# DENTAL CARIES: AI & ROBOTICS

| | |
|---|---|
| Artificial intelligence for dental caries detection: An umbrella review [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2026; 175: 106944 |
| AI-driven decision thresholds in cariology: a systematic review of lesion stage detection on bitewing radiographs (request using https://www.smartsurvey.co.uk/s/PJHMV/) | Caries Res 2026; online June 18 doi.org/10.1159/000552757 |
| Artificial Intelligence in caries risk assessment: evaluating the current status of CAMBRA and Cariogram with Large Language Models (request using https://www.smartsurvey.co.uk/s/PJHMV/) | Caries Res 2026; online June 25 doi.org/10.1159/000553200 |
| Evaluating AI diagnostic accuracy in approximal dental caries detection on bitewing radiographs | Clin Oral Investig 2026; 30: 207 |
| Building an interpretable machine learning framework to predict and analyse early childhood caries in children aged 2 to 6 years: a single-centre observational study | Int Dent J 2026; 76(2): 109419 |
| Diagnostic accuracy and feasibility of artificial intelligence-driven smartphone imaging for dental caries detection: A systematic review. [Review] | Japan Dent Sci Rev 2026; 62: 14-25 |
| Longitudinal assessment of an AI-based software for interproximal caries detection in bitewing radiographs | J Dent 2026; 165: 106252 |
| Artificial intelligence tools for dental caries detection: a scoping review | Oral 2025; 5(4): 102 |
| Accuracy of deep learning-based AI models for early caries lesion detection: the influence of annotation quality and reference choice | Clin Oral Investig-2025; 29: 598 |
| Evaluation of artificial intelligence-based clinical decision support systems for caries and periodontal bone loss: An external validation study [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Am Dent Assoc 2025; Dec 24 |
| Development and evaluation of a multi-model stacking approach for caries risk assessment in adults using supervised machine learning | BDJ (2025). doi.org 10.1038/s41415-025-9105-5 |
| Uncovering dental caries heterogeneity in NHANES using machine learning | J Dent Res 2025; online 9 Dec 10.1177/00220345251398027 |
| A clinically oriented and interpretable AI framework for classifying dentin caries severity on CBCT images [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Prosthet Dent 2025 Nov 1 |
| Dual convolutional neural network framework for segmenting dental caries in panoramic radiographs | J Prosthet Dent 2025 Oct 13 |
| The impact of training dental students to use an artificial intelligence-based platform for pulp exposure prediction prior to deep caries excavation: a proof-of-concept randomised controlled trial | Int Endod J 2025; Oct 10 |
| Accuracy of deep learning-based AI models for early caries lesion detection: the influence of annotation quality and reference choice | Clin Oral Investig 2025; 29: 598 |

## DENTAL CARIES: AI & ROBOTICS

| | |
|---|---|
| Machine learning algorithms enhance the accuracy of radiographic diagnosis of dental caries: a comparative study | DMFR 2025; 54(8): 632-641 |
| Development and evaluation of an artificial intelligence (AI) model for detecting dental caries from 3D intraoral scans. [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Prosthet Dent 2025; 134(4): 1115.e1-1115.e8 |
| Evaluation of deep learning for caries detection with fine-grained classification and postprocessing improvements | Int Dent J 2025; 75(5): 100898 |
| AI-driven dental caries management strategies: from clinical practice to professional education and public self care | Int Dent J 2025; 75(4): 100827 |
| Ethical insights into AI-driven caries detection: a scoping review | BDJ Open 2025; 11: Art 78 |
| Dental caries detection in children using intraoral scans and deep learning | J Dent 2025; 160: 105906 |
| Impact of oral health chatbot with and without toothbrushing training on childhood caries | Int Dent J 2025; 75(2): 1348-1359 |
| Evaluation of caries detection on bitewing radiographs: a comparative analysis of the improved deep learning model and dentist performance. | J Esthet Restor Dent 2025; 37(7): 1849-1961 |
| ChatGPT for parents' education about early childhood caries: A friend or foe? [Accessible from the Wiley link on this page] | Int J Paediatr Dent 2025; 35(4): 717-724 |
| Artificial intelligence in the detection and classification of dental caries [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Prosthet Dent 2025; 133(5): 1326-1332 |
| Use of artificial intelligence to detect dental caries on intraoral photos [can be accessed on DOSS free by logging in on this page] | Quintessence Int 2025; 56(1): 82-91 |
| Diagnosis of approximal caries in children with convolutional neural networks based detection algorithms on radiographs: A pilot study | Acta Odontol Scand 2025; 84: 18-25 |
| Artificial intelligence based techniques for caries risk prediction and assessment: A scoping review. | J Oral Biol Craniofac Res 2025; 15(6): 1497-1507 |
| Automated classification of dental caries in bitewing radiographs using machine learning and the ICCMS framework | Int J Dent 2025: 6644310 |
| AI-driven approaches in the management of early childhood caries: A path toward global oral health [Review] | J Oral Biol Craniofac Res 2025; 15(5): 1134-1140 |
| Artificial intelligence in early childhood caries detection and prediction: a systematic review and meta-analysis [can be accessed on DOSS free by logging in on this page] | Pediatr Dent 2024; 46(6): 385-394 |
| Validation of artificial intelligence application for dental caries diagnosis on intraoral bitewing and periapical radiographs | J Dent 2024; 147: 105105 |
| Detecting dental caries on oral photographs using artificial intelligence: A systematic review | Oral Dis 2024; 30(4): 1765-1783 |

| | |
|---|---|
| Performance comparison of multifarious deep networks on caries detection with tooth X-ray images [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2024; 144: 104970 |
| Detection of caries around restorations on bitewings using deep learning | J Dent 2024; 143: 104886 |
| AI-based dental caries and tooth number detection in intraoral photos: Model development and performance evaluation [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2024; 141: 104821 |
| Impact of artificial intelligence on dentists' gaze during caries detection: A randomized controlled trial [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2024; 140: 104793 |
| Deep learning for tooth identification and numbering on dental radiography: a systematic review and meta-analysis | Dento-Maxillofac Radiol 2024; 53(1): 5-21 |
| Dental student application of artificial intelligence technology in detecting proximal caries lesions [Accessible from the Wiley link on this page] | J Dent Educ 2024; Jan 10 [Ahead of print] |
| Use of artificial intelligence software in dental education: A study on assisted proximal caries assessment in bitewing radiographs | Eur J Dent Educ 2023; Nov 14 [Ahead of print] |
| Dental caries detection and classification in CBCT images using deep learning | Int Dent J 2023; Nov 06 [Early view] |
| Artificial intelligence in the detection and classification of dental caries [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Prosthet Dent 2023; Aug 26 [Early view] |
| Detection of the pathological exposure of pulp using an artificial intelligence tool: a multicentric study over periapical radiographs | BMC Oral Health 2023; 23: Art 553 |
| Prediction of pulp exposure before caries excavation using artificial intelligence: Deep learning-based image data versus standard dental radiographs | J Dent 2023; 138: 104732 |
| Applications of artificial intelligence in the analysis of dental panoramic radiographs: an overview of systematic reviews | Dento-Maxillofac Radiol 2023; 52(7): 20230284 |
| Early childhood predictors for dental caries: A machine-learning approach [can be accessed on DOSS free by logging in on this page] | J Dent Res 2023; 102(9): 999-1006 |
| Influence of artificial intelligence-driven diagnostic tools on treatment decision-making in early childhood caries: A systematic review of accuracy and clinical outcomes | Dent J (Basel) 2023; 11(9): 214 |
| Dental caries risk assessment in children 5 years old and under via machine learning | Dent J (Basel) 2022; 10(9): 164 |
| Predicting treatment nonresponse in Hispanic/Latino children receiving silver diamine fluoride for caries arrest: A pilot study using machine learning | Front Oral Health 2021; 2: 695759 |

| | |
|---|---|
| Using a machine learning algorithm to predict the likelihood of presence of dental caries among children aged 2 to 7 | Dent J (Basel) 2021; 9(12): 141 |
| Deep learning convolutional neural network algorithms for the early detection and diagnosis of dental caries on periapical radiographs: A systematic review | Imaging Dent Sci 2021; 51(3): 237-242 |
| Feasibility of deep learning for dental caries classification in bitewing radiographs based on the ICCMS ™ radiographic scoring system [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | Oral Surg Oral Med Oral Pathol Oral Radiol 2023; 135(2): 272-281 |
| Artificial intelligence for caries detection: Value of data and information | J Dent Res 2022; 101(11): 1350-1356 |
| Towards trustworthy AI in dentistry | J Dent Res 2022; 101(11): 1263-1268 |
| Evaluation of a deep learning system for automatic detection of proximal surface dental caries on bitewing radiographs [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | Oral Surg Oral Med Oral Pathol Oral Radiol 2022; 134(2): 262-270 |
| Deep learning for caries detection: A systematic review [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2022; 122: 104115 |
| Artificial intelligence for caries and periapical periodontitis detection [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2022; 122: 104107 |
| Cost-effectiveness of AI for caries detection: randomized trial [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2022; 119: 104080 |
| Caries segmentation on tooth X-ray images with a deep network [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2022; 119: 104076 |
| Caries detection on intraoral images using artificial intelligence | J Dent Res 2022; 101(2): 158-165 |
| Diagnosis of interproximal caries lesions with deep convolutional neural network in digital bitewing radiographs | Clin Oral Investig 2022; 26(1): 623-632 |
| An automated machine learning classifier for early childhood caries | Pediatr Dent 2021; 43(3): 191-197 |
| The ADEPT study: a comparative study of dentists' ability to detect enamel-only proximal caries in bitewing radiographs with and without the use of AssistDent artificial intelligence software | Br Dent J 2021; 231(8): 481-485 |

| | |
|---|---|
| Artificial intelligence for caries detection: Randomized trial [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2021; 115: 103849 |
| Cost-effectiveness of artificial intelligence for proximal caries detection | J Dent Res 2021; 100(4): 369-376 |
| Detecting caries lesions of different radiographic extension on bitewings using deep learning [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2020; 100: 103425 |
| Deep learning for caries lesion detection in near-infrared light transillumination images: A pilot study [free to members on Science Direct. If you do not have a login email library@bda.org to request one] | J Dent 2020; 92: 103260 |