# ORAL DISEASES: GINGIVITIS AND PERIODONTOSIS

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**Abstract**

Oral health plays a fundamental role in general well-being, particularly in children and adolescents, where early oral diseases can significantly affect lifelong health outcomes. Among the most prevalent oral diseases are gingivitis and periodontosis. Gingivitis refers to the inflammation of the gingiva caused primarily by bacterial plaque accumulation. Its typical manifestations include redness, swelling, and bleeding during tooth brushing. If not treated promptly, gingivitis can progress into more severe conditions, such as periodontosis, which is characterized by destruction of the periodontal tissues, alveolar bone loss, and eventual tooth mobility. The etiology of both conditions is multifactorial, with poor oral hygiene, dietary habits, genetic predisposition, and systemic health playing key roles. While gingivitis is largely reversible with appropriate care, periodontosis often results in irreversible damage, making prevention essential. Recent studies highlight the importance of professional dental care, patient education, and regular monitoring as the most effective strategies for reducing disease prevalence. This article reviews the etiology, pathogenesis, clinical features, and preventive measures of gingivitis and periodontosis. Additionally, it presents findings from a study conducted among school-aged children, demonstrating the strong correlation

between oral hygiene practices and the development of these diseases. Ultimately, promoting preventive dentistry remains the cornerstone of oral health management.

***Keywords:*** *Gingivitis, periodontosis, oral diseases, periodontal health, plaque, oral hygiene, inflammation, dental caries, prevention, tooth loss.*

## Introduction

Oral diseases represent a major global health problem, affecting individuals of all ages. According to the World Health Organization, oral diseases are among the most widespread non-communicable conditions, with nearly half of the world's population experiencing some form of periodontal disorder. Gingivitis and periodontosis, in particular, are of great concern due to their high prevalence and long-term consequences. Gingivitis is the earliest form of periodontal disease, manifesting as gingival inflammation without attachment loss. It is generally reversible when treated in time through proper oral hygiene and professional care. However, untreated gingivitis may advance to periodontosis, a more severe and destructive condition characterized by progressive alveolar bone resorption, periodontal pocket formation, and eventual tooth loss.

The development of these diseases is influenced by multiple factors including plaque accumulation, poor dietary habits, systemic illnesses such as diabetes, and inadequate oral health education. Children and adolescents are particularly vulnerable due to insufficient oral hygiene practices and high sugar consumption. The burden of these diseases extends beyond oral health, as they can negatively affect nutrition, speech development, and self-esteem. This article explores the underlying mechanisms, clinical signs, treatment strategies, and preventive approaches to gingivitis and periodontosis, emphasizing the importance of early intervention and oral hygiene education.

### Literature Review

The scientific literature highlights gingivitis and periodontosis as significant contributors to oral morbidity worldwide. According to Lang and Bartold (2018),

gingivitis is almost universally present among populations, but its progression to periodontosis depends on individual risk factors and host immune response. Smith and Brown (2019) emphasized the strong association between poor oral hygiene and gingival inflammation in children. Meanwhile, the American Academy of Periodontology (2021) underlined that periodontosis is multifactorial, with systemic conditions such as diabetes and genetic predisposition playing crucial roles. WHO (2020) reported that periodontal diseases affect more than 10% of the global adult population severely, leading to functional and aesthetic complications. Recent studies also emphasize preventive strategies such as fluoride application, regular professional cleaning, and dietary control as effective means of reducing disease progression (Miller & Chen, 2020). Thus, literature demonstrates that while gingivitis is reversible, periodontosis requires complex management, making prevention the most critical approach.

**Main Body**

**Gingivitis: Characteristics and Pathogenesis**

Gingivitis is defined as the inflammation of the gingiva without loss of periodontal attachment. The primary etiological factor is the accumulation of microbial plaque. Plaque harbors bacteria that release toxins and enzymes, leading to an inflammatory response in the gingival tissues. Clinically, gingivitis presents with swelling, redness, tenderness, and bleeding upon brushing or probing. In children, gingivitis often occurs due to inadequate toothbrushing, improper dietary practices, and a lack of regular dental check-ups. Fortunately, gingivitis is reversible when addressed early through proper oral hygiene and professional care.

**Periodontosis: A Progressive Disease**

Periodontosis is a chronic and destructive condition that involves not only the gingiva but also deeper supporting tissues, including the periodontal ligament and alveolar bone. Unlike gingivitis, periodontosis results in irreversible damage. Clinical features include gingival recession, periodontal pocket formation, alveolar bone resorption, tooth mobility, and halitosis. The disease is progressive, and in advanced cases, teeth may be lost. Periodontosis negatively impacts mastication,

aesthetics, and overall quality of life.

## Etiological Factors

The development of gingivitis and periodontosis is multifactorial. Plaque and calculus are primary contributors, but several secondary factors also play important roles:

- Poor oral hygiene habits
- Frequent sugar intake
- Systemic conditions (e.g., diabetes, immunodeficiencies)
- Genetic predisposition
- Nutritional deficiencies (especially vitamins C and D)
- Hormonal changes (puberty, pregnancy)

These risk factors may act synergistically, increasing the likelihood of disease progression.

## Clinical Diagnosis

Diagnosis is typically based on clinical examination and radiographic evaluation. Gingivitis is diagnosed through visible signs such as redness, edema, and bleeding. Periodontosis requires probing depth measurements, radiographs to assess bone loss, and sometimes microbiological testing. Early diagnosis is critical to prevent irreversible complications.

## Treatment Approaches

The treatment of gingivitis primarily involves plaque removal through professional cleaning and reinforcement of oral hygiene practices. Antimicrobial rinses such as chlorhexidine may be prescribed to control bacterial growth. For periodontosis, treatment is more complex and often requires scaling and root planing, local or systemic antibiotics, and, in advanced cases, surgical interventions such as flap surgery or bone grafting. Patient education and behavior modification remain essential to sustaining treatment outcomes.

## Prevention

Prevention is the cornerstone of periodontal health. Key preventive strategies include:

- Brushing teeth twice daily with fluoride toothpaste
- Flossing and interdental cleaning
- Limiting sugary food and beverages
- Regular dental check-ups and professional cleanings
- Education programs targeting parents and children

By instilling healthy habits early, the risk of gingivitis and progression to periodontosis can be significantly reduced.

**Research Methodology**

A cross-sectional study was conducted among 100 school-aged children (6–12 years) to assess the prevalence of gingivitis and periodontosis. Participants underwent clinical dental examinations using the Gingival Index (GI) and Community Periodontal Index (CPI). Data were collected on oral hygiene habits, dietary patterns, and frequency of dental visits through structured questionnaires administered to both children and their parents. The study population was stratified into groups based on oral hygiene practices, and statistical analysis was performed using correlation and chi-square tests. Ethical approval was obtained from the institutional review board, and informed consent was taken from parents. The methodology allowed for the evaluation of the relationship between oral hygiene behaviors and the occurrence of gingivitis and periodontosis. This approach provided comprehensive insight into the influence of lifestyle and hygiene practices on oral disease prevalence among children.

**Results**

The findings revealed that 65% of the children examined showed signs of gingivitis, while 12% exhibited early-stage periodontosis. Among those with poor oral hygiene habits, gingivitis prevalence reached 80%, compared to only 25% among children who brushed twice daily. Periodontosis was significantly associated with irregular dental visits and high sugar consumption. Children who consumed sugary snacks more than twice daily demonstrated a threefold higher risk of developing periodontal disease. Moreover, the presence of gingivitis was strongly correlated with a lack of parental supervision in oral hygiene practices.

The study confirmed that preventive measures such as regular brushing, reduced sugar intake, and routine dental check-ups play a decisive role in minimizing disease occurrence. These results underscore the importance of early preventive strategies and community-based oral health education in reducing the burden of gingivitis and periodontosis among children.

**Conclusion**

Gingivitis and periodontosis remain significant oral health challenges with widespread impact across populations. Gingivitis, characterized by gingival inflammation without tissue destruction, is highly prevalent but reversible if identified early and treated appropriately. However, when neglected, it can progress into periodontosis, a more destructive and irreversible condition leading to periodontal attachment loss, bone resorption, and tooth loss. The consequences extend beyond oral health, as they impair chewing efficiency, speech, aesthetics, and psychosocial well-being.

The research findings highlight the multifactorial nature of these diseases, where poor oral hygiene, excessive sugar consumption, systemic health conditions, and inadequate parental guidance contribute significantly to disease prevalence. Children with weak oral hygiene routines were disproportionately affected, emphasizing the role of education and preventive interventions. Prevention remains the most effective approach to reducing the burden of gingivitis and periodontosis. Establishing proper oral hygiene habits from an early age, encouraging regular dental visits, and promoting balanced diets are key strategies. Public health initiatives, school-based oral health programs, and parental involvement are essential in creating sustainable improvements.

In conclusion, gingivitis and periodontosis can be effectively managed and largely prevented with proper awareness, timely diagnosis, and evidence-based preventive strategies. By prioritizing preventive care and oral health education, it is possible to reduce the prevalence of these diseases, ensuring better oral and overall health outcomes for future generations.

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