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Oral health

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Key facts

- Oral diseases, while largely preventable, pose a major health burden for many countries and affect people throughout their lifetime, causing pain, discomfort, disfigurement and even death.
 - It is estimated that oral diseases affect nearly 3.5 billion people.
 - Untreated dental caries (tooth decay) in permanent teeth is the most common health condition according to the Global Burden of Disease 2019.
 - Treatment for oral health conditions is expensive and usually not part of universal health coverage (UHC).
 - Most low- and middle-income countries are unable to provide services to prevent and treat oral health conditions.
 - Oral diseases are caused by a range of modifiable risk factors, including sugar consumption, tobacco use, alcohol use and poor hygiene, and their underlying social and commercial determinants.
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Oral health conditions

Most oral health conditions are largely preventable and can be treated in their early stages. The majority of cases are dental caries (tooth decay), periodontal diseases, oral cancers, oro-dental trauma, cleft lip and palate, and noma (severe gangrenous disease starting in the mouth mostly affecting children).

The *Global Burden of Disease Study 2019* estimated that oral diseases affect close to 3.5 billion people worldwide, with caries of permanent teeth being the most common condition¹. Globally, it is estimated that 2 billion people suffer from caries of permanent teeth¹ and 520 million children suffer from caries of primary teeth¹.

In most low- and middle-income countries, the prevalence of oral diseases continues to increase with growing urbanization and changes in living conditions. This is primarily due to inadequate exposure to fluoride (in the water supply and oral hygiene products such as toothpaste), availability and affordability of food with high sugar content and poor access to oral health care services in the community. Marketing of food and beverages high in sugar, as well as tobacco and alcohol, have led to a growing consumption of products that contribute to oral health conditions and other noncommunicable diseases.

Dental caries (tooth decay)

Dental caries result when plaque forms on the surface of a tooth and converts the free sugars (all sugars added to foods by the manufacturer, cook, or consumer, plus sugars naturally present in honey, syrups, and fruit juices) contained in foods and drinks into acids that destroy the tooth over time. A continued high intake of free sugars, inadequate exposure to

fluoride and a lack of removal of plaque by toothbrushing can lead to caries, pain and sometimes tooth loss and infection.

Periodontal (gum) disease

Periodontal disease affects the tissues that both surround and support the tooth. The disease is characterized by bleeding or swollen gums (gingivitis), pain and sometimes bad breath. In its more severe form, the gum can come away from the tooth and supporting bone, causing teeth to become loose and sometimes fall out. Severe periodontal diseases are estimated to affect around 14% of the global adult population, representing more than one billion cases worldwide¹. The main causes of periodontal disease are poor oral hygiene and tobacco use.

Oral cancer

Oral cancer includes cancers of the lip, other parts of the mouth and the oropharynx. The global incidence of cancers of the lip and oral cavity is estimated at 4 cases per 100 000 people. However, there is wide variation across the globe, from 0 to around 22 cases per 100 000 people². Oral cancer is more common in men and in older people, and it varies strongly by socio-economic condition.

Tobacco, alcohol and areca nut (betel quid) use are among the leading causes of oral cancer³. In North America and Europe, human papillomavirus infections are responsible for a growing percentage of oral cancers among young people⁴.

Oro-dental trauma

Oro-dental trauma results from injury to the teeth, mouth and oral cavity. Around 20% of people suffer from trauma to teeth at some point in their life⁵. Oro-dental trauma can be caused by oral factors such as lack of alignment of teeth and environmental factors (such as unsafe playgrounds, risk-taking behaviour, road accidents and violence). Treatment is costly and lengthy and sometimes can even lead to tooth loss, resulting in complications for facial and psychological development and quality of life.

Noma

Noma is a severe gangrenous disease of the mouth and the face. It mostly affects children aged 2–6 years suffering from malnutrition, affected by infectious disease, living in extreme poverty with poor oral hygiene or with weakened immune systems.

Noma is mostly found in sub-Saharan Africa, although cases have also been reported in Latin America and Asia⁶. Noma starts as a soft tissue lesion (a sore) of the gums, inside the mouth. The initial gum lesion then develops into an acute necrotizing gingivitis that progresses rapidly, destroying the soft tissues and further progressing to involve the hard tissues and skin of the face.

According to latest estimates (from 1998) there are 140 000 new cases of noma annually. Without treatment, noma is fatal in 90% of cases⁷. Survivors suffer from severe facial disfigurement, have difficulty speaking and eating, endure social stigma, and require complex surgery and rehabilitation. Where noma is detected at an early stage, its progression can be rapidly halted through basic hygiene, antibiotics and improved nutrition.

Cleft lip and palate

Orofacial clefts, the most common craniofacial birth defects, have a global prevalence of between 1 in 1000-1500 births with wide variation in different studies and populations^{8,9}. Genetic predisposition is a major cause. However, poor maternal nutrition, tobacco consumption, alcohol and obesity during pregnancy also play a role¹⁰. In low-income settings, there is a high mortality rate in the neonatal period. If lip and palate clefts are properly treated by surgery, complete rehabilitation is possible.

Noncommunicable diseases and common risk factors

Most oral diseases and conditions share modifiable risk factors such as tobacco use, alcohol consumption and an unhealthy diet high in free sugars that are common to the 4 leading noncommunicable diseases (cardiovascular disease, cancer, chronic respiratory disease and diabetes).

In addition, diabetes has been linked in a reciprocal way with the development and progression of periodontal disease¹¹. There is also a causal link between the high consumption of sugar and diabetes, obesity and dental caries.

Oral health inequalities

Oral diseases disproportionately affect the poor and socially disadvantaged members of society. There is a very strong and consistent association between socioeconomic status (income, occupation and educational level) and the prevalence and severity of oral diseases¹². This association exists from early childhood to older age and across populations in high-, middle- and low-income countries.

Prevention

The burden of oral diseases and other noncommunicable diseases can be reduced through public health interventions by addressing common risk factors.

These include:

- **promoting a well-balanced diet low in free sugars and high in fruit and vegetables, and favouring water as the main drink;**
- **stopping use of all forms of tobacco, including chewing of areca nuts;**
- **reducing alcohol consumption; and**
- **encouraging use of protective equipment when doing sports and travelling on bicycles and motorcycles (to reduce the risk of facial injuries).**

Adequate exposure to fluoride is an essential factor in the prevention of dental caries.

An optimal level of fluoride can be obtained from different sources such as fluoridated drinking water, salt, milk and toothpaste. Twice-daily tooth brushing with fluoride-containing toothpaste (1000 to 1500 ppm) should be encouraged¹³.

Access to oral health services

Unequal distribution of oral health professionals and a lack of appropriate health facilities to meet population needs in most countries means that access to primary oral health services is often low. Out-of-pocket costs for oral health care can be major barriers to accessing care. Paying for necessary oral health care is among the leading reasons for catastrophic health expenditures, resulting in an increased risk of impoverishment and economic hardship^{14,15}.

WHO response

The World Health Assembly approved a Resolution on oral health in 2021 at the 74th World Health Assembly. The Resolution recommends a shift from the traditional curative approach towards a preventive approach that includes promotion of oral health within the family, schools and workplaces, and includes timely, comprehensive and inclusive care within the primary health-care system. The Resolution affirms that oral health should be firmly embedded within the noncommunicable disease agenda and that oral health-care interventions should be included in universal health coverage programs.

The World Health Assembly delegates asked WHO: to develop a draft global strategy on tackling oral diseases for consideration by WHO governing bodies in 2022; and by 2023: to translate the global strategy into an action plan for oral health; to develop “best buy” interventions on oral health; and to explore the inclusion of noma within the roadmap for neglected tropical diseases 2021-2030. WHO was asked to report back on progress and results until 2031 as part of the consolidated report on noncommunicable diseases.

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