

INTRODUCTION

As instances of Type II Diabetes and Periodontitis increase, it is imperative that one inquires further on a potential relationship between the two diseases

- **Type II Diabetes (Adult-onset diabetes)** is a disease that occurs when the blood glucose is too high. The body either fails to produce or doesn't adequately utilize insulin, a hormone produced by the pancreas that regulates blood glucose. This causes an overproduction of glucose present in the blood stream as it doesn't reach the cells (NIDDK, 2021).
- **Periodontitis** is an inflammatory disease caused by dental biofilm that can lead to the destruction of supporting tooth structures (Preshaw & Bissett, 2019).

SCAN ME



INFLAMMATORY PATHWAY

Both Type II Diabetes and Periodontitis share an inflammatory pathway. The excess glucose found in the blood stream, hyperglycemia, makes the host more susceptible to other infectious diseases. People with periodontitis have higher levels of proinflammatory cytokines which escalate the rate of inflammation throughout the body, thus increasing the chance of developing diabetes.

Further examining their relationship: In one experimental study patients with both periodontitis and Type II diabetes were assessed. One group was given nonsurgical periodontal treatment while the other group was not. The HbA1c values and C-reactive protein, a pro-inflammatory cytokine, were significantly higher in the group not treated (Rapone et al., 2021).

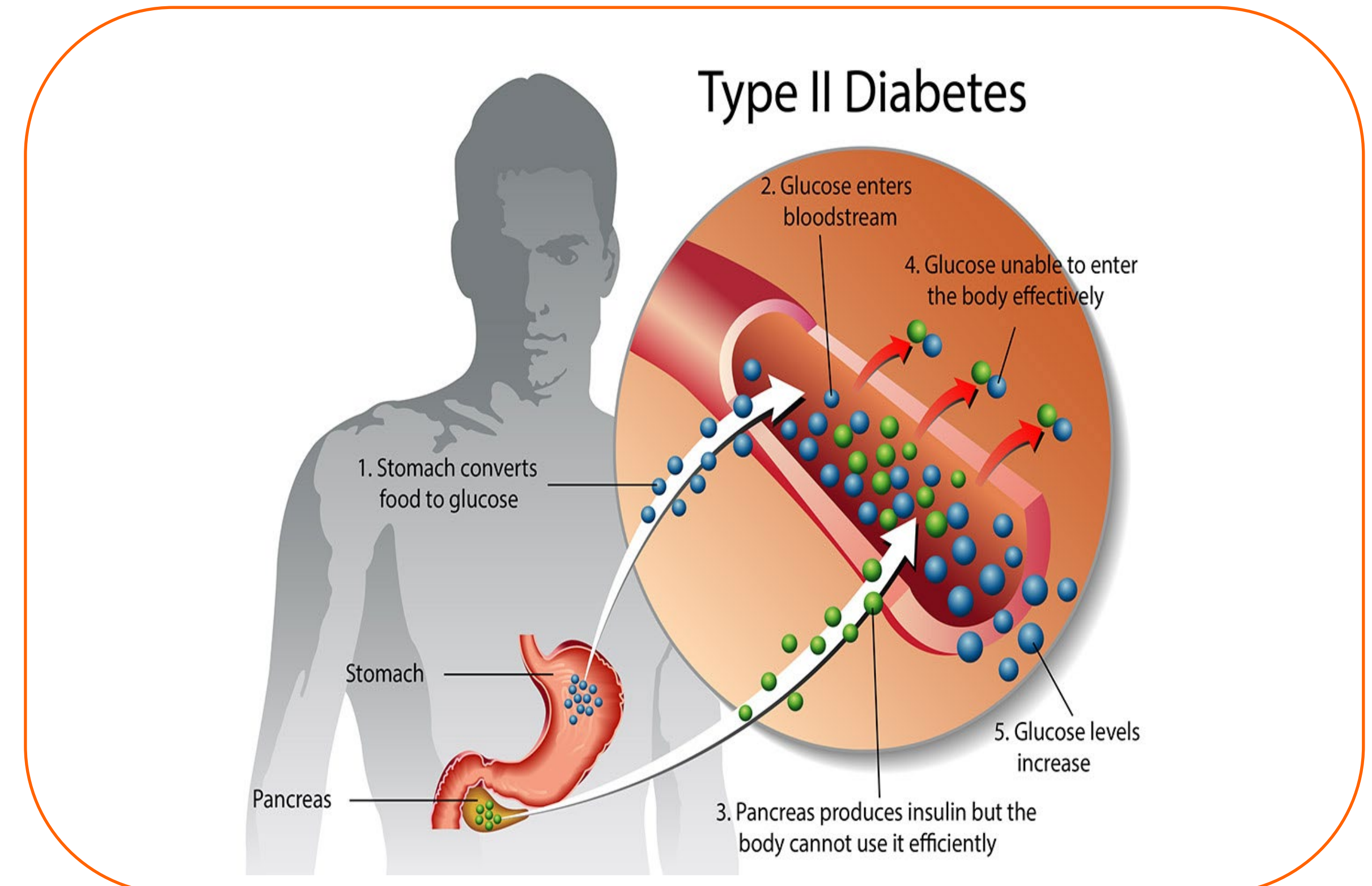


Figure 1 – Courtesy of Healthdirect (n.d.)

ORAL MANIFESTATIONS

- **Xerostomia:** Xerostomia is one of the most common oral manifestations of diabetic patients. It affects between 34-51% of diabetic patients. The etiology is unknown, but it could be connected to polyuria (excessive urination) which is common in diabetic patients. Xerostomia can cause difficulties swallowing, eating, speaking and can increase the patient's risk of getting carious lesions. (Rohani, 2019).
- **Burning mouth:** Can be related to diabetic neuropathy. Diabetic neuropathy is caused by continuous sustained high blood sugar levels over a long period of time which causes damage to the nerves. This burning sensation can be debilitating to the patient.
- **Poor wound healing:** The diabetic patient is immunocompromised and suffers from decreased blood flow which prevents cuts or tears in the oral cavity from healing properly. A small cut that is not healed properly may become infected and lead to further issues.

RELATIONSHIP BETWEEN PD AND TYPE II DIABETES

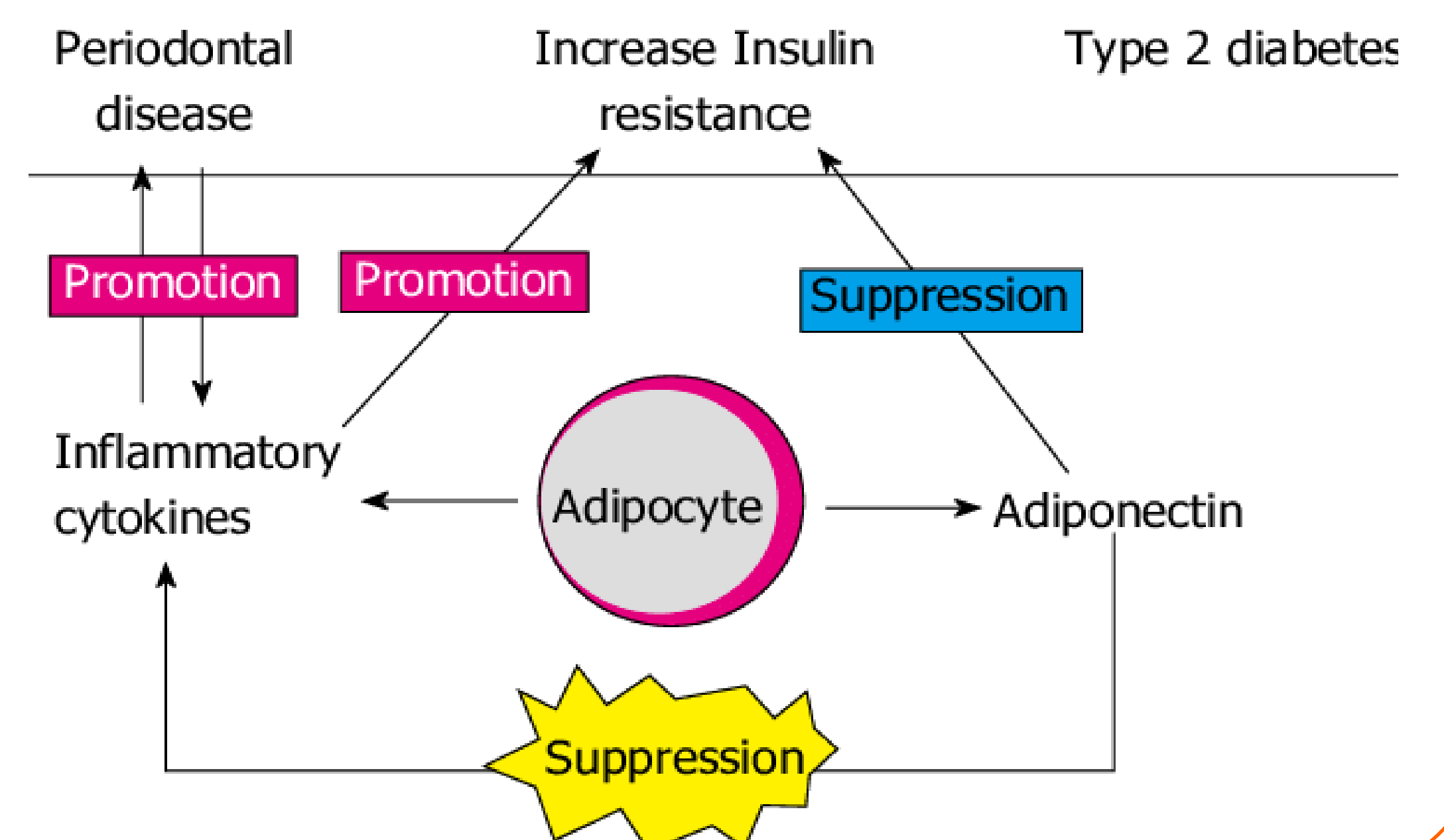


Figure 2 – Courtesy of World J Diabetes (2014)

THE ROLE OF THE DENTAL HYGIENIST

- During the assessment phase, the dental hygienist would be asking questions to both the patient and the patient's physician regarding the state of their diabetes. The dental hygienist would be sure to ask what their A1C and last blood sugar level reading was, and whether the patient needs to be premedicated prior to treatment.
- The dental hygienist would perform an intra and oral exam to study the overall appearance of the tissue to look for signs of recession and inflammation which are present in patients with periodontitis. The hygienist would also probe around the mouth to look for signs of bleeding and check the x-rays for evidence of bone loss which are also signs of periodontitis.



Patient **with** diabetes/periodontitis
(recession, bone loss, and inflammation present)

Figure 3 – Courtesy of Hawkins Family Dental (2020)



Patient **without** diabetes/periodontitis
(pink, pyramidal gingiva present)

Figure 4 – Courtesy of EPF (n.d.)

CONCLUSION

While the association between Type II Diabetes and Periodontitis is evident, implementing the following can minimize further distress from occurring:

- The RDH should educate the patient on the relationship between periodontitis and diabetes.
- The RDH should stress the importance of maintaining good home care and regularly visiting the dentist. They would then demonstrate proper brushing and flossing technique to the patient.
- The RDH should urge the patient to diligently take their medication and following nutritional guidelines for diabetic patients in order to properly control their blood sugar.
- Patient should be referred to a Periodontist if the state of their periodontium requires further treatment beyond the DH's scope of practice.

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