



Diabetes and oral health

The risk of oral health problems can be more common in people with diabetes and research carried out by the European Federation of Periodontology (EFP) highlights that severe gum disease may increase the chance of type 2 diabetes.¹ Improving oral and gum health should be part of overall diabetes management, with collaboration and appropriate signposting between primary healthcare professionals for people with poor glycaemic control and/or poor periodontal and oral health.

Research has highlighted¹:

- People with diabetes and severe gum disease have higher HbA_{1c} levels than those with healthier gums.
- Severe gum disease may increase the chance of developing type 2 diabetes.
- Even in people without diabetes, glycaemic control is not optimal when severe gum disease is present.
- The worse the gum disease, the more likely a person is to go on to suffer damage to other organs (e.g. heart

Oral manifestations of diabetes³

- Sore or swollen gums
- Bleeding gums while brushing or eating
- Receding/shrinking gums
- Loose teeth
- Increased risk of tooth decay
- Taste disturbance
- Halitosis (bad breath)
- Infection/abscesses
- Poor wound healing
- Xerostomia (dry mouth)
- Oral candidiasis (oral thrush)
- Burning mouth syndrome

or kidneys) because of their diabetes.

The greatest impact can be achieved by ensuring that all patients with diabetes are

signposted to a general dental practitioner for periodontal screening.²

Oral infection risk and diabetes

People with poor glycaemic control are more likely to develop the **fungal infection** oral candidiasis (oral thrush).

People with diabetes have an impaired defence mechanism and are more susceptible to developing **oral bacterial**

infections.

People with diabetes with poor metabolic control are more prone to spreading and recurrent bacterial infection, and may be more prone to deep neck bacterial infection.⁴

People with suspected

dental infection should be signposted to their General Dental Practitioner for treatment or, in severe cases with systemic involvement and airway risk, referral to an oral and maxillofacial surgery department.

Poor soft tissue regeneration and delayed osseous healing in people with diabetes may lead to poor wound healing following surgical procedures. Patients with suspected delayed wound healing should be reviewed by their dentist.

Oral symptoms of oral candidiasis³

- Bitter taste in the mouth
- Intra-oral redness or bleeding
- Lesions in the mouth (creamy white-coloured patches)
- Painful, sore, burning mouth and/or throat
- Angular cheilitis (cracks at corners of the mouth)

Investigations

- Oral swab
- Signpost to general dental practitioner for oral health check

Oral symptoms of dental infection

- Preceding toothache
- Pain on biting
- Tooth tender to percussion
- Facial swelling
- Fever
- Discharge/sinus on gum
- Bad taste in mouth
- Lump on gum/abscess
- Systemic symptoms, including fever and malaise
- Enlarged lymph nodes

Periodontitis and diabetes: a two-way relationship

Periodontitis (gum disease) affects the gums and bone supporting the teeth.

Role of diabetes in periodontal disease

- Diabetes is a significant risk factor for periodontitis, if sub-optimally controlled.⁵ People with hyperglycaemia are three times more likely to develop periodontitis.
- Diabetes increases the severity of periodontitis.^{6,7}

Role of periodontal disease in diabetes

- There is a direct and dose-dependent relationship between periodontitis severity and diabetes complications.
- Mechanical periodontal therapy is associated with an approximately 4-mmol/mol reduction in HbA_{1c} at 3 months, equivalent to adding a second drug to a regimen for diabetes.

A 5-mmol/mol HbA_{1c} reduction at 12 months following intensive

periodontal therapy has been reported.⁸

Periodontal disease:

Oral symptoms

- Bleeding gums
- Bad breath (halitosis)
- Loose teeth
- Change in position of the teeth or gaps in the teeth
- May or may not be symptomatic
- Abscesses

Screening tools

- Basic periodontal examination (BPE)
- Full six-point pocket chart
- Radiographs

Treatment of gum disease

Treatment for periodontitis usually begins with non-surgical periodontal therapy.

- Inflamed, swollen and painful gums contribute to a lowering of quality of life. The importance of early intervention through multi-disciplinary team working and signposting is evident.
- Simple treatment and early intervention can make a great difference.

This patient attended with sore, bleeding gums and bad breath (above). Following treatment, the gums have stopped bleeding and the bad breath has been eliminated (below).



References

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Guidelines and working together

- Dentists are encouraged to gather a careful history from their patients who have diabetes, including their most recent HbA_{1c} results.
- Diabetes patients without periodontitis should be placed on a preventive care regimen and monitored regularly. Those with periodontitis should be treated accordingly, ensuring that the importance of good glycaemic control is also emphasised.
- Dental patients without diabetes but with risk factors for type 2 diabetes should be informed of their risk and referred to their general practitioner for screening.⁹
- Guidelines encourage physicians to refer people with diabetes for a periodontal examination.¹⁰
- The public, patients and healthcare professionals strongly support formal risk assessment for diabetes in dental practices. Potentially, HbA_{1c} testing would form part of the assessment (rather than for formal diagnosis).¹¹

Prevention and management

SIGNPOSTING

Appropriate signposting for diabetes patients with poor glycaemic control and/or poor periodontal health

General Medical Practitioners → General Dental Practitioners for regular oral health and periodontal screening

General Dental Practitioners → General Medical Practitioners for HbA_{1c} testing

Advice for patients to maintain good oral health^{12,13}

- Regular check-ups with the dentist and/or hygienist for screening of the early signs of gum disease, with treatment as necessary.
- Follow an effective plaque-removal regimen. Brush teeth twice daily (morning and night) with an electric toothbrush for at least 2 minutes each time.
- Use fluoridated toothpaste and spit (do not rinse) after brushing. Fluoride helps prevent tooth decay.
- Use small, interdental brushes or floss once a day to remove plaque from between the teeth where the tooth meets the gum, preferably before toothbrushing.
- Minimise sugary snacks and carbonated drinks to reduce the risk of tooth decay.
- Water is the only drink that should be drunk after toothbrushing at night.
- Avoid smoking.
- Maintain good glycaemic control to decrease the risk of having gum disease.
- If gum disease is present, improve glycaemic levels to slow disease progression and improve treatment outcome.

Further resources

British Society of Periodontology:

- Link between severe gum disease and diabetes: <https://bit.ly/37xj3oj>
- Gum health awareness poster for healthcare professionals: <https://bit.ly/30Zgiy>
- Gum health awareness poster for waiting rooms: <https://bit.ly/2vjE6ky>

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