

Oral Health Fact Sheet for Dental Professionals

Children 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

< 1% in children

Manifestations

Clinical of untreated diabetes

- High blood glucose level
- Excessive thirst
- Frequent urination
- Weight loss
- Fatigue
- Poor growth in infants

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

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, and caregiver/parent as appropriate. Hemoglobin A1c (HbA1c) <7 indicates good control in previous 3 months, > 8 indicates very poor control.
- Schedule short morning appointments. Ensure that child has eaten a meal and taken usual medication prior to treatment.
- Monitor oral disease progression, oral hygiene, diet, and smoking habits frequently. Consider increased recall and perio maintenance frequency. Treat periodontal disease aggressively. Periodontal disease can significantly worsen diabetes and associated cardiac disease.
- Consult with child's physician before surgical procedures as insulin dosage may need to be adjusted.

Children with Type 1 Diabetes continued

- In children with candidiasis, prescribe sugar-free Nystatin (clotrimazole troches typically contain sugar and should be avoided).
- For children with recurrent HSV infection, management with systemic and topical medications is indicated to decrease frequency and duration of infection. Increased oral comfort will improve child's ability to manage diabetes through diet.
- Consider antibiotic coverage for children with poorly controlled diabetes since there may be increased risk of infections and delayed wound healing. Treat oral infection and ulceration aggressively.
- 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 (glucose tablets, sugar, juice, etc). 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 glucagon subcutaneously. Pediatric dosage schedule for glucagon: < 20kg: 0.02-0.03 mg/kg or 0.5 mg and > 20kg: 1mg.

Look for signs of physical abuse during the examination. Note findings in chart and report any suspected abuse to Child Protective Services, as required by law. Abuse is more common in children with developmental disabilities and often manifests in oral trauma.

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

References

- Skamagas, M., Breen, T.L., LeRoith, D. (2008) Update on diabetes mellitus: prevention, treatment, and association with oral diseases. *Oral Dis*, 14(2):105-114.
- Lalla, E., Cheng, B., Lal, S., Tucker, S., Greenberg, E., Goland, R., Lamster, I. (2006) Periodontal changes in children and adolescents with diabetes: a case-control study. *Diabetes Care*, 29(@): 295-299.
- Vernillo, AT. (2003) Dental considerations for the treatment of patients with diabetes mellitus. *J Am Dent Assoc*, 134: 245-335.

Additional Resources

- [NIH Institute for Diabetes](#)
- [Special Care: an Oral Health Professionals Guide to Serving Young Children with Special Health Care Needs](#)
- [Bright Futures Oral Health Pocket Guide](#)
- [American Academy of Pediatric Dentistry: 2011–2012 Definitions, Oral Health Policies and Clinical Guidelines](#)
- [MCH Resource Center](#)
- [ASTDD-Special Needs](#)
- [Block Oral Disease, MA](#)
- [NOHIC-NIDCR publications](#)
- Free of charge CDE courses: [MCH Oral Health CDE](#) (4 CDE hours); [NIDCR CDE](#) (2 CDE hours)