

## Parameter on Systemic Conditions Affected by Periodontal Diseases\*

The American Academy of Periodontology has developed the following parameter on systemic conditions affected by periodontal diseases. It is well known that systemic conditions may affect the onset, progression, and treatment of such diseases (see Parameter on Periodontitis Associated With Systemic Conditions, pages 876-879). The concept of periodontal diseases as localized entities affecting only the teeth and supporting apparatus is increasingly being questioned. Periodontal diseases may have widespread systemic effects. While these effects may be limited in some individuals, periodontal infections may significantly impact systemic health in others, and may serve as risk indicators for certain systemic diseases or conditions. As part of the approach to establishing and maintaining health, patients should be informed of the possible effects of periodontal infection on their overall well-being. Given this information, patients should then be able to make informed decisions regarding their periodontal therapy. *J Periodontol* 2000;71:880-883.

### KEY WORDS

Infection/complications; periodontal diseases/complications; risk factors; systemic diseases; periodontium/physiopathology.

### CLINICAL DIAGNOSIS

#### Definition

The role of local infections in generalized disease is well established (for example, in oral-derived bacteremia and infective endocarditis). While much information is available concerning the potential effects of systemic conditions and diseases on the periodontium, less is known about the consequences of a diseased periodontium on systemic health. The periodontium may serve as a reservoir of bacteria, bacterial products, and inflammatory and immune mediators which can interact with other organ systems remote from the oral cavity. Periodontal infections may increase the risk for certain conditions by contributing to disease pathogenesis or by serving as a source of infective organisms.

#### Patient Evaluation

1. A comprehensive periodontal evaluation should be performed as described in the Parameter on Comprehensive Periodontal Examination (pages 847-848).

2. The medical history should be evaluated for existing systemic diseases or conditions, medications, and risk factors for systemic diseases.

3. Other health care providers may be consulted as indicated by the patient's systemic health status, periodontal condition, and proposed treatment. Any consultation should be documented.

### THERAPEUTIC GOALS

The therapeutic goals are to diagnose periodontal infections which may impact on the patient's systemic health; to inform the patient of possible interactions between the patient's periodontal disease and systemic condition; and to establish periodontal health which may minimize potential negative influences of periodontal infections.

Research and clinical experience indicate that periodontal infections may have an impact on the following diseases or conditions:

1. Diabetes mellitus;
2. Pregnancy;
3. Cardiovascular diseases.

Preliminary evidence suggests that periodontal infections may also be associated with pulmonary disease and other remote site infections.

### TREATMENT CONSIDERATIONS

#### Diabetes Mellitus

Periodontitis may adversely affect glycemic control in diabetes. It may also be associated with an increased

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risk of cardiovascular complications associated with diabetes. Periodontal treatment, especially in patients with severe periodontitis and poorly controlled diabetes, may result in improvement in glycemic control. Treatment considerations for patients with diabetes mellitus include:

1. Diagnosis of the patient's periodontal condition.
2. Consideration of consultation with the patient's physician to advise of the presence of periodontal infection and proposed treatment.
3. Consideration of diagnosis and duration of diabetes; level of glycemic control; medications and treatment history; and risk factors for periodontitis which may influence diabetic complications.
4. Education of the patient regarding the possible impact of periodontal infection on glycemic control.
5. Periodontal therapy and patient motivation to establish and maintain periodontal health. Consideration may be given to the use of systemic antibiotics in conjunction with mechanical therapy (see Parameter on Periodontitis Associated With Systemic Conditions, pages 876-879).

### **Pregnancy**

Women with periodontitis may have an increased risk for pre-term low birth weight delivery. Treatment considerations for pregnant patients include:

1. Diagnosis of the patient's periodontal condition.
2. Consideration of consultation with the patient's physician to advise of the presence of periodontal infection and proposed treatment.
3. Consideration of gestational period; status of pregnancy; and risk factors for periodontitis which may influence pregnancy outcomes.
4. Education of the patient regarding the possible impact of periodontal infection on pregnancy outcome.
5. Periodontal therapy and patient motivation to establish and maintain periodontal health (see Parameter on Periodontitis Associated With Systemic Conditions, pages 876-879).

### **Cardiovascular Diseases**

**Coronary artery disease.** Individuals with periodontal disease may have significantly increased risk of coronary heart disease and related events such as angina pectoris and myocardial infarction. Periodontal pathogens may contribute to atherogenic changes and thromboembolic events in the coronary arteries. Similar processes may occur in other arteries. For example, periodontal disease may increase the risk of cerebral ischemia and non-hemorrhagic stroke.

**Infective endocarditis.** While bacteremias may occur in individuals with a healthy periodontium, they may be intensified in patients with periodontitis.

Treatment considerations for patients at risk for or with existing cardiovascular diseases include:

1. Diagnosis of the patient's periodontal condition.
2. Consideration of consultation with the patient's physician to advise of the presence of periodontal infection and proposed treatment. The American Heart Association guidelines should be followed for patients at risk for infective endocarditis.
3. Consideration of diagnosis and status of cardiovascular disease; treatment and medications; and risk factors for periodontitis which may influence coronary artery disease.
4. Education of the patient regarding the possible impact of periodontal infection on the cardiovascular system.
5. Periodontal therapy and patient motivation to establish and maintain periodontal health (see Parameter on Periodontitis Associated With Systemic Conditions, pages 876-879).

### **OUTCOMES ASSESSMENT**

The desired outcome of therapy is to prevent adverse systemic consequences of existing periodontal infection via:

1. Knowledge of the patient's medical history and systemic status, the periodontal condition, and the possible interactions between oral and systemic health or disease.
2. Reduction of clinically detectable plaque and periodontal pathogens to a level compatible with periodontal health.
3. Reduction of clinical signs of gingival inflammation.
4. Reduction of probing depths.
5. Stabilization or gain of clinical attachment.
6. Control of acute periodontal infections.
7. Addressing the risk factors for periodontal disease as they affect the systemic condition.

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