



ASH Scotland Tobacco and oral health

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Key points:

- tobacco use has a considerable impact on oral health tobacco
- smoking is a main risk factor for oral cancer
- tobacco is thought to be responsible for 50-90% of oral cancer cases world wide¹
- dental health professionals are well placed to offer stop smoking advice.

The effect of tobacco use on oral health

Smoking and tobacco use can affect oral health in a number of ways ranging from conditions which are purely aesthetic to those which are potentially fatal.

• Periodontal disease

Numerous studies show that smoking increases both the prevalence and severity of periodontal disease (gum disease)². After bacterial plaque smoking is the second strongest modifiable risk factor for periodontal disease³. Furthermore researchers have found that smoking adversely affects the outcome of both surgical and non-surgical forms of periodontal treatment^{2,4}.

Periodontitis is a serious form of gum disease which can ultimately lead to the loss of both periodontal bone and tooth loss. Smoking has been established as a cause of periodontitis and it is likely this is due to the effect smoking has on the immune system which can make smokers more susceptible to bacterial infections. The risk of periodontitis appears to decrease after a person stops smoking⁵.

• Oral cancers and pre cancers

Cancer Research UK describes oral cancer as being made up of cancers of the lip, tongue, mouth, oropharynx, piriform sinus, hypopharynx and other and ill defined sites⁶.

In 2006 649 people in Scotland were diagnosed with oral cancer, a cancer which is more common in men than women.⁶ However in both men and women the incidence of oral cancer is significantly higher in Scotland than in other parts of the UK⁷. Oral cancer has a high mortality rate⁸ and in 2007 249 Scots died from it⁹.

Smoking is an established cause of cancers of the oral cavity and pharynx⁵. Smoking 20 or more cigarettes a day increases a smoker's risk of oral cancer to 6 times that of a non-smoker¹⁰. Furthermore research shows that smoking and excessive alcohol consumption act together to increase the risk of developing oral cancer¹¹.

Leukoplakia is a potentially malignant lesion found in the mouth and is six-times more common in smokers than non-smokers. Stopping tobacco use can lead to the regression and disappearance of leukoplakia².

Rather worryingly research has found that awareness of the early signs of mouth cancer is low amongst the British population. Smokers were found to be less likely to recognise the early signs and were also less likely than non-smokers to be aware that smoking is a risk factor for mouth cancer⁸.

Cancer statistics for Scotland demonstrate that cancers most associated with smoking tend to be strongly correlated with deprivation and have the highest incidence and mortality rates in the most deprived areas, these include cancers of the trachea, bronchus and lung, oral cavity and larynx¹².

Giving up smoking can help reduce the risk of developing oral cancer. Research shows that the risk of oral cancer is lower in former smokers than in those who continue to smoke¹³ and within 5-10 years of stopping smoking the increased risk of developing oral cancer is eliminated².

- **Oral mucosal diseases**

Tobacco use is associated with changes in the oral mucous membranes. Smoker's palate, smoker's melanosis and oral candidosis are all more common in smokers than non-smokers⁴.

Smoker's palate is a condition which mainly affects heavy smokers and pipe smokers. The hard palate turns white and red dots can appear in small elevated nodules. It is asymptomatic and is not a pre-malignant condition which disappears after smoking cessation².

Smoker's melanosis refers to a melanin pigmentation of the oral mucous membranes and is another non-malignant and reversible condition although it can be a year or more after stopping tobacco use before the colour returns to normal².

- **Dental implant failure**

Research has shown that tobacco use is associated with higher rates of dental implant failure both initially and in the longer-term. Stopping smoking can be beneficial to improving the success rates of dental implants¹¹.

- **Poor wound healing**

Tobacco also influences wound healing in the mouth for example after tooth extraction or periodontal surgery². Tobacco is a peripheral vasoconstrictor affecting the rate at which wounds heal within the mouth resulting in healing among smokers being slower⁴.

- **Tooth staining**

One of the aesthetic effects of smoking on oral health is the staining and discolouration of teeth, dentures and dental restorations. Tobacco stains can penetrate into enamel leading to a brown to yellow darkening of teeth⁴. Smoking has been found to contribute more to teeth discolouration than tea or coffee consumption¹¹.

- **Smell and taste**

Smoking is a common cause of halitosis (bad breath) and is also known to impair a smoker's ability to taste and smell².

Chewing tobacco

Chewed tobacco products are also associated with an increased risk of mouth and throat cancers among users¹⁴. People in the Indian, Pakistani and Bangladeshi communities are the most likely to use chewed tobacco products and the tobacco is usually mixed with betel nut which is itself a mood-altering stimulant, possibly carcinogenic and potentially dependence forming¹⁵. The UK is the number one importing country for paan outside of Asia, with imports having doubled since the early 80's¹⁶. In some parts of the Asian community young children start using sweetened betel nut products but begin to add tobacco later in their adolescence¹⁷.

There is a lack of knowledge and understanding about the health risks of chewing tobacco in South Asian communities¹⁸ but the links between smoking and lung cancer are recognised. Producing culturally sensitive information in minority ethnic languages would help to raise awareness of the additional links between tobacco use and heart disease, oral cancers and respiratory disease.

Role of dental professionals

Dentists and other dental health professionals are well positioned to offer stop smoking advice. Nearly 60% of the UK's adult population visits a dentist for regular checkups¹⁹ and dentists probably have the highest access to well smokers in the healthcare system². A recent Cochrane review concluded that advice given in the dental setting is effective in helping patients who use smokeless tobacco stop¹⁹.

The 2007 update to the Scottish smoking cessation guidelines recommends that dentists and all other health professionals should refer people who smoke to an intensive support service such as NHS Stop Smoking Services. If patients are unwilling or unable to be referred practitioners with suitable training should offer a pharmacotherapy prescription and additional support. Those who are trained NHS stop smoking advisors can refer to themselves. The guidelines also encourage all relevant health professionals to access training in brief intervention²⁰.

Related information

ASH Scotland. *Tobacco use and minority ethnic groups*. Available from: <http://www.ashscotland.org.uk/ash/3483.1049.html>

ASH Scotland. *Types of tobacco use in some minority ethnic groups*. Available from: <http://www.ashscotland.org.uk/ash/3483.1049.html>

MEHIP. *Oral health & trans-cultural tobacco: a guide for health professionals & trans-cultural tobacco users* [DVD]. Edinburgh: MEHIP, 2009.

Useful organisations

British Dental Association: <http://www.bda.org/>

British Dental Health Foundation: <http://www.dentalhealth.org.uk/>

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- ⁴ Beaglehole, R.H. Basic facts about tobacco and oral health. In: FDI World Dental Foundation and World Health Organization. *Tobacco or oral health: an advocacy guide for oral health professionals* [online] 2005. Available from: http://www.who.int/oral_health/publications/fdi_aug05/en/index.html [accessed 27 October 2009]
- ⁵ US Surgeon General. *The health consequence of smoking: a report of the Surgeon General* [online]. 2004. Dept. of Health and Human Services: Atlanta. Available from: http://www.cdc.gov/tobacco/data_statistics/sgr/2004/complete_report/index.htm [accessed 27 October 2009]
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- ¹² ISD Scotland. *Cancer mortality* [online] October 2009. Available from: <http://www.isdscotland.org/isd/6044.html> [accessed 27 October 2009]
- ¹³ International Agency for Research on Cancer. *World cancer report 2008* [online] p.263, 2008. Available from: http://www.iarc.fr/en/publications/pdfs-online/wcr/2008/wcr_2008.pdf [accessed 2 November 2009]
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