



CARIES DIAGNOSIS

Emerging trends in the early diagnosis of dental caries: a scoping review of artificial intelligence, digital diagnostics, and teledentistry [Log in to the BDA home page and follow the link to the BDJ Portfolio to access]	EBD 2026; 27(1): 18
Evaluating the integration of the International Caries Classification and Management System in undergraduate dental education: insights from staff and students [Log in to the BDA home page and follow the link to the BDJ to access]	BDJ 2025; 239 (9): 639-646
Comparison of the accuracy of intraoral scanners, intraoral cameras, radiographs, and histological methods for the diagnosis of dental caries: a systematic review and meta-analysis	BDJ Open 2025; 11: 82
Comparing the effectiveness of an e-learning module at different levels of magnification for detecting occlusal caries in permanent teeth, utilizing the international caries detection and assessment system (ICDAS): an ex vivo study	BDJ Open 2025; 11: 43
The professional perception of the International Caries Classification and Management System (ICCMS): a pragmatic randomised clinical trial [Log in to the BDA home page and follow the link to the BDJ to access]	BDJ (2024). https://doi.org/10.1038/s41415-024-7510-9
Comparison of near-infrared imaging with cone-beam computed tomography for proximal caries detection in permanent dentition: An in vivo study [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dentistry 2024; 145: 104994
Occlusal caries detection and monitoring using a 3D intraoral scanner system. An in vivo assessment	J Dentistry 2024; 143: 104900
Caries detection and characterization in pediatric patients using iTero 5D near-infrared technology [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	Am J Orthod Dentofac Orthop 2024; 165(1): 54-63
Performance of the caries diagnosis feature of intraoral scanners and near-infrared imaging technology—A narrative review	J Prosthodont 2023; 32(S2): 114-124
The diagnostic performance of the Java-based software colorization tool in the diagnosis of dental caries: an in vitro study [can be accessed on DOSS free by logging in on this page]	Quintessence Int 2023; 54 (4): 266-273
Occlusal caries detection on 3D models obtained with an intraoral scanner. A validation study	J Dent 2023; 131: 104457
Artificial intelligence for caries detection: value of data and information	J Dent Res 2022; 101 (11): 1350-1356
Early occlusal caries detection using targeted fluorescent starch nanoparticles [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dent 2022; 125: 104243
A comparison of the horizontal and vertical bitewing images in detecting approximal caries and interdental bone loss in posterior teeth: A diagnostic accuracy randomized cross over clinical trial	J Dent Sci 2022; online 28 Aug doi.org/10.1016/j.jds.2022.08.006
Impedance spectroscopy as a tool for the detection of occlusal non-cavitated carious lesions (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Oper Dent 2022; 47 (3): 258-267



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Influence of two caries detection strategies on the quality of life of preschool children: An analysis of secondary outcomes of a 2-Year randomized clinical trial [Accessible from the Wiley link on this page]	Community Dent Oral Epidemiol 2022; online 7 June doi.org/10.1111/cdoe.12765
Mobile photographic screening for dental caries in children: Diagnostic performance compared to unaided visual dental examination [Accessible from the Wiley link on this page]	J Pub Health Dent 2022; 82 (2): 166-75
Clinical extension of proximal carious lesions compared to bitewing radiographs using photostimulable phosphor plates (PSP) [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dent 2022; (122): 104145
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
Visible Occlusal Plaque Index predicting caries lesion activity [can be accessed on DOSS free by logging in on this page]	J Dental Research 2022; 101 (8): 905-11
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 Dentistry 2022; 119: 104080
Enamel caries detection and diagnosis: an analysis of systematic reviews	J Dent Res 2022; 100 (3): 261-269
Development and evaluation of deep learning for screening dental caries from oral photographs	Oral Diseases 2022; 28 (1): 173-81
Evaluation of a near-infrared light transillumination device for caries detection in interproximal primary molar surfaces	J Dent Child 2021; 88 (3): 180-6
The value of bitewing radiographs in the management of carious primary molars [Log in to the BDA home page and follow the link to the BDJ to access]	BDJ 2021; 231: 575-9
The diagnostic efficacy of quantitative light-induced fluorescence in detection of dental caries of primary teeth	J Dentistry 2021; 115: 103845
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 Dentistry 2021; 115: 103849
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	BDJ 2021; 231: 481-5
Caries detection on intraoral images using artificial intelligence	J Dent Res 2021 – pub online Aug 20th
Near-infrared reflection at 780 nm for detection of early proximal caries in posterior permanent teeth in vitro	Dentomaxillofac Radiol 2021; 50(6): 20210005



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Radiographic modalities for diagnosis of caries in a historical perspective: from film to machine-intelligence supported systems (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Dentomaxillofac Radiol 2021; 50(5): 20210010
Detection and analyzing plane of non-cavitated approximal caries by cross-polarized optical coherence tomography (CP-OCT) [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dent 2021; (110): 103679
Evaluation of different teaching methods in the radiographic diagnosis of proximal carious lesions (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Dentomaxillofac Radiol 2021; 50(4): 20200295
Cost-effectiveness of artificial intelligence for proximal caries detection	J Dent Res 2021; 100(4): 369-376
In vitro comparison of two types of digital X-ray sensors for proximal caries detection validated by micro-computed tomography (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Dentomaxillofac Radiol 2021; 50(3): 20200338
Imaging modalities to inform the detection and diagnosis of early caries	Cochrane Database of Systematic Reviews 2021, Issue 3. Art. No.: CD014545
Effects of healthcare policy and education on reading accuracy of bitewing radiographs for interproximal caries	Dentomaxillofac Radiol 2021; 50(2): 20200153
Comparison of novel and established caries diagnostic methods: a clinical study on occlusal surfaces	BMC Oral Health 2021; Article number: 97 doi.org/10.1186/s12903-021-01465-8
Challenges in diagnosing and managing non-cavitated occlusal caries lesions. A literature overview and report of a case	Clin Ter 2021; 171 (1): e80-e86
Secondary caries: what is it, and how it can be controlled, detected, and managed?	Clin Oral Invest 2020; (24): 1869-1876
Evidence-based dentistry caries risk assessment and disease management [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	Dent Clin N Am 2019; 63 (1): 119-128
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Caries reporting in studies that used the International Caries Detection and Assessment System: A scoping review [Accessible from the Wiley link on this page]	Comm Dent Oral Epidemiol 2019; 47 (1): 92-102
Diagnosis of pit-and-fissure caries using three-dimensional scanned images (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Oper Dent 2018; (43): E152-E157
Impact of different detection criteria on caries estimates and risk assessment	Int Dent J 2018; (88): 144-151
Comparison of caries lesion detection methods in epidemiological surveys: CAST, ICDAS and DMF	BMC Oral Health 2018; (18): 122
Low reproducibility between oral radiologists and general dentists with regards to radiographic diagnosis of caries [can be accessed on DOSS free by logging in on this page]	Acta Odontol Scand 2018; (76): 346-350



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Clinical relevance of studies on the visual and radiographic methods for detecting secondary caries lesions – a systematic review	J Dent 2018; (75): 22-33
The knowledge and use of population-based methods for caries detection	BMC Oral Health 2018; (18): 153
Influence of 2 caries-detecting devices on clinical decision making and lesion depth for suspicious occlusal lesions: A randomized trial from the National Dental Practice-Based Research Network [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Am Dent Assoc 2018; (149): 299-307
Inter- and intraexaminer reliability of bitewing radiography and near-infrared light transillumination for proximal caries detection and assessment	Dentomaxillofac Radiol 2018; (47): 20170292
Near infrared transillumination compared with radiography to detect and monitor proximal caries: A clinical retrospective study [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dent 2018; 70: 40-45
A clinical study comparing digital radiography and near-infrared transillumination in caries detection [Accessible from the Wiley link on this page]	J Esthet Restor Dent 2018; 30: 39-44
Assessing the appearance and fluorescence of resin-infiltrated white spot lesions with caries detection devices (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Oper Dent 2018; 43(1): 10-18
Accuracy of extraoral bite-wing radiography in detecting proximal caries and crestal bone loss [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Am Dent Assoc 2018; 149(1): 51-58
Clinical accuracy data presented as natural frequencies improve dentists' caries diagnostic inference [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Am Dent Assoc 2018; 149(1): 18-24
Caries diagnosis using light fluorescence devices in comparison with traditional visual and tactile evaluation: a prospective study [can be accessed on DOSS free by logging in on this page]	Odontology 2017; (105): 283-290
Validation of the visible occlusal plaque index (VOPI) in estimating caries lesion activity [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dent 2017; 64: 37-44
Classification of human teeth caries using custom non-invasive optical imaging system (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Laser Dent Sci 2017; 1: 73-81
Comparison of occlusal caries detection using the ICDAS criteria on extracted teeth or their photographs	BMC Oral Health 2016; (16): 93
Digital imaging capability for caries detection: A meta-analysis (request using https://www.smartsurvey.co.uk/s/PJHMV/)	JDR Clin Transational Res 2016; 1(2): 112-121
A pilot study of dentists' assessment of caries detection and staging systems applied to early caries: Pearl network findings (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Gen Dent 2016; (May/June): 20-27
Caries detection around restorations using ICDAS and optical devices [Accessible from the Wiley link on this page]	J Esthet Restor Dent 2016; 28(2): 110-121



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Validation of Diagnodent laser fluorescence and the International Caries Detection and Assessment System (ICDAS) in diagnosis of occlusal caries in permanent teeth: an in vivo study [Accessible from the Wiley link on this page]	Eur J Oral Sci 2016; 124: 188-194
Detection of caries around amalgam restorations on approximal surfaces (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Oper Dent 2016; 41(1): 34-43
Ex vivo evaluation of new 2D and 3D dental radiographic technology for detecting caries	Dentomaxillofac Radiol 2016; 45: 20150281
Detecting secondary caries lesions: a systematic review and meta-analysis [can be accessed on DOSS free by logging in on this page]	J Dent Res 2016; 95(2): 143-151
Detecting secondary caries lesions: a cost-effectiveness analysis [can be accessed on DOSS free by logging in on this page]	J Dent Res 2016; 95(2): 152-159
Salivary biomarkers for dental caries [Accessible from the Wiley link on this page]	Periodontol 2000; 2016; 70: 128-141
Effect of oral fluids on dental caries detection by the VistaCam	Clin And Experiment Dent Res 2015; 1(2): 74-79
Impact of different magnification levels on visual caries detection with ICDAS [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dent 2015; 43: 1559-1564
The American Dental Association caries classification system for clinical practice: a report of the American Dental Association Council on Scientific Affairs [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	JADA 2015; 146(2): 79-86
Detection of class II caries on the iPad with retina display (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Gen Dent 2015; 63(4): 56-60
Comparison of dental explorers and CPI-probes in diagnosing dental caries	Bull Tokyo Coll 2015; 56 (3): 139-144
In vivo and in vitro performance of conventional methods, Diagnodent, and an electronic caries monitor for occlusal caries detection in primary teeth [can be accessed on DOSS free by logging in on this page]	Pediatric Dent 2015; 17 (4): E14-E22
Radiographic caries detection: a systematic review and meta-analysis [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Dent 2015; 43: 924-933
Optical-fiber-based laser-induced breakdown spectroscopy for detection of early caries	J Biomed Optics 2015; 20 (6): 065002
Imaging and detection of early-stage dental caries with an all-optical photoacoustic microscope	J Physics: Conference Series 2015; (581): 012002
The American Dental Association Caries Classification System for Clinical Practice: A report of the American Dental Association Council on Scientific Affairs [free to members on Science Direct. If you do not have a login email library@bda.org to request one]	J Am Dent Assoc 2015; 146 (2): 79-86



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Effectiveness of fluorescence-based methods to detect in situ demineralization and remineralization on smooth surfaces	Caries Res 2014; (48): 507-514
The influence of amalgam fillings on the detection of approximal caries by cone-beam CT: In vitro study	Dentomaxillofac Radiol 2014; (43): 20130342
In vitro evaluation of Midwest Caries ID: A novel light-emitting diode for caries detection (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Oper Dent 2014; 39 (6): 644-651
Dental caries in primary and permanent molars in 7-8-year-old school children evaluated with Caries Assessment Spectrum and Treatment (CAST)	BMC Oral Health 2014; (14): 74
Dentist-specific variation in diagnosis of caries -- a multilevel analysis [Accessible from the Wiley link on this page]	Comm Dent Oral Epidemiol 2014; (42): 1850191
Diagnosis of the early carious lesion	Aust Dent J 2013; 58 (1 Suppl.): 35-39
Comparison of an intra-oral photographic caries assessment with an established visual caries assessment method for use in dental epidemiological studies of children [Accessible from the Wiley link on this page]	Comm Dent Oral Epidemiol 2013; (41): 526-533
Carious lesions: Diagnostic accuracy using pre-calibrated monitor in various ambient light levels: An in vitro study	Dentomaxillofac Radiol 2013; (42): 20130071
Visual-tactile versus radiographic caries detection agreement in caries-active adult [Accessible from the Wiley link on this page]	J Pub Health Dent 2013; (73): 252-260
Caries diagnosis: Agreement between WHO and ICDAS II criteria in epidemiological surveys (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Comm Dent Health 2013; (30): 108-111
Comparison of caries detection methods using varying numbers of intra-oral digital photographs with visual examination for epidemiology in children	BMC Oral Health 2013; (13): 6
Non-cavitated carious lesions detection methods: A systematic review [Accessible from the Wiley link on this page]	Comm Dent Oral Epidemiology 2013; (41): 55-66
International Caries Detection and Assessment System (ICDAS) and its International Caries Classification and Management System (ICCMS) – methods for staging of the caries process and enabling dentists to manage caries [Accessible from the Wiley link on this page]	Comm Dent Oral Epidemiol 2013; (41): E41-E52
The Stephan Curve revisited [can be accessed on DOSS free by logging in on this page]	Odontology 2013; (101): 2-8
The Caries Assessment Spectrum and Treatment (CAST) index: Face and content validation	Int Dent J 2012; (62): 270-276
Proximal caries detection accuracy using intraoral bitewing radiography, extraoral bitewing radiography and panoramic radiography	Dentomaxillofac Radiol 2012; (41): 450-459
Implications of caries diagnostic strategies for clinical management decisions [Accessible from the Wiley link on this page]	Comm Dent Oral Epidemiol 2012; (40): 257-266
Comparison of photographic and visual assessment of occlusal caries with histology as the reference standard	BMC Oral Health 2012; (12): 10



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Variations in caries diagnoses and treatment recommendations and their impacts on the costs of oral health care (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Comm Dent Health 2012; (29): 25-28
A clinical study of a laser fluorescence device for the detection of approximal caries in primary molars [Accessible from the Wiley link on this page]	Int J Paediatr Dent 2012; (22): 132-138
Validity of caries-detection methods under epidemiological setting (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Am J Dent 2011; (24): 363-366
A transition scoring system of caries increment with adjustment of reversals in longitudinal study: evaluation using primary tooth surface data [Accessible from the Wiley link on this page]	Comm Dent Oral Epidemiol 2011; (39): 61-68
Reliability of the NYVAD criteria for caries assessment in primary teeth [Accessible from the Wiley link on this page]	Eur J Oral Sci 2011; (119): 225-231
Using fluorescence (Diagnodent) in surveys for the detection of noncavitated occlusal dentine caries (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Comm Dent Health 2011; (28): 17-21
Performance of laser fluorescence devices, visual and radiographic examination for the detection of occlusal caries in primary molars	Clin Oral Invest 2011; (15): 635-641
Factors affecting the detection and treatment of occlusal caries using the international caries detection and assessment system (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Operative Dent 2011; 36 (6): 597-607
Clinical evaluation of Diagnodent in detection of occlusal caries in newly erupted noncavitated first permanent molars in caries-active children (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Operative Dent 2011; 36 (4): 348-355
Performance of a fluorescence camera for detection of occlusal caries in vitro [can be accessed on DOSS free by logging in on this page]	Odontol 2011; (99): 55-61
Reliability analysis of visual examinations carried out by school-teachers and a dental assistant in the detection of dental caries (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Comm Dent Health 2010; (27): 89-93
Value of bitewing radiographs for detecting approximal caries in 6-year-old children in the Netherlands [Accessible from the Wiley link on this page]	Int J Paediatr Dent 2010; (20): 336-340
The use of the International Caries Detection and Assessment System (ICDAS) in a National Health Service general dental practice as part of an oral health assessment (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Prim Dent Care 2010; 17 (4): 153-159
Occlusal caries detection by using thermal imaging (request using https://www.smartsurvey.co.uk/s/PJHMV/)	J Dent 2010; (38): 788-795
In vitro detection of secondary caries associated with composite restorations on approximal surfaces using laser fluorescence (request using https://www.smartsurvey.co.uk/s/PJHMV/)	Oper Dent 2010; 35 (5): 564-571
An evaluation of the Cariogram as a predictor model	Int Dent J 2010; (60) 282-284



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Characterization of enamel in primary teeth by optical coherence tomography for assessment of dental caries [Accessible from the Wiley link [on this page](#)]

Int J Paediatr Det 2010; (20):
158-164