



How does treating periodontitis improve blood glucose control?

Did you know that periodontitis (irreversible gum disease) and diabetes affect each other in both directions? This is called a bidirectional relationship. When diabetes is poorly controlled, it can lead to increased inflammation in the body, which can make periodontitis worse. On the other hand, untreated periodontitis causes inflammation in the mouth which then triggers a systemic inflammatory response (inflammation that spreads throughout your body). This can raise your blood glucose levels, making it harder to manage your diabetes and increasing the risk of diabetic complications. The good news is that improving one condition can help improve the other. This shows why it's so important to manage both conditions together to improve your overall health.

What is HbA1c and why is it important?

HbA1c (glycosylated haemoglobin) is a key measure of diabetes and shows your average blood glucose levels over the past 2-3 months. It works by measuring how much sugar is attached to your red blood cells (which live for about 2-3 months). Compared to checking blood sugar levels at one point in time, HbA1c gives a better picture of your long-term blood sugar control.

HbA1c thresholds for diabetes and pre-diabetes in the United Kingdom (UK) are:

- $\geq 48\text{mmol/mol}$ ($\geq 6.5\%$) – Indicates a diagnosis of diabetes
- 42mmol/mol – 47mmol/mol ($6.0 - 6.4\%$) – Indicates pre-diabetes (higher than normal blood glucose levels and indicates you are at an increased risk of developing diabetes)
- $< 42\text{mmol/mol}$ ($< 6.0\%$) – Normal blood glucose levels

How does periodontal treatment affect glucose control?

A Cochrane systematic review (a high-quality summary of research) looked at studies involving people with both diabetes and gum disease. The research found that treating gum disease can lead to significant reductions in HbA1c levels:

- 4.7mmol/mol (0.43%) at 3 - 4 months
- 3.3mmol/mol (0.30%) at 6 - months
- 5.4mmol/mol (0.50%) at 12 - months

What does this mean for you?

The research shows that periodontal treatment can result in clinically significant improvements in blood sugar levels:

- A reduction of 0.3% to 0.5% in HbA1c is similar to the effect of some diabetes medications.
- Improving gum health can help reduce your risk of diabetic complications, like heart disease and kidney problems.
- It also highlights the importance of working with both your dental team and your diabetes care team to manage both conditions together.

References

Simpson TC, Clarkson JE, Worthington HV, MacDonald L, et al. Treatment of periodontitis for glycaemic control in people with diabetes mellitus. Cochrane Database Syst Rev. 2022 Apr 14;4(4): CD004714. doi: 10.1002/14651858.CD004714.pub4. PMID: 35420698;