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PREVENTION OF COMMON DENTAL DISEASES IN ADULTS: AN EVIDENCE-BASED APPROACH

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Abstract. Oral diseases remain among the most prevalent chronic conditions affecting adults worldwide. Dental caries, periodontal disease, tooth loss, and oral cancer significantly impact quality of life and systemic health. This study aims to analyze preventive strategies for common dental diseases in adults and evaluate evidence-based approaches to reduce their prevalence. A narrative review of international literature, WHO recommendations, and epidemiological data was conducted. Preventive strategies were categorized into primary, secondary, and tertiary prevention. Effective prevention in adults requires integrated approaches including fluoride therapy, professional oral hygiene, dietary modification, smoking cessation, early screening, and patient-centered education. Preventive programs significantly reduce caries incidence (20–40%) and periodontal progression (30–50%). Adult oral health prevention should focus on risk-based, individualized strategies combined with public health policies to reduce disease burden and improve systemic health outcomes.

Introduction: Oral health is an essential component of general health and well-being. According to the World Health Organization, oral diseases affect nearly 3.5 billion people worldwide, with untreated dental caries and periodontal disease being the most prevalent conditions in adults. In adults, oral diseases are influenced by behavioral, socioeconomic, and systemic factors such as diabetes, cardiovascular diseases, tobacco use, and aging. Poor oral health negatively affects mastication, speech, social interaction, and overall quality of life. Moreover, growing evidence links periodontal inflammation with systemic disorders. Preventive dentistry has shifted from a purely restorative model to a risk-based and minimally invasive approach. Therefore, understanding modern preventive strategies for adult dental diseases is crucial for improving long-term oral health outcomes. The aim of this article is to analyze major dental diseases affecting adults and evaluate evidence-based preventive strategies.

Methods. A literature-based analytical review was performed using international clinical guidelines and epidemiological studies published between 2015 and 2024. Data sources included WHO oral health reports, peer-reviewed journals, and public health recommendations.

Preventive strategies were classified into:

1. Primary prevention – prevention before disease onset
2. Secondary prevention – early detection and intervention
3. Tertiary prevention – prevention of complications and recurrence

Data were analyzed descriptively and comparatively.

Results

1. Dental Caries in Adults

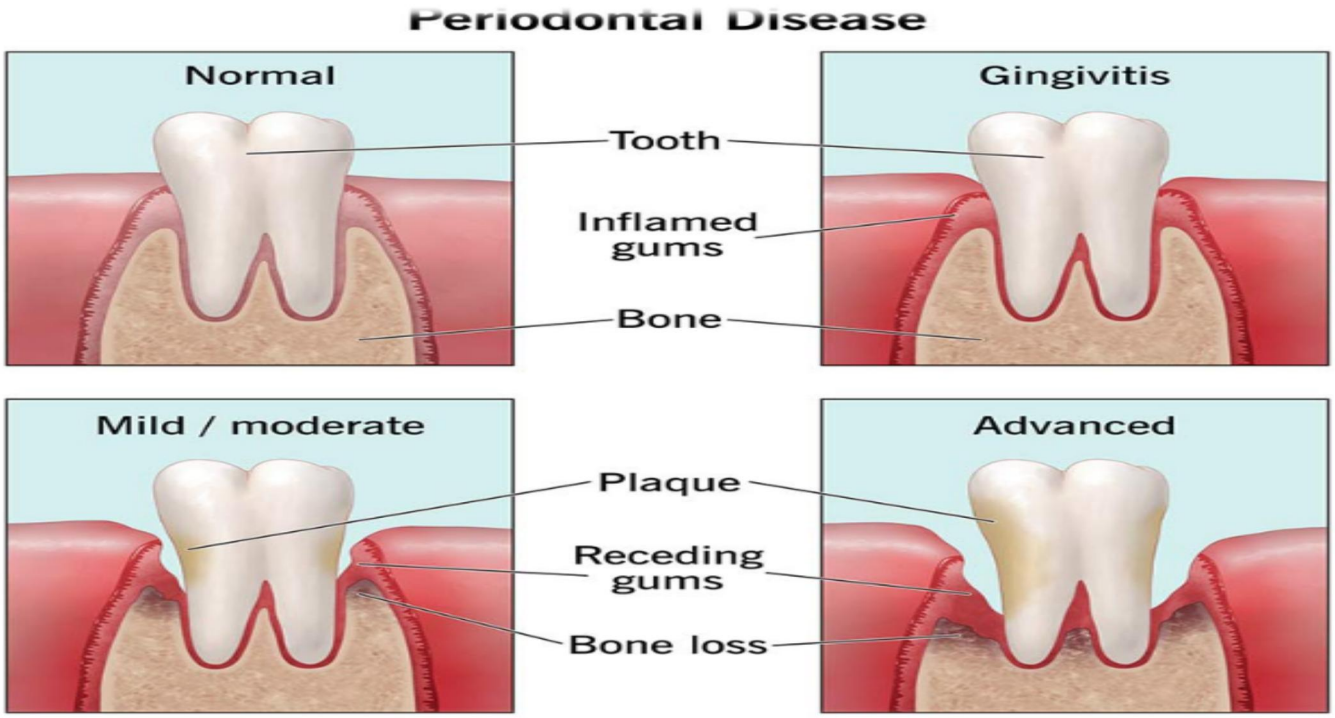
1. Dental Caries in Adults. Dental caries remains highly prevalent in adults, particularly root caries in elderly populations. Risk factors include poor oral hygiene, high sugar intake, xerostomia, and inadequate fluoride exposure.

Preventive Measures:

- Twice-daily brushing with fluoridated toothpaste (1000–1450 ppm)
- Professional fluoride varnish applications
- Reduction of fermentable carbohydrate intake
- Use of antimicrobial mouth rinses (chlorhexidine in high-risk patients)
- Regular dental check-ups (every 6–12 months)

Studies indicate that fluoride-based prevention reduces caries incidence by 24–40% in adults.

2. Periodontal Disease



Periodontal diseases affect up to 50% of adults globally. Chronic inflammation of supporting tooth structures may lead to tooth mobility and loss.

Major Risk Factors:

- Tobacco use
- Poor plaque control
- Diabetes mellitus
- Stress
- Genetic predisposition

Preventive Strategies:

- Professional scaling and root planing
- Smoking cessation programs
- Glycemic control in diabetic patients
- Daily interdental cleaning (floss/interdental brushes)
- Periodontal maintenance visits every 3–6 months

Preventive periodontal programs reduce disease progression by approximately 30–50%.

4. Tooth Loss and Prosthetic Complications

Tooth loss in adults is often the consequence of untreated caries or periodontitis. It affects chewing efficiency and nutritional status.

Prevention:

- Early restorative treatment
- Maintenance of implants and prostheses
- Patient education on prosthetic hygiene
- Regular radiographic monitoring

Proper maintenance reduces peri-implantitis risk significantly.

4. Oral Cancer Prevention

Oral cancer incidence increases after age 40. Major risk factors include tobacco use, alcohol consumption, and HPV infection.

Preventive Measures:

- Tobacco and alcohol cessation
- HPV awareness and vaccination
- Routine oral mucosal screening during dental visits
- Early biopsy of suspicious lesions

Early detection significantly improves 5-year survival rates.

Discussion. Adult oral disease prevention requires a multifactorial approach integrating clinical, behavioral, and public health interventions. The shift toward preventive dentistry aligns with WHO's global oral health strategy emphasizing minimal intervention and risk-based care. Individualized prevention plans should consider age, systemic conditions, lifestyle habits, and

socioeconomic status. Preventive strategies are cost-effective compared to restorative or surgical treatments.

Furthermore, interdisciplinary collaboration between dentists, physicians, and public health specialists is essential, particularly in managing patients with systemic diseases such as diabetes and cardiovascular conditions.

Conclusion. Prevention of dental diseases in adults requires comprehensive, evidence-based strategies focusing on risk assessment, early detection, and long-term maintenance.

Primary prevention through oral hygiene and fluoride use remains fundamental. Secondary and tertiary preventive measures reduce complications and improve quality of life. Public health initiatives and patient education are key components in reducing the global burden of adult oral diseases. Future research should emphasize personalized preventive protocols and integration of digital monitoring systems in adult dentistry.

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