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# Periodontitis and Diabetes

## TIED TOGETHER IN A MUTUAL RELATIONSHIP

## Periodontitis

Periodontitis is a **chronic inflammatory disease characterised by the damage of tooth-supporting structures**, eventually leading to tooth loss

It is **initiated by the pathogenic dental-plaque** biofilm above and below the gum margin; the plaque calcifies with time to form calculus, which worsens the disease

**Later stages of periodontal disease** include gingival bleeding, pain, compromised aesthetics, recurrent periodontal infections, tooth mobility, and eventually, tooth and bone loss

It is **associated with multiple systemic diseases**

## Signs and symptoms of periodontitis:

- **Red or swollen gums**
- **Bleeding from the gums or blood in the sink after brushing**
- **Bad taste**
- **Teeth that appear elongated**
- **Bad breath**
- **Loose teeth**
- **Increasing spaces between teeth**
- **Hard deposits of calculus on teeth**
- **Dry and/or burning mouth**

**Patients with periodontitis are more likely to develop type 2 diabetes mellitus (DM)**

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# Diabetes mellitus (DM)

- DM is a **chronic, metabolic disorder** with systemic implications
- **Type 1 DM** is an autoimmune disease affecting the pancreas, resulting in **impaired/absent insulin production**

- **Hyperglycaemia** is a characteristic feature of DM
- **Type 2 DM** occurs because of **insulin resistance** in tissues and other risk factors

## Patients with DM show a high prevalence of periodontitis

**Both DM and periodontitis are widespread, non-infectious conditions that are prevalent globally and increase with age**

**DM prevalence:**

- Over 450 million people worldwide and still rising

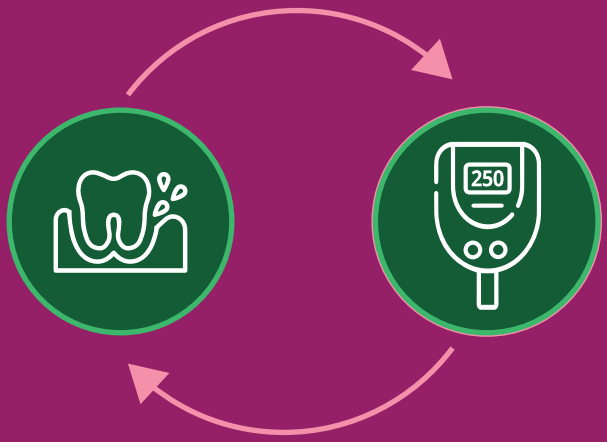
**Severe periodontitis prevalence:**

- 750 million people across the world

## Periodontitis and DM share a mutual interconnection

People with **severe periodontitis** have an increased risk of developing type 2 DM

Periodontitis is significantly associated with **poorer glycaemic control** (HbA1C) and higher blood glucose levels in patients with DM




Periodontitis influences glycaemic control and inflammation in DM

Patients with DM have a threefold higher risk of developing **gum disease**

**Insulin resistance** co-exists with gum disease

**People with periodontitis and type 1 or type 2 DM have a higher risk of:**

- **Systemic complications** such as retinopathy, chronic kidney disease, cardiovascular disease, and cerebrovascular accidents
- **All-cause mortality**

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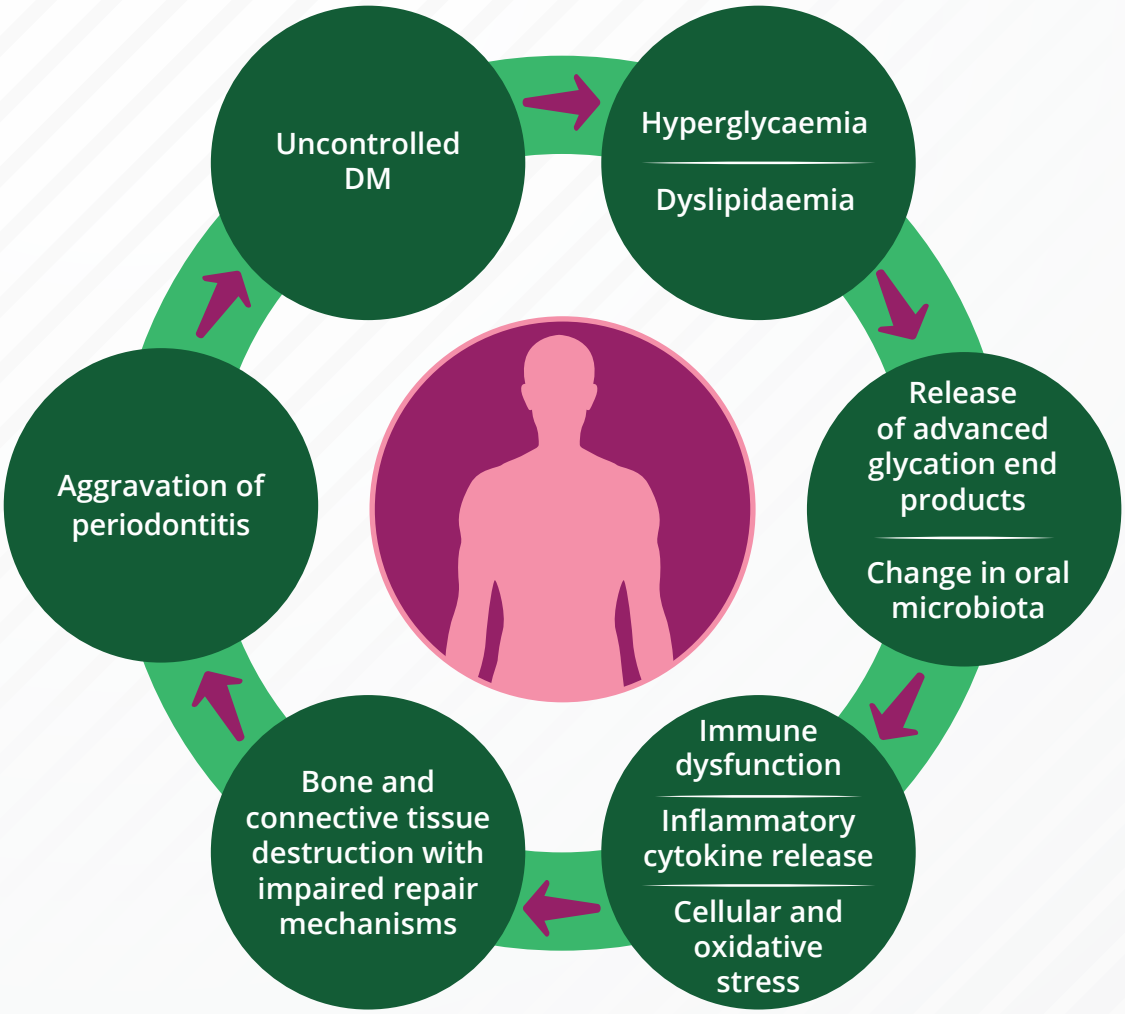
# How do DM and periodontitis affect each other?




## Not addressing oral health issues in people with DM could lead to:

- Aggravation of **periodontal disease** and its symptoms
- **Early loss** of teeth
- Difficulty in **speech** and **eating**
- Aggravation of **inflammation**
- **Build-up of inflammatory cytokines** in the gums, which could further circulate to the rest of the body

## Successful periodontal therapy will:

- Arrest **disease progression**
- Stabilise **bone levels**
- Diminish **symptoms**
- Lengthen the **life expectancy** of teeth
- Reduce levels of **inflammatory cytokines**
- Reduce **HbA1c** levels and **glycaemia**

## It might also:

- Help reduce the **number of drugs required** for maintenance of glycaemic control
- Contribute to reduced diabetes-associated **morbidity** and **mortality**

- **Oral health issues can be easily diagnosed and clinically controlled**
- **Co-management of both diseases by dental practitioners and physicians is of utmost importance**

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## Role of physicians

### In patient education:

- To inform people with DM about the **increased risk** of gingivitis and periodontitis
- To increase oral health **awareness**
- To inform people with DM about the **negative impact of periodontitis** on their:
  - Health
  - Glycaemic control
  - Increased rates of complications
  - Mortality
- To educate patients about the positive impact of **successful periodontal therapy** on their health and well-being

### In taking dental history:

- To ask about **prior history**, signs, or symptoms of periodontal or oral disease

### To ensure a prompt referral to the dental practitioner:

- For extensive **tooth loss** and dental rehabilitation
- To restore adequate **chewing ability**
- For any signs of **concern** regarding dental health

## Role of the oral health team

### In glycaemic control:

- To take a detailed **medical history**
- To check the degree of **glycaemic control** and be updated with the most recent blood glucose and HbA1c values

### In education:

- To inform people with DM about the **increased risk** of gingivitis and periodontitis
- To provide all patients with basic instructions on **oral care,** including the use and importance of power toothbrushes, antimicrobial fluoride toothpaste, interdental cleaning, and mouth washes

### In periodontal and dental management:

- To conduct a thorough **oral examination**
- To place patients with DM on a regularly monitored **preventive care** regime
- To aggressively manage **acute oral/periodontal infections** in patients with DM
- To provide non-surgical **periodontal therapy** to help improve glycaemic control
- To note that surgical periodontal and implant therapy is **contraindicated** in patients without acceptable diabetes control
- To offer **dental rehabilitation** to patients and treat restore adequate mastication
- To evaluate and treat **dry and/or burning mouth** symptoms


**Content adapted from:**

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