Manchester Imaging
### ARTIFICIAL INTELLIGENCE DENTAL SOFTWARE

ADEPT study proves the benefits of AI technology for dentistry

Developments in AI are of growing interest to the dental profession and now a <u>peer-reviewed study</u> has proven that a new AI tool significantly enhances dentists' ability to detect enamel-only proximal caries.

University of Manchester Dental School's ADEPT (AssistDent Enamel-only Proximal caries assessmenT) study, published in the British Dental Journal, involved 23 dentists, randomly divided into a control arm (without AI assistance) and an experimental arm in which AI assistance provided on-screen prompts indicating enamel-only proximal caries. Participants in the study analysed 24 bitewings which had been inspected previously by an expert panel who identified 65 enamel-only carious lesions and 241 healthy proximal surfaces.

The participants in the ADEPT study who used AssistDent® AI software identified 75.8% of the caries - considerably more than the control group, who found 44.3%. These results reflect the difficulty of spotting early-stage proximal caries when examining bitewing radiographs, as the subtle patterns that represent demineralisation are often missed by the human eye. The AI tool is proven to aid clinical judgement and, if identified early enough, the disease can be reversed by non-invasive means, a critical aspect of preventive dentistry.
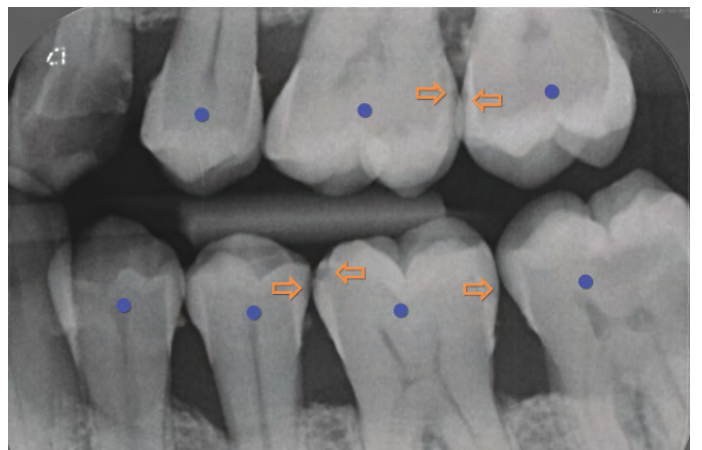
The AssistDent® graphical user interface. Orange arrows indicate the presence of enamel-only proximal caries and purple circles indicate that the tooth has been detected and analysed by the AI algorithm.

AssistDent®

The AssistDent® software is developed by Manchester Imaging, a company established to commercialise research into preventive dentistry from the University of Manchester.

Hugh Devlin, Professor of Restorative Dentistry at University of Manchester and clinical director at Manchester Imaging said: *"We are delighted to have our research proven through peer review in the ADEPT study and are excited about the potential of this new technology. Dental caries is the most common non-communicable disease worldwide, and so the opportunity for early-stage detection will greatly benefit patients' oral health and help dentists to avoid invasive treatment, allowing them to focus on more preventive practice."*

The participants in the study were recruited from two sources: practicing dentists who also tutor at the University of Manchester Dental School and practising dentists undertaking postgraduate training within the University of Manchester Foundation NHS Trust.

Tony Travers, CEO at Manchester Imaging, said: *"Our purpose is to harness AI's potential for dentistry and to raise awareness of its value as an expert colleague. The ADEPT study demonstrates the benefits of the technology, allowing routine tasks to be conducted more quickly and accurately, and giving dentists more time to focus on patient engagement and education. As a research-driven company, we are exploring the potential to develop the AssistDent® software, and so the results of the ADEPT study are particularly encouraging."*
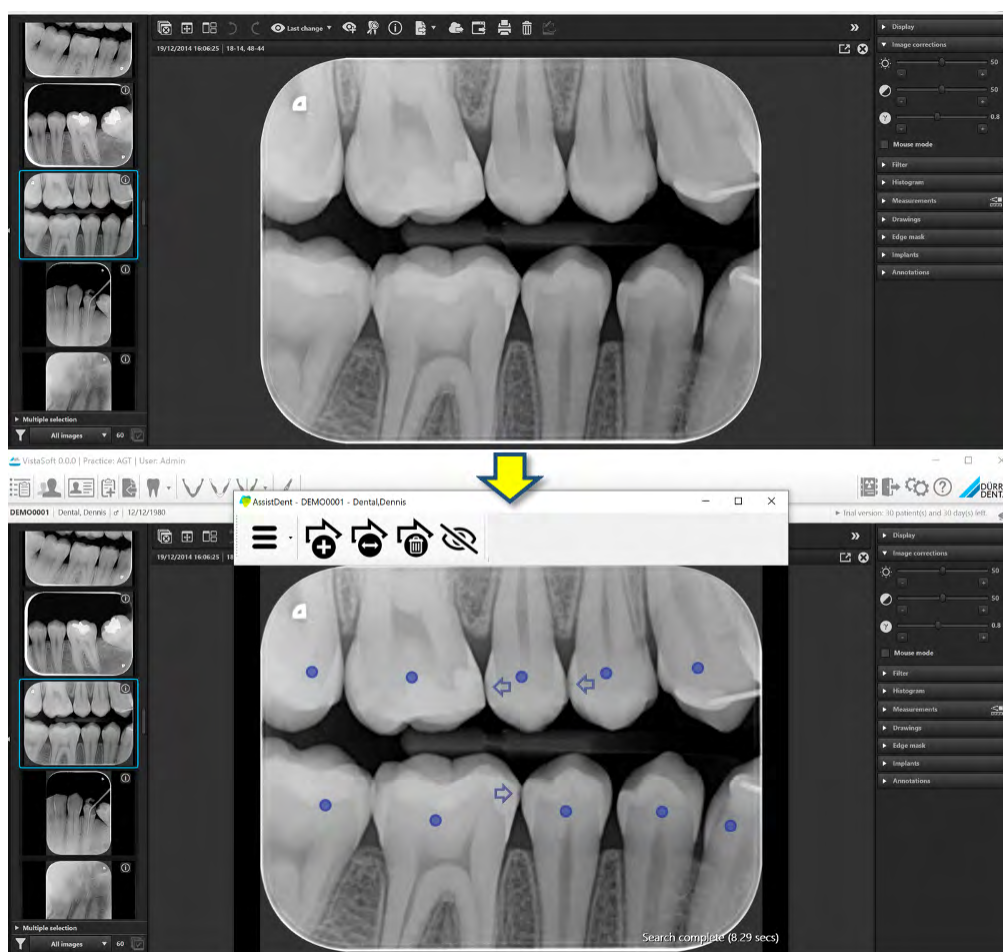
AI software indicates potential enamel-only proximal caries

For more information about the ADEPT study and AssistDent® AI technology, please contact Manchester Imaging:

📞 info@mancheter-imaging.com
✉ +44 (0)7776 481645
🌐 www.manchester-imaging.com