical Devices Key Players Revenue

Table 2020-2025 South America AI-enabled Medical Devices Key Players Market Share
Table 2020-2030 South America AI-enabled Medical Devices Market Size by Type
Table 2020-2030 Brazil AI-enabled Medical Devices Market Size
Table 2020-2030 Argentina AI-enabled Medical Devices Market Size
Table 2020-2030 Chile AI-enabled Medical Devices Market Size
Table 2020-2030 Peru AI-enabled Medical Devices Market Size
Table 2020-2030 Asia & Pacific AI-enabled Medical Devices Market Size
Figure 2020-2030 Asia & Pacific AI-enabled Medical Devices Market Size and CAGR
Table 2020-2030 Asia & Pacific AI-enabled Medical Devices Market Size by Application
Table 2020-2025 Asia & Pacific AI-enabled Medical Devices Key Players Revenue
Table 2020-2025 Asia & Pacific AI-enabled Medical Devices Key Players Market Share
Table 2020-2030 Asia & Pacific AI-enabled Medical Devices Market Size by Type
Table 2020-2030 China AI-enabled Medical Devices Market Size
Table 2020-2030 India AI-enabled Medical Devices Market Size
Table 2020-2030 Japan AI-enabled Medical Devices Market Size
Table 2020-2030 South Korea AI-enabled Medical Devices Market Size
Table 2020-2030 Southeast Asia AI-enabled Medical Devices Market Size
Table 2020-2030 Australia AI-enabled Medical Devices Market Size
Table 2020-2030 Europe AI-enabled Medical Devices Market Size
Figure 2020-2030 Europe AI-enabled Medical Devices Market Size and CAGR
Table 2020-2030 Europe AI-enabled Medical Devices Market Size by Application
Table 2020-2025 Europe AI-enabled Medical Devices Key Players Revenue
Table 2020-2025 Europe AI-enabled Medical Devices Key Players Market Share
Table 2020-2030 Europe AI-enabled Medical Devices Market Size by Type
Table 2020-2030 Germany AI-enabled Medical Devices Market Size
Table 2020-2030 France AI-enabled Medical Devices Market Size
Table 2020-2030 United Kingdom AI-enabled Medical Devices Market Size
Table 2020-2030 Italy AI-enabled Medical Devices Market Size
Table 2020-2030 Spain AI-enabled Medical Devices Market Size
Table 2020-2030 Belgium AI-enabled Medical Devices Market Size
Table 2020-2030 Netherlands AI-enabled Medical Devices Market Size
Table 2020-2030 Austria AI-enabled Medical Devices Market Size
Table 2020-2030 Poland AI-enabled Medical Devices Market Size
Table 2020-2030 Russia AI-enabled Medical Devices Market Size
Table 2020-2030 MEA AI-enabled Medical Devices Market Size
Figure 2020-2030 MEA AI-enabled Medical Devices Market Size and CAGR
Table 2020-2030 MEA AI-enabled Medical Devices Market Size by Application
Table 2020-2025 MEA AI-enabled Medical Devices Key Players Revenue
Table 2020-2025 MEA AI-enabled Medical Devices Key Players Market Share

Table 2020-2030 MEA AI-enabled Medical Devices Market Size by Type
Table 2020-2030 Egypt AI-enabled Medical Devices Market Size
Table 2020-2030 Israel AI-enabled Medical Devices Market Size
Table 2020-2030 South Africa AI-enabled Medical Devices Market Size
Table 2020-2030 Gulf Cooperation Council Countries AI-enabled Medical Devices Market Size
Table 2020-2030 Turkey AI-enabled Medical Devices Market Size
Table 2020-2025 Global AI-enabled Medical Devices Market Size by Region
Table 2020-2025 Global AI-enabled Medical Devices Market Size Share by Region
Table 2020-2025 Global AI-enabled Medical Devices Market Size by Application
Table 2020-2025 Global AI-enabled Medical Devices Market Share by Application
Table 2020-2025 Global AI-enabled Medical Devices Key Vendors Revenue
Figure 2020-2025 Global AI-enabled Medical Devices Market Size and Growth Rate
Table 2020-2025 Global AI-enabled Medical Devices Key Vendors Market Share
Table 2020-2025 Global AI-enabled Medical Devices Market Size by Type
Table 2020-2025 Global AI-enabled Medical Devices Market Share by Type
Table 2025-2030 Global AI-enabled Medical Devices Market Size by Region
Table 2025-2030 Global AI-enabled Medical Devices Market Size Share by Region
Table 2025-2030 Global AI-enabled Medical Devices Market Size by Application
Table 2025-2030 Global AI-enabled Medical Devices Market Share by Application
Table 2025-2030 Global AI-enabled Medical Devices Key Vendors Revenue
Figure 2025-2030 Global AI-enabled Medical Devices Market Size and Growth Rate
Table 2025-2030 Global AI-enabled Medical Devices Key Vendors Market Share
Table 2025-2030 Global AI-enabled Medical Devices Market Size by Type
Table 2025-2030 AI-enabled Medical Devices Global Market Share by Type
Table GE Healthcare Information
Table SWOT Analysis of GE Healthcare
Table 2020-2025 GE Healthcare AI-enabled Medical Devices Revenue Gross Profit Margin
Figure 2020-2025 GE Healthcare AI-enabled Medical Devices Revenue and Growth Rate
Figure 2020-2025 GE Healthcare AI-enabled Medical Devices Market Share
Table Siemens Healthineers Information
Table SWOT Analysis of Siemens Healthineers
Table 2020-2025 Siemens Healthineers AI-enabled Medical Devices Revenue Gross Profit Margin
Figure 2020-2025 Siemens Healthineers AI-enabled Medical Devices Revenue and Growth Rate
Figure 2020-2025 Siemens Healthineers AI-enabled Medical Devices Market Share

Table Philips Information

Table SWOT Analysis of Philips

Table 2020-2025 Philips AI-enabled Medical Devices Revenue Gross Profit Margin

Figure 2020-2025 Philips AI-enabled Medical Devices Revenue and Growth Rate

Figure 2020-2025 Philips AI-enabled Medical Devices Market Share

Table Medtronic Information

Table SWOT Analysis of Medtronic

Table 2020-2025 Medtronic AI-enabled Medical Devices Revenue Gross Profit Margin

Figure 2020-2025 Medtronic AI-enabled Medical Devices Revenue and Growth Rate

Figure 2020-2025 Medtronic AI-enabled Medical Devices Market Share

Table Boston Scientific Information

Table SWOT Analysis of Boston Scientific

Table 2020-2025 Boston Scientific AI-enabled Medical Devices Revenue Gross Profit Margin

Figure 2020-2025 Boston Scientific AI-enabled Medical Devices Revenue and Growth Rate

Figure 2020-2025 Boston Scientific AI-enabled Medical Devices Market Share

Table Abbott Laboratories Information

Table SWOT Analysis of Abbott Laboratories

Table 2020-2025 Abbott Laboratories AI-enabled Medical Devices Revenue Gross Profit Margin

Figure 2020-2025 Abbott Laboratories AI-enabled Medical Devices Revenue and Growth Rate

Figure 2020-2025 Abbott Laboratories AI-enabled Medical Devices Market Share

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