



## MODERN APPROACHES TO THE PREVENTION AND TREATMENT OF DENTAL DISEASES

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### **Abstract**

Dental diseases remain one of the most common health problems worldwide and significantly affect the quality of human life. Oral diseases not only cause pain and discomfort but may also lead to systemic complications if left untreated. The most widespread dental disorders include dental caries, periodontal diseases, oral mucosal infections, and malocclusion. Modern dentistry focuses on early diagnosis, preventive care, and minimally invasive treatment methods. This article discusses the major types of dental diseases, their causes, clinical manifestations, preventive strategies, and current treatment approaches.

### **Introduction**

Oral health is an essential component of general health and well-being. The condition of the oral cavity reflects the overall physiological status of the body. Poor oral hygiene, unhealthy dietary habits, tobacco use, and microbial infections contribute significantly to the development of dental diseases. According to international health organizations, billions of people suffer from untreated oral disorders every year.

Dental diseases can affect individuals of all ages, from children to the elderly. The advancement of modern dental technologies has improved diagnostic accuracy and treatment outcomes. However, prevention remains the most effective strategy in reducing the prevalence of oral diseases.

### **Main Types of Dental Diseases**



## **Dental Caries**

Dental caries is a chronic infectious disease characterized by the destruction of tooth enamel and dentin. It develops due to the interaction between oral bacteria, dietary sugars, and insufficient oral hygiene. *Streptococcus mutans* is considered one of the primary microorganisms responsible for caries formation.

Common symptoms include tooth sensitivity, pain during eating, discoloration of teeth, and cavity formation. Untreated caries may progress to pulpitis or tooth loss.

Preventive measures include:

- Regular tooth brushing with fluoride toothpaste
- Reduction of sugary food consumption
- Professional dental cleaning
- Application of dental sealants and fluoride therapy

## **Periodontal Diseases**

Periodontal diseases affect the supporting structures of the teeth, including the gums and alveolar bone. Gingivitis and periodontitis are the most common forms.

Gingivitis is characterized by gum redness, swelling, and bleeding, while periodontitis leads to destruction of periodontal tissues and tooth mobility. Smoking, diabetes mellitus, poor oral hygiene, and genetic predisposition increase the risk of periodontal diseases.

Treatment methods involve:

- Professional scaling and root planing
- Antibacterial therapy
- Surgical periodontal procedures
- Maintenance of proper oral hygiene

## **Oral Mucosal Diseases**



The oral mucosa may be affected by bacterial, viral, fungal, or autoimmune conditions. Common diseases include stomatitis, candidiasis, and herpes simplex infections.

Patients may experience pain, burning sensation, ulcers, and difficulty eating. Early diagnosis is important because some oral lesions may indicate systemic diseases or precancerous conditions.

Treatment depends on the etiology and may include antifungal agents, antiviral medications, antiseptic mouth rinses, and immune-supportive therapy.

### **Malocclusion**

Malocclusion refers to abnormal alignment of teeth and jaws. It may result from hereditary factors, harmful childhood habits, or developmental abnormalities.

Malocclusion can lead to chewing difficulties, speech disorders, and aesthetic concerns. Orthodontic treatment with braces or aligners is commonly used to correct dental alignment.

### **Modern Diagnostic Methods**

Technological progress has greatly improved dental diagnostics. Digital radiography, cone-beam computed tomography (CBCT), laser fluorescence devices, and intraoral scanners provide accurate visualization of oral structures.

These technologies allow dentists to identify pathological changes at early stages and develop individualized treatment plans.

### **Prevention of Dental Diseases**

Preventive dentistry plays a key role in maintaining oral health. Effective prevention includes:

- Daily oral hygiene practices
- Balanced nutrition rich in vitamins and minerals
- Regular dental examinations
- Limitation of tobacco and alcohol consumption
- Public health education programs



Children should receive special preventive attention because early oral care habits strongly influence future dental health.

### **Conclusion**

Dental diseases remain a major public health challenge despite advancements in modern dentistry. Early diagnosis, preventive measures, and timely treatment are essential for maintaining oral health and preventing complications. Public awareness and access to professional dental care can significantly reduce the burden of oral diseases in society. Continuous research and innovation in dentistry contribute to more effective and patient-friendly treatment methods.

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