



Section 9: Oral Care

Concern	Care/Test	Frequency
Oral Care	<ul style="list-style-type: none"> ▪ Simple inspection of gums and teeth for signs of periodontal disease ▪ Oral exam by general dentist or periodontal specialist 	<p>At diagnosis, then each focused visit</p> <p>At diagnosis, then individualize based on oral assessment and risk</p>

MAIN TOPICS INCLUDED IN THIS SECTION:

- Visual Oral Inspection and Oral Health Education by Primary Provider
- Oral Examination by Dentist
- A Team Approach: Medical-Dental Collaboration
- Identifying Undiagnosed Diabetes in the Dental Care Setting
- Identifying Undiagnosed Periodontal Disease in the Primary Care Setting
- Additional Resources
- References

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People with diabetes are more susceptible to oral infections such as periodontal disease. Susceptibility is further increased during periods of poor glycemic control or prolonged periods of hyperglycemia. The presence of active periodontitis can, in turn, impair glycemic control and increase risk of developing systemic complications of diabetes, particularly cardiovascular disease and stroke. Pregnant women with diabetes may be at increased risk of periodontitis and as a result could be at increased risk of pre-term delivery with a low birth weight infant. Individuals can avoid the negative outcomes of periodontitis through early screening, referral, and treatment.

Evidence of the influence of periodontal infection on chronic inflammatory disease states continues to mount. The current etiological theory of periodontal disease extends beyond its local effect, making a compelling rationale for prevention and early intervention. Accumulating evidence suggests that periodontal infection may increase the risk for atherosclerosis-induced conditions, including coronary heart disease and stroke, adverse pregnancy outcomes, complications of diabetes, respiratory disease, and neurodegenerative disease.

Other common, yet avoidable, oral health problems associated with diabetes include tooth decay, fungal infections, inflammatory mucosal disease, taste impairment, and salivary gland dysfunction. Xerostomia (drying of the mouth), caused by salivary gland dysfunction, may lead to burning tongue or mouth, as well as rampant caries.

Primary care providers need to perform a visual inspection of gums and teeth of persons with diabetes for signs of periodontal disease at diagnosis and during each diabetes-focused visit. An oral examination by a dentist is an essential component of optimal diabetes care but is often overlooked. An oral examination is recommended at diagnosis and then the recommended interval should be determined specifically for each patient, and tailored to meet his or her needs, on the basis of an assessment of disease levels and risk of or from oral disease. General guidelines suggest an oral examination every 6 months if dentate or every 12 months if edentate and more frequently if advised.

Visual Oral Inspection and Oral Health Education by Primary Provider

Primary care providers can be critical in detecting early signs of periodontal disease especially in people that are known not to see a dentist routinely. This is accomplished through a simple inspection of a person's gums and teeth. Optimally this is done at diagnosis of diabetes and then at each diabetes-focused visit. Visual inspection of gums and teeth can detect early periodontal disease and referral to a dentist can ensure prompt treatment of a problem that may otherwise go undetected. Some early signs and symptoms of periodontal disease include:

- Red, sore, swollen, bleeding, or receding gums or gums pulling away from teeth, causing teeth to look longer than before
- Loose or sensitive teeth; separation of teeth
- Change in the way teeth fit together with biting down
- Halitosis
- Missing teeth
- Accumulation of food debris or plaque around teeth

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People with diabetes should be informed of the risks associated with poor dental and oral care and to receive prompt referrals and treatment. Educational strategies should take into consideration special educational and cultural needs and literacy level/skill, while respecting the individual's willingness to change behavior. Key education points include:

- Encouraging people to inform their dentist or dental specialist of their current status of glycemic control, pertinent past or present medical information, and any changes in medical history or medications (both prescription and over-the-counter)
- Discussing the increased risk for preventable, but potentially life-threatening, oral infections (e.g., periodontal disease)
- Discussing strategies for preventing oral infections, such as controlling blood glucose levels and cholesterol, routine oral hygiene, and regular dental care
- Discussing the correlation between duration of diabetes and the increased risk of periodontal disease for people who use insulin
- Discussing the increased likelihood for people with diabetes not using insulin to have periodontal attachment loss (2.8 times more likely) and periodontal bone loss (3.4 times more likely), compared to people without diabetes
- Discussing the importance of early intervention and treatment options
- Explaining that periodontal disease is often asymptomatic
- Explaining that periodontal disease can lead to tooth loss, decrease the effectiveness of medications used to treat diabetes, and/or increase the risk of diabetes complications (e.g., cardiovascular disease, vascular disease, and stroke)
- Explaining that for pregnant women, an increased risk of periodontitis may be associated with a pre-term and/or low birth weight

Refer a person at risk for or with diabetes who is suspected of having periodontal disease to a dentist or dental specialist (periodontist) to ensure early and prompt diagnosis and treatment. People without teeth (edentate) should also receive a visual inspection for signs of tissue inflammation or irregularities, white or red lesions, and any change in the fit of their dentures.

Oral Examination by Dentist

A dentist should perform an oral examination at diagnosis and then the recommended interval should be determined specifically for each person, and tailored to meet his or her needs, on the basis of an assessment of disease levels and risk of or from oral disease. General guidelines suggest an oral examination every six months for dentate people or every 12 months for edentate people. More frequent dental exams are necessary if an oral screening indicates signs of new or persistent problems. Ongoing communication between the diabetes team and the dentist/dental specialist is essential to ensure optimal glycemic control. The following may be a part of standard dental care for a person with diabetes:

- Oral and dental examinations, including a complete periodontal examination
- Non-surgical and/or surgical periodontal therapy with adjunctive antibiotics
- Rigorous oral hygiene care, including self-care instruction
- Frequent follow-up to ensure that disease is controlled

A Team Approach: Medical-Dental Collaboration

These *Guidelines* encourage medical-dental collaboration to address the increased concern of the systemic influence of periodontal infection on chronic inflammatory disease states, striving for early intervention and treatment. There is sufficient evidence to support recommendations and guidelines to assist medical and dental providers in: 1) identifying persons at risk for periodontal disease if they have diabetes and/or 2) identifying persons at risk for type 2 diabetes if they have existing periodontal disease. **Medical-dental collaboration can and must be embraced by health care providers, educational institutions, governmental agencies, and public and private partners to provide a historical marker to address prevention and treatment of systemic and oral disease.**

The team approach: medical-dental collaboration is based on the Scottsdale Project. The project convened an independent panel of experts to identify and address whether there was sufficient evidence to support the development of guidelines to assist medical and dental providers in identifying people at risk for periodontal disease, diabetes, and cardiovascular disease. The Scottsdale Project encouraged the team approach to promote shared responsibility for co-management of persons at risk for or with diabetes who may or may not have periodontal disease. Experts acknowledge a number of studies that demonstrate periodontal therapy has the potential to positively impact glucose control; however, the experts succinctly noted that the supporting evidence was inconclusive. Despite this, the Scottsdale Project Report provided a consensus statement for two key recommendations:

1. Guidelines can assist **medical providers** in identifying people who are at risk for periodontal disease, or in screening people who may have undiagnosed periodontal disease and who need to be referred to a dentist or dental specialist
2. Guidelines can assist **dental providers** in identifying people who are at risk for or have diabetes and/or cardiovascular disease, or in screening people for undiagnosed diabetes and/or cardiovascular disease who need to be referred to physicians

The following section is a brief summary of recommendations for medical and dental providers to consider as they embrace a team approach to address periodontal disease.

Identifying Undiagnosed Diabetes in the Dental Care Setting

The risk of having undiagnosed type 2 diabetes when newly diagnosed with periodontal disease is unknown. However, periodontal disease is a complication of diabetes. Evolving scientific evidence supports a relationship between the two diseases, especially in people with poorly controlled diabetes, hyperglycemia, or hyperlipidemia. People with diabetes have increased susceptibility to oral infections, including periodontitis. Periodontitis occurs with greater frequency and increased severity when other systemic complications of diabetes are more advanced. This increased susceptibility does not correlate with dental plaque or calculus levels. Among people with insulin-dependent diabetes the risk for periodontitis positively correlates with the duration of diabetes. People with non-insulin-dependent diabetes are 2.8 times more likely to have periodontal attachment loss and 3.4 times more likely to have periodontal bone loss than those without diabetes.

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As recognition of periodontal disease increases, there are opportunities for dental offices to assist in identifying people at risk for or with type 2 diabetes. This may be the first step in an effort for dental practices to work collaboratively with medical professionals to address prevention and early detection. Due to the increased prevalence of diabetes in the past 10 years, dentists and dental hygienists may have a considerable opportunity and increased responsibility in assisting with screening people for undiagnosed diabetes. Dentists and dental hygienists may want to consider utilizing the tool titled “Assessing Risk and Testing for Type 2 Diabetes Pathway” in the Tools Section. This tool is an easy way to assist dentists and dental hygienists in increasing their awareness of who is at risk for type 2 diabetes and what steps they can recommend to the population they serve. This tool can be incorporated and utilized in multiple ways across dental care settings in Wisconsin.

Strategies to consider in the dental setting:

1. People at risk for type 2 diabetes, regardless of oral presentation, should be referred by dentists to have a fasting blood glucose level checked; most often, this will be done by the primary care provider as well as further diagnostic evaluation as needed.
2. People with severe periodontitis (e.g., severe for age, failure to respond to treatment, abscesses) or a fungal infection must be referred to their primary care provider for a fasting blood glucose test for diabetes.
3. Dentists and dental hygienists choosing to check a blood glucose should do so in accordance with the American Diabetes Association screening guidelines or the *Wisconsin Diabetes Mellitus Essential Care Guidelines (Section 13: Assessing Risk and Prevention of Type 2 Diabetes)*, and ensure appropriate follow up and communication of results with the person’s primary care provider.
4. To achieve the best possible outcomes for people diagnosed with diabetes and/or cardiovascular disease, dentists and dental hygienists must collaborate with primary care providers to optimize blood glucose and lipid control.
5. Professional communication is essential and use of a bidirectional communication tool is recommended. An example is the tool titled “Medical-Dental: Team Referral Form” in the Tools Section.
6. Dentists and dental hygienists can inquire and determine if a person has not had medical evaluation within two years and/or two or more of the following:
 - > 50 years of age
 - At risk for type 2 diabetes
 - Hypertension
 - Dyslipidemia with a family history of coronary heart disease or stroke
 - Tobacco use
 - History consistent with cardiovascular disease
7. Refer and document the recommendation for additional assessment of diabetes and cardiovascular risk.
8. If a person diagnosed with diabetes does not have a primary care provider and is at risk for a cardiovascular event, he/she must be referred to a health care provider.

Identifying Undiagnosed Periodontal Disease in the Primary Care Setting

Infections, including advanced periodontal disease, can lead to increased insulin resistance and a decline in blood glucose control. Occasionally, oral infections are documented as life threatening to people with diabetes. Research shows that insulin requirements are reduced in some insulin-dependent subjects following periodontal therapy. In a recent prospective study, severe periodontitis at baseline was associated with poor glycemic control, defined as an A1C of $\geq 9\%$ at follow-up. Elimination of periodontal infection and reduction of periodontal inflammation resulted in a significantly reduced A1C level.

It is not feasible for most primary care providers to include periodontal probing and intraoral radiographic x-rays, which are commonly used for the assessment and diagnosis of periodontal disease. Nevertheless, health care providers can screen by inspecting gums and teeth for signs and symptoms frequently associated with periodontal disease. Early periodontal disease can be identified based on a person's history, as well as symptoms and visual assessment of the teeth and gums.

- Red, sore, swollen, bleeding, or receding gums or gums pulling away from teeth, causing teeth to look longer than before
- Loose or sensitive teeth; separation of teeth
- Change in the way teeth fit together with biting down
- Halitosis
- Accumulation of food debris or plaque around teeth
- History of abscess
- Missing teeth

A screening tool for primary care providers titled “Diabetes: Screening Tool for Inspection of Gums and Teeth” is in the Tools Section.

Strategies for medical professionals to consider:

1. Inquire if person with diabetes has seen a dentist in the last year. If not, refer him/her to a dental provider. An oral examination is recommended at diagnosis of diabetes and then the recommended interval should be determined specifically for each person, and tailored to meet his or her needs, on the basis of an assessment of disease levels and risk of or from oral disease. General guidelines suggest an oral examination every six months for dentate people or every 12 months for edentate people. More frequent dental exams are necessary if an oral screening indicates signs of new or persistent problems.
2. If person with diabetes has seen a dentist within the last year and there are signs of periodontal disease, advise him/her to make an appointment to see a dentist right away.
3. At each visit, ask if person has bleeding gums, loose teeth, and/or gum recession.
4. Professional communication is essential and use of a bidirectional communication tool is recommended; an example is the tool titled “Medical-Dental: Team Referral Form” in the Tools Section.
5. Discuss the seriousness of periodontal disease, as chronic infection of the gums can be a complication of diabetes.
6. Advise persons with periodontal disease of an associated risk for other health problems, including poor metabolic control, heart and artery disease, and stroke.
7. Provide encouragement that periodontal disease is preventable and treatable by a dentist and dental hygienist.

Additional Resources

1. Working Together to Manage Diabetes: A Guide for Pharmacists, Podiatrists, Optometrists, and Dental Professionals, developed by the National Diabetes Education Program: http://www.ndep.nih.gov/diabetes/pubs/PPODprimer_color.pdf.
2. The Report of the Independent Panel of Experts of the Scottsdale Project: http://www.atlantadentalspa.com/articles/Periodontitis_and_systemic_health_issues_scottsdale.PDF.

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