

SPREAD THE WORD

about mouth cancer



Richard Horner, Chairman of the Steering Group for the Mouth Cancer Action Month Campaign, discusses the risks and reality of mouth cancer and how dental professionals can help.

What is mouth cancer?

Cancer can occur in any part of the mouth, tongue, lips, salivary glands, pharynx, larynx, paranasal sinuses and other sites located in the head and neck area. The International Classification of Disease defines the following sites (ICD10: C00 - 06) as (oral) mouth cancer: lips, tongue, gum, floor of the mouth, palate and other unspecified parts of the mouth. Salivary glands (C07-08) and tonsil and oropharynx (C09-10) lie outside the definition of mouth cancer.

Mouth cancer is a serious and growing problem. In fact, mouth cancer is the sixth most common cancer in the world and may even be the leading type of cancer in certain high incidence countries.

In the UK in 2007, from the latest data available there were over 5,410 reported cases of mouth cancer.¹ In the UK as a whole, the incidence of mouth cancer has increased by 36.3% in the past ten years and there is a marked geographic variation in its incidence within regions of the UK. Scotland has the

Table 1 Major risk factors for oral cancer

Not modifiable	Modifiable
<ul style="list-style-type: none"> • Age • Ethnicity • Socio-economic status 	<ul style="list-style-type: none"> • Smoking • Excess alcohol consumption • Diet • Lifestyle/betel quid • HPV infection
Inconsistent/limited/or no evidence for causing mouth cancer	
<ul style="list-style-type: none"> • Hereditary and familial risk • Cannabis use • Khat (Qat) chewing • Nicotine replacement therapy (chewing/lozenges) • HIV infection • Passive smoking • Alcohol in mouthwashes 	

highest rates. Mouth cancer kills one person in the UK every five hours: a higher proportion of deaths per number of recorded cases than breast cancer, cervical cancer or skin melanoma.

As only half of mouth cancer patients currently survive for five or more years, it is vitally important that dentists, hygienists and therapists understand and can recognise the known risk factors so they can properly address lifestyle counselling and make use of the opportunity for screening examinations in general dental practice.

In Table 1 we see the major risk factors listed as modifiable and non-modifiable factors plus those others which have often been suggested in the mass media but for which there is inconsistent, limited or no scientific evidence linking them with risk.

Established risks

Tobacco

There is no safe form of tobacco use: cigarettes, pipes and cigars and smokeless tobacco such as chewing tobacco and moist snuff all contain carcinogens. Overall, nearly one third of all incident cancers in humans are attributable to smoking. Given that tobacco contains at least 60 known carcinogenic chemicals (69 by the year 2000, IARC 2004²) perhaps this fact is not surprising. And it is not just lung cancers – around a third of smoking-related cancers are among other target organs, including the mouth. In South Asia, where chewing tobacco is consumed with areca nut and in regions of India particularly where reverse smoking is practised (this involves placing the lit end in the mouth), there is a strikingly high incidence of mouth cancer. In Southern Asia, mouth cancer accounts for as many as a third of all cancers,³ suggesting that indigenous populations, including immigrants from South Asia, are at risk because of distinct lifestyle habits.

Tobacco therefore represents the largest single preventable cause of death and disease.⁴ Yet more than 110,000 people in the UK die each year prematurely due to smoking related diseases.⁵ According to research,⁵ it cost the NHS £2.7 billion in 2005-6, or 5.5% of the entire NHS budget to treat diseases caused by smoking.

Alcohol

Alcohol misuse is causally linked to several cancers – notably of the mouth, pharynx, larynx, oesophagus and breast. Risk for oral and pharyngeal cancers will double with each additional regular daily intake of two alcohol units per day and triple for five daily alcohol units.⁶ There is no clear evidence that specific alcoholic drinks (spirits, beer or wine) have

different grades of risk for mouth cancer – the risk depends entirely on the daily or weekly quantity that is consumed, a person's own ability to metabolise ethanol and the popularity of certain drinks within the nation or community. Binge drinking – consuming the weekly recommended safe limit in a single evening – is also linked to increased risk, though clear evidence has not been published so far.

Alcohol is second only to smoking as a risk factor for mouth and head and neck cancer. But alcohol and smoking is an even more deadly combination – together they contribute to approximately 75% of upper digestive tract cancers.⁷ Yet public awareness of the risks of alcohol misuse remains low.

A recent study (2009)⁸ estimated that for the UK in 2005, £3 billion or 3.2% of the total NHS expenditure could be attributed to alcohol consumption.

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Alcohol containing mouthwashes

Alcohol (more specifically, ethanol) is present in many proprietary mouthwashes. The possible relationship between mouthwash use and mouth cancer risk has been the subject of at least ten case-control studies published over the last three decades.⁹ A recent critical review of published data revealed that a link between mouthwash use, specifically alcohol-containing mouthwash, and mouth cancers is not supported by epidemiological evidence.¹⁰

In addition, according to recent reviews, the carcinogenic risk associated with mouthwash is low. According to Lachenmeier *et al.*, the risk associated with acetaldehyde from alcohol-containing mouthwashes (evaluated through ‘margin of exposure’) is very low – just one-twentieth the level considered by the European Food Safety Authority to be of ‘low priority for risk management’.¹¹

Another recent investigation into the biological effect of alcohol-containing mouthwashes on oral mucosa has concluded that they do not cause significant cytotoxic damage.¹²

Human papillomavirus (HPV)

Nearly two decades ago, Scully and colleagues¹³ produced the first evidence for the presence of viral nucleic acids in oral squamous cell carcinoma (OSCC) tissues, hypothesising that there may be a viral involvement in at least some mouth cancers. Subsequently, human papillomaviruses (HPV), a common sexually transmitted virus, has been implicated as a risk factor for mouth cancer affecting young people, in particular among those who had not been exposed to tobacco or alcohol.

In recent years many other studies have shown the link between HPV and mouth cancer. Researchers at the Johns Hopkins Oncology Centre have shown that HPV infection is associated with the development of some head and neck cancers, particularly in the upper throat, tonsils and back of the tongue (oropharynx), where it has been observed in up to 72% of cancers. In related work, D’Souza and colleagues¹⁴ recently reported that HPV-linked cancer has nearly doubled in incidence over the past 30 years in the United States.

Screening in general dental practice

Perhaps the most impact a clinician can have on mouth cancer control is to conduct opportunistic screening or case detection. The most important step in the early diagnosis and case detection is for dentists, hygienists or therapists to perform a systematic head, neck and oral mucosal examination that is routinely conducted properly and consistently on every patient they see in practice.

Head, neck and soft tissue inspection by conventional visual examination and palpation at every dental visit offers the opportunity for the early detection of mouth cancer and pre-cancer. More recently, several commercially available diagnostic adjuncts have been developed to aid the early detection of oral mucosal abnormalities. None of them discriminate pre-cancer from cancer or from benign inflammatory lesions with certainty. However, these optical and staining techniques enhance suspect oral lesions enabling easier visual detection.

Adjunctive test kits include the use of chemiluminescence (ViziLite Plus - used for the clear visualisation and early detection of oral abnormalities), toluidine blue staining (identifies tissue more likely to be dysplastic or cancerous), autofluorescence (VELscope/Sapphire - which provides real-time direct visualisation of a range of mucosal disorders) and brush biopsy of clearly visible affected areas which provides samples for cytology and ploidy analysis to enable a decision to undertake scalpel biopsy. The use of these adjunctive aids may increase the awareness of practitioners (and the public) to look for cancer in routine settings.

Helping to prevent mouth cancers

Providing brief advice and arranging counselling to quit tobacco use and to moderate alcohol use should be included in dental practice guidelines. The concept of chemoprevention is gaining ground and various agents have been tried to reverse, suppress or prevent carcinogenesis. Evidence exists that diets adequate in antioxidants have a cancer-protective effect. This is one of the reasons why at least five daily portions of fruit and vegetables are recommended.

What you can do now?

There is an alarming lack of public awareness about mouth cancer. As a member of the dental team, you are in a unique and strong position to advise your patients with high risk lifestyles about mouth cancer and really make a difference; possibly save a life! You can help to reduce patients' risks and improve their outcomes by routinely carrying out a head, neck and soft tissue examination, reducing diagnostic delays and arranging appropriate referrals.

Every dental clinician should familiarise themselves with NIHCE guidelines¹⁵ (2005) for detection and urgent referral, for improving outcomes from head and neck cancer, and use the two week wait scheme for suspected cancers.

At a community level you can also contribute

Table 2 Practical suggestions in the fight against oral cancer

Clearly define your practice protocols	
Target risk factors	Target early detection
<ol style="list-style-type: none"> 1. Know the risk factors 2. Understand the patient's social history 3. Provide motivation to reduce risks 4. Arrange counselling for addictive behaviours. 	<ol style="list-style-type: none"> 1. Carry out a head, neck and soft tissue examination routinely 2. Look for premalignant conditions/ cancer 3. Gauge the level of suspicion 4. Apply an adjunctive screening test 5. Refer to a specialist if you have any concerns.

to inter-professional activities to spread the word and improve rates of early detection and increase participation in preventive activities.

Mouth Cancer Action Month in November each year promotes opportunities for interaction through mass media and local programmes to raise awareness. (www.mouthcanceractionmonth.org).



Above all – remember – it takes just three minutes to save a life. So take a close look at the practical suggestions in the fight against oral cancer (Table 2) and start making a difference to your patients' lives.

Table 1 is reproduced with permission from a recent article published by Professor Warnakulasuriya in the British Dental Journal (2009; 207: 471-475).

Table 2 is taken from a lecture given at the BSDHT Conference in Bournemouth in November 2009 by Professor Warnakulasuriya.

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