

## EDITORIAL

# Early case detection of diabetes in dental practice: a missed opportunity

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The world is experiencing a Type 2 diabetes (T2D) pandemic, with 10.5% of adults affected (2021), predicted to reach 12.2% by 2045.<sup>1</sup> The human and financial cost (estimated to hit \$1,054 billion in 20 years) is huge, with significant impacts on morbidity and premature mortality.<sup>1</sup> Severe periodontitis has similarly increased in prevalence by 8.44% over the last 30 years<sup>2</sup> and is independently linked to T2D prevalence, incidence, and complications.<sup>3</sup> Undiagnosed/sub-optimally controlled diabetes negatively impacts periodontal outcomes and vice versa, creating a compelling case for closer collaborative working between medical and dental teams; a call to action already made by the WHO, NHS England, The Economist, World Organisation of Colleges of Family Doctors and the International Diabetes Federation with the European Federation of Periodontology.

Oral healthcare professionals (OHPs) see many patients when they are systemically well, providing an opportunity to engage in risk-driven early case detection of diabetes and non-diabetic hyperglycaemia (NDH). NDH is a condition where blood glucose levels are elevated but not quite at the threshold that defines T2D. NDH is reversible, and with early identification and instigation of cost-effective prevention programmes can delay or prevent T2D onset and complications. With 22 million undiagnosed cases of diabetes in Europe and 1 million in the UK, failure to engage OHPs in risk-driven early case detection of NDH/T2D represents a missed opportunity, particularly when periodontitis is a recognised risk factor for T2D, and periodontal assessment is mandatory within NHS dentistry. Moreover, prevention and behaviour change are the foundation stones of dental education and are embedded within oral care pathways.

The public, patients, physicians and other stakeholders support OHPs engaging in

risk-driven early case detection of NDH/diabetes in primary care dental practices. NICE recommend the use of validated risk-assessment tools/questionnaires to identify those at risk of, or who unknowingly have, T2D.<sup>4</sup> A two-step protocol is proposed, employing a validated, dentally-focused questionnaire to stratify patients based upon risk, followed by point-of-care testing (POCT) for HbA1C (glycated haemoglobin), using a validated device to mitigate deficiencies in the specificity of risk questionnaires.<sup>4</sup> However, whilst initial data demonstrate feasibility,<sup>5</sup> the



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specific care pathway and practicalities of its implementation in busy day-to-day dental practices (alongside cost-effectiveness and identification rates) remain to be defined, as do follow-up protocols for formal diagnosis and management by physicians.

Here, we report headline data from a study funded by the National Institute for Health and Care Research and Diabetes UK, which set out to develop and validate a dental questionnaire for early case detection of NDH/T2D for use in dental practice, and to employ a two-step protocol using a point-of-care HbA1C device in tandem.

Thirteen primary care NHS dental practices took part and teams (nurses, hygienists, dentists) were trained in the two-step protocol for use in patients >40 years of age.

To date, of 700 patients who reported not having diabetes, almost 15% have tested with an HbA1C level in a range that would qualify them for intervention or referral to

a national diabetes prevention programme (5.9% diabetes, 8.8% NDH). All OHPs engaged in the process, potentially extending their scope of practice, and addressing calls from national/international advisory bodies to develop integrated dental-medical pathways to tackle non-communicable diseases like diabetes. The data are not from areas of high social deprivation, where detection rates may potentially be even higher. A detailed analysis of the full dataset, patient and clinician feedback, performance of risk questionnaire, and outcomes following detection (onward

referral for formal diagnosis/management) will be reported in full in due course. ■

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<https://doi.org/10.1038/s41415-023-6493-2>

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