

## Hong Kong uses AI for early detection of gum inflammation

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**Researchers plan to utilise the AI system for community services, making the technology more accessible to elderly**



A groundbreaking study led by researchers from the Faculty of Dentistry of the University of Hong Kong (HKU), in collaboration with multiple international institutions has successfully demonstrated the use of artificial intelligence (AI) in detecting gum inflammation, also known as gingivitis, from intraoral photographs.

This cutting-edge technology can revolutionise early detection and prevention of oral and systemic diseases linked to gum inflammation, such as tooth loss, cardiovascular diseases, and diabetes.

The study shows that AI algorithms can analyse patients' intraoral photographs to detect signs of inflammation like redness, swelling, and bleeding along the gum margin with over 90% accuracy, matching the visual examination of a dentist. This innovative technology enables population-wide monitoring of gum health and paves the way for more personalised dental care.

The study was conducted by researchers from the HKU Faculty of Dentistry, the Department of Computer Science at Hong Kong Chu Hai College, the School of Information Engineering at Guangdong University of Technology, and the Faculty of Dentistry at The National University of Malaysia. It involved developing and testing an AI model using a dataset of over 567 images of gums with varying degrees of inflammation and is one of the first to explore the use of AI in detecting gum inflammation.