

Oral Health Fact Sheet for Dental Professionals

Adults with Type 1 Diabetes

Diabetes type 1 is a disease in which the body does not produce insulin, resulting in a high level of sugar in the blood. (ICD 9 code 250.0)

Prevalence

- 23.6 million Americans have diabetes — 7.8% of U.S. population. Of these, 5.7 million do not know they have the disease.
- 1.6 million people ≥ 20 years of age are diagnosed with diabetes annually.
- Type 1 Diabetes, typically diagnosed in childhood, accounts for 5–10% of all individuals with diabetes.

Manifestations

Clinical of untreated diabetes

- High blood glucose level
- Excessive thirst
- Frequent urination
- Weight loss
- Fatigue

Oral

- Increased risk of dental caries due to salivary hypofunction
- Accelerated tooth eruption with increasing age
- Gingivitis with high risk of periodontal disease (poor control increases risk)
- Salivary gland dysfunction leading to xerostomia
- Impaired or delayed wound healing
- Taste dysfunction
- Oral candidiasis
- Higher incidence of lichen planus

Other Potential Disorders/Concerns

- Ketoacidosis, kidney failure, gastroparesis, diabetic neuropathy and retinopathy
- Poor circulation, increased occurrence of infections, and coronary heart disease

Management

Medication

- Insulin injections (no oral health side effects)

Behavioral

- None

Dental Treatment and Prevention

- Ensure glycemic control at appointment time. Review recent diabetes control with patient. Hemoglobin A1c (HbA1c) <7 indicates good control in previous 3 months, >8 indicates poor control.
- Have a source of glucose readily available in the office.
- Schedule short morning appointments. Ensure that patient has eaten a meal and taken usual medication prior to treatment.
- Monitor vital signs at appointments. Patients with abnormal pulse rate and/or elevated blood pressure should be approached with caution. Overall poor physical status increases the risk of complications during and after dental treatment.
- Local anesthetic with epinephrine 1:100,000 can be used in well-controlled diabetics. Use caution on diabetic patients with hypertension, as epinephrine has a pharmacologic effect opposite of insulin.
- Salicylate and NSAIDs in large doses increase hypoglycemia.
- Monitor oral disease progression, oral hygiene, diet, and smoking habits frequently.
- Consider increased recall and periodontal maintenance frequency. Because periodontal disease can significantly worsen diabetes and associated cardiac disease, treat aggressively.
- Consult with patient's physician before surgical procedures as insulin dosage may need to be adjusted and post-operative diet may need to be altered.
- In patients with candidiasis, prescribe sugar-free Nystatin (clotrimazole troches typically contain sugar and should be avoided).
- For patients with recurrent HSV infection, management with systemic and topical medications is indicated to decrease frequency and duration of infection. Increased oral comfort will improve the patient's ability to manage diabetes through diet.
- Consider antibiotic coverage for invasive dental procedures for those with poorly controlled diabetes since there may be increased risk of infection and delayed wound healing. Consultation with the patient's treating physician is recommended. Treat oral infection (such as recurrent HSV) and ulceration aggressively as increased oral comfort will improve the patient's ability to manage their diabetes through diet.
- Provide tobacco prevention and cessation education. People with diabetes who smoke are 20 times more likely to develop periodontitis.

Hypoglycemic episode :

- Symptoms include mood changes, hunger, weakness, and decreased spontaneity leading to tachycardia, sweating, and incoherence. If occurs, terminate dental treatment immediately and administer 15 grams of fast-acting carbohydrate (1/2 can of regular soda, 4 oz fruit juice, or 3–4 glucose tablets). Monitor blood glucose after treatment to determine if additional carbohydrate is necessary. If patient is unable to swallow or loses consciousness, seek medical assistance and administer 1 mg glucagon IM or subcutaneously.

As needed for patients with xerostomia:

- Educate on proper oral hygiene (brushing, flossing) and nutrition.
- Recommend brushing teeth with a fluoride containing dentifrice before bedtime. After brushing, apply neutral 1.1% fluoride gel (e.g., Prevident 5000 gel) in trays or by brush for 2 minutes. Instruct patient to spit out excess gel and NOT to rinse with water, eat or drink before going to bed.
- Recommend xylitol mints, lozenges, and/or gum to stimulate saliva production and caries resistance.

Additional information: [Special Needs Fact Sheets for Providers and Caregivers](#)

Adults with Type 1 Diabetes continued

References

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- Mealey, B.B. (2006) Periodontal disease and diabetes. *J Am Dent Assoc*, 137(2): 26S–31S.
- [NIH Institute for Diabetes](#)
- [National Diabetes Education Program NIH Facts](#)

Additional Resources

- [NIH Institute for Diabetes](#)
- [National Diabetes Education Program](#)
- [American Diabetes Association](#)
- [International Diabetes Federation Information for Health Professionals](#)
- [Drugs Affecting Blood Glucose Levels](#)