

RISKS AND DISEASES

Tobacco use is the single most preventable cause of disease and death. Among the WHO regions, Europe has the highest prevalence of daily tobacco smoking among adults (country range 10–38%) and some of the highest prevalence rates of tobacco use by adolescents (1).

Oral diseases are most frequently found in Europe and they share risk factors with other key noncommunicable diseases. Tobacco is a primary risk factor for oral cancer and pre-cancer (leukoplakia and oral epithelial dysplasia) (2,3). Oral cancer is commonly located on the tongue and lips. Fig. 1 shows cancer of the tongue; Fig. 2 presents lesions inside the mouth and Fig. 3 illustrates oral pre-cancer (leukoplakia).

Excessive use of alcohol is another important risk factor. Distinguishing between the separate effects of these risk factors is difficult since drinkers of alcohol tend to be users of tobacco, and vice versa (2).

Studies document a synergistic effect of tobacco and excessive use of alcohol on the manifestation of oral cancer. The population-attributable risks of smoking and alcohol use is estimated at 80% for men, 61% for women and 74% overall (4). Poor nutrition combined with heavy intake of alcohol also contributes to oral cancer.

FACTSHEET

Tobacco and oral health

KEY FACTS

Tobacco use is a leading risk factor for chronic diseases such as cancer, lung diseases and cardiovascular diseases.

Tobacco kills up to half of its users because tobacco products are made of extremely toxic materials.

Tobacco use reduces quality of life and increases the risk of premature death.

Tobacco is a primary cause of cancer in the mouth (oral cancer).

Tobacco use is a major cause of periodontal disease and premature loss of teeth.

Tobacco-related diseases of the mouth may be detected at an early stage by a dentist.



Fig. 1. Cancer of the tongue



Fig. 2. Cancer inside the mouth



Fig. 3. Oral pre-cancer of the tongue



Fig. 4. Tobacco-induced periodontal disease



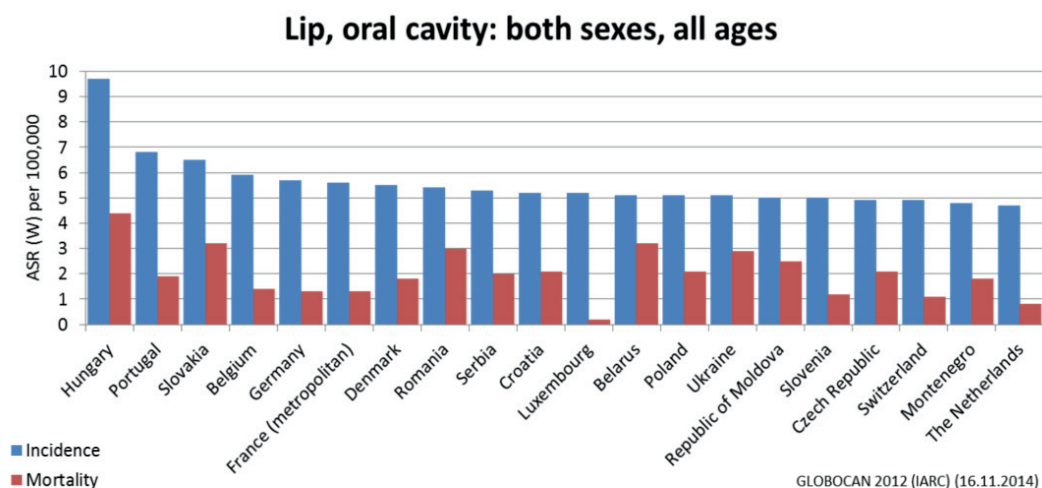
Tobacco is a major cause of periodontal disease and premature tooth loss; tobacco use may result in periodontal degeneration, loosening of teeth and ulceration (Fig. 4). Brown or black discolouration of teeth, melanin pigmentation of the gums, change in taste and bad breath (malodour) are other tobacco-related conditions. Malodour negatively influences social interactions and relationships.

Children born to women who used tobacco during pregnancy may have congenital defects such as cleft lip and palate.

THE BURDEN OF ORAL DISEASE IN EUROPE

Oral cancer is a significant component of the burden of noncommunicable diseases in Europe. Incidence and mortality rates of oral cancer vary by country (Fig. 5) (3,5). Differences in rates between countries relate particularly to distinct risk profiles, and availability and accessibility of health services. The occurrence of oral cancer is particularly high among men and deprived population groups (6).

Fig. 5. Age-standardized rates (ASR (W)) of oral cancer incidence and mortality for both sexes in selected European countries, 2012.



Severe periodontal disease, which may result in tooth loss, is found in 10–15% of adult populations in Europe (7). The burden of disease is high among poor and disadvantaged people. In addition, high numbers of missing teeth are strongly associated with years of smoking (2, 7). Extensive loss of natural teeth reduces quality of life.

SECOND-HAND SMOKE

Second-hand tobacco exposure puts members of a smoker's household at an increased risk for diseases (2). Diseases in children may include acute respiratory illness, middle ear diseases and early childhood caries. Diseases and conditions in adults may include coronary heart disease, nasal symptoms and lung cancer, and second-hand smoke may have reproductive consequences in women.

SMOKELESS TOBACCO

Smokeless tobacco is an addiction for a significant proportion of people in Europe (1); its use by young people is increasing in many European countries. Several types of smokeless tobacco are marketed for oral or nasal use. All contain nicotine and nitrosamines. Epidemiological studies provide sound evidence that smokeless tobacco causes oral cancer and pre-cancer (e.g. leukoplakia) and gum disease in humans because of the toxic ingredients (8).

RISK ESTIMATES

A recent WHO review (9) published several findings.

1. Tobacco use, including tobacco smoking and smokeless tobacco use, increases the risk for oral cancer and leukoplakia by five to six times.
2. Tobacco smoking increases the risk for periodontal disease by two times.
3. Exposure to second-hand smoke has a one-and-a-half to two-fold higher risk of causing dental caries for both deciduous and permanent teeth.
4. Tobacco smoking increases the risk of tooth loss by one-and-a-half times.
5. Tobacco cessation is significantly associated with better oral health outcomes, as measured by the number of lost teeth, periodontal health and the risk of new lesions and malignancies.

WHAT CAN PEOPLE DO TO PREVENT ORAL CANCER AND PERIODONTAL DISEASE?

Some warning signs of oral cancer are:

- any sores in the mouth or on the face or neck that do not heal within two weeks (Fig. 1)
- swellings, lumps or bumps on the lips, gums or other areas inside the mouth (Fig. 2)
- white, red or dark patches in the mouth (oral pre-cancer, Fig. 3)
- repeated bleeding in the mouth
- numbness, loss of feeling or pain in any area of the mouth, face or neck.

Periodontal disease is characterized by:

- bleeding gums
- tobacco-coloured teeth, gum recession and food impaction (Fig. 4)
- tooth mobility.

People can take action to improve their oral health:

- quit the use of tobacco (10);
- ask the dentist to screen for signs of oral cancer and periodontal disease at least once a year; and
- ensure proper oral hygiene.

If oral cancer and periodontal disease are detected at an early stage, the treatment is much easier and the long-term prognosis is much better.

WHAT CAN THE ORAL HEALTH PROFESSIONAL DO TO PREVENT ORAL CANCER AND PERIODONTITIS?

Oral health professionals play a special role in tobacco prevention (11). Advantages of involving dentists in tobacco prevention and cessation are that they:

- typically have access to children and young adults, and the opportunity to advise them on the health effects of tobacco and prevention at an early stage;
- often have more time with patients than many other clinicians, so they can integrate education and intervention methods into their routine practice in primary care;
- often treat women of childbearing age and can inform them about the potential harm (congenital defects such as cleft lip and palate) to children whose mothers use tobacco during pregnancy;
- may help patients to quit using tobacco; and
- can build patient interest in tobacco cessation by showing the actual effects of tobacco in the mouth.

TOBACCO CESSATION AND ORAL HEALTH PROFESSIONALS

Dentists:

- are knowledgeable about tobacco cessation;
- encourage patients to stop using tobacco as most feel it is their responsibility to do so;
- play a professional role in early detection of oral cancer, pre-cancer, severe periodontal disease and other tobacco-induced conditions;
- can inform patients about the benefits of tobacco cessation; and
- form an integral part of a national cancer prevention programme.

PUBLIC HEALTH ACTIONS FOR PREVENTION OF TOBACCO-RELATED ORAL DISEASE

Initiatives to prevent tobacco-related oral diseases must be part of public health actions.

The WHO Framework Convention on Tobacco Control (WHO FCTC) is an international treaty guiding national tobacco laws. It is a set of evidence-based legislative measures for tobacco control which, for example, limits exposure to tobacco in public places and advertisements.

The 6 MPOWER measures are important components of tobacco intervention.

- Monitor tobacco use and prevention policies.
- Protect people from tobacco smoke.
- Offer help to quit tobacco use.
- Warn about the dangers of tobacco.
- Enforce bans on tobacco advertising, promotion and sponsorship.
- Raise taxes on tobacco.

Including information on tobacco-related oral diseases in mass media campaigns may influence people to quit tobacco use.

Using graphic pictures of these diseases on pack warnings may increase awareness of the dangers of tobacco use.

RELATED LINKS

1. Taking stock. Tobacco control in the WHO European Region. Copenhagen: WHO Regional Office for Europe, 2017 (<http://www.euro.who.int/en/health-topics/disease-prevention/tobacco/publications/2017/taking-stock-tobacco-control-in-the-who-european-region-in-20172017>, accessed 24 November 2017).
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4. Blot WJ, McLaughlin JK, Winn DM, Austin DF, Greenberg RS, Preston-Martin S et al. Smoking and drinking in relation to oral and pharyngeal cancer. *Cancer Research* 1988;48:3282–7.
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7. Petersen PE, Ogawa H. The global burden of periodontal disease: towards integration with chronic disease prevention and control. *Periodontol* 2000, 2012;60:15–39.
8. Cogliano V, Straif K, Baan R, Grosse Y, Secretan B, Ghissassi FE. Smokeless tobacco and tobacco-related nitrosamines. *Lancet Oncol.* 2004;5:708.
9. WHO monograph on tobacco cessation and oral health integration. Geneva: World Health Organization, 2017 (http://www.who.int/tobacco/publications/smoking_cessation/monograph-tb-cessation-oral-health/en/, accessed 24 November 2017).
10. A guide for oral disease patients to quit tobacco use. Geneva: World Health Organization, 2017 (http://www.who.int/tobacco/publications/smoking_cessation/guide-oral-disease-patients-quit-tobacco-use/en/, accessed 24 November 2017).
11. Toolkit for oral health professionals to deliver brief tobacco interventions. Geneva: World Health Organization, 2017 (http://www.who.int/tobacco/publications/smoking_cessation/toolkit-oral-health-professionals/en/, accessed 24 November 2017).

For further information, visit <http://www.euro.who.int/en/health-topics/disease-prevention/oral-health>.

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