

# Comprehensive Report on the Artificial Intelligence (AI)-Based Caries Detection Market: Opportunities and Challenges

*The Business Research Company's  
Comprehensive Report on the Artificial  
Intelligence (AI)-Based Caries Detection  
Market: Opportunities and Challenges*

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## What Is The Expected Cagr For The Artificial Intelligence (AI)-Based Caries Detection Market Through 2025?

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It will grow to \$1.11 billion in 2029 at a compound annual growth rate (CAGR) of 15.6%.”

*The Business Research  
Company*

Recently, a fast-paced expansion has been witnessed in the market size of caries detection based on artificial intelligence (AI). The market is projected to improve from \$0.54 billion in 2024 to \$0.62 billion in 2025, with a compound annual growth rate (CAGR) of 16.0%. The remarkable growth observed in the historic period can be credited to factors such as increased dental insurance coverage, a surge in the demand for cosmetic dentistry, a rise in the number of dental clinics, improvement in

treatment planning, and lifestyle changes.

The market size for caries detection based on artificial intelligence (AI) is predicted to experience swift expansion in the coming years. It is projected to escalate to \$1.11 billion by 2029, with a compound annual growth rate (CAGR) of 15.6%. The anticipated growth within this forecast period can be credited to factors such as the rising incidence of dental caries, an expanding elderly population, an increase in oral health awareness, a move towards preventive dentistry, and a surge in dental spending. Some notable trends expected during the forecast period are the inclusion of AI in diagnostic instruments, the creation of advanced learning algorithms, improvements in imaging technologies, the downsizing of diagnostic devices, and the integration

of mobile applications.

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### What Are The Driving Factors Impacting The Artificial Intelligence (AI)-Based Caries Detection Market?

The escalating prevalence of dental disorders is anticipated to fuel the expansion of the artificial intelligence (AI)-based caries detection market in the future. Dental diseases affect the teeth, gums, or adjacent oral tissues, potentially causing discomfort, infection, or impairment in oral functionality. The surge in dental diseases is attributed to the increased intake of sugary and processed foods, which encourage tooth decay and gum issues by nourishing harmful oral bacteria. AI-based caries detection assists in managing dental diseases by precisely recognizing tooth decay in its early phase, thereby enabling immediate treatment and minimizing the risk of serious complications. For example, in September 2023, the National Institutes of Health (NIH), a US federal agency, projected that about 62.06% of older adults are expected to encounter tooth decay, and nearly 54.57% are likely to be afflicted with periodontal disease by 2050. Hence, the escalating prevalence of dental diseases is stimulating the growth of the artificial intelligence (AI)-based caries detection market.

### Which Players Dominate The Artificial Intelligence (AI)-Based Caries Detection Industry Landscape?

Major players in the Artificial Intelligence (AI)-Based Caries Detection Global Market Report 2025 include:

- Dentsply Sirona
- Straumann AG
- Envista
- Planmeca Oy
- 3Shape Inc.
- Dexis Corp.
- Acteon Group
- Carestream Dental LLC
- Vatech Co. Ltd.
- RapidAI

### What Are The Future Trends Of The Artificial Intelligence (AI)-Based Caries Detection Market?

Notable businesses in the AI-based caries detection market are keen on creating innovative solutions such as advanced clinical enhancers to improve clinical workflows and reduce errors. These advanced clinical enhancers are revolutionary tools that optimize the accuracy, efficiency, and eventual results of healthcare treatments. For instance, VideaHealth, an American dental tech firm, launched the Caries 3.0 model in January 2025. This model includes an advanced clinical enhancer, enhancing accuracy by eliminating potential false positives through the consideration of the size of caries, tooth positioning, and other crucial clinical aspects. Suitable

for broad patient demographics, the Caries 3.0 applies to individuals aged three and above, and has gained FDA-clearance for caries detection via bitewing and periapical X-rays. The model offers improved patient communication, resulting from superior visuals that simplify condition explanation and foster treatment acceptance. Such innovations allow dental practices to provide precise, evidence-based care while ensuring technological progression.

### Global Artificial Intelligence (AI)-Based Caries Detection Market Segmentation By Type, Application, And Region

The artificial intelligence (AI)-based caries detection market covered in this report is segmented as

- 1) By Product: Software, Hardware, Services
- 2) By Deployment Mode: On-Premises, Cloud-Based
- 3) By Application: Hospitals, Dental Clinics, Academic And Research Institutes, Other Applications
- 4) By End User: General Dentists, Pediatric Dentists, Orthodontists, Other End Users

#### Subsegments:

- 1) By Software: Diagnostic Software, Imaging Analysis Software, Data Management Software, Predictive Analytics Software, Cloud-Based Software Solutions
- 2) By Hardware: Intraoral Cameras, Digital X-Ray Machines, Optical Coherence Tomography (OCT) Devices, Near-Infrared (NIR) Imaging Devices, Laser Fluorescence Devices
- 3) By Services: Remote Diagnostic Services, Software As A Service (SaaS), Maintenance And Support Services, Training And Consultation Services, Data Storage And Management Services

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### Which Region Holds The Largest Market Share In The Artificial Intelligence (AI)-Based Caries Detection Market?

In 2024, North America held the biggest share of the global market for AI-based caries detection. It is anticipated that Asia-Pacific will experience the most rapid growth during the predicted period. The regions featured in the report on the global market for AI-based caries detection include Asia-Pacific, Western Europe, Eastern Europe, North America, South America, Middle East, and Africa.

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