Smoking and your mouth

Smoking exposes your mouth to over 7,000 chemicals found in tobacco smoke.[1] It can affect the health of your mouth in several ways. They range from those that affect your social life such as stained teeth and bad breath, to painful diseases that disable, disfigure or even kill, such as cancer. Stopping smoking can reduce your risk of diseases caused by smoking, including cancer, and improve the health of your mouth, gums and teeth.[2]

Mouth and throat cancers

Smoking is a major cause of cancer affecting the mouth (oral cavity) and the throat (pharynx).[3] Cancers of the mouth include tumours of the cheek, gum, tongue, lip, and the floor and lining of the mouth. Cancers of the throat include tumours in the area behind the nose and mouth that connects to the oesophagus (food pipe), e.g. the base (back third) of the tongue, tonsil, soft palate, the walls of the throat.[4]

The mouth and throat are used for breathing, talking, eating, chewing and swallowing. Advanced cancers of the mouth and throat can cause lasting pain, loss of function and disfigurement. Treatment for advanced cancer can involve surgery removing flesh and bone, radiation treatment, putting a hole in the neck (tracheostomy) to aid breathing or putting a feeding tube into the stomach.[4]

Using any form of tobacco increases the risk of mouth and throat cancers. The risk of developing cancer increases with the length of time you have smoked and the amount you have smoked. The risk of dying from mouth and throat cancer is around 10 times higher among male smokers and five times higher among female smokers compared with someone who has never smoked.[3] For mouth cancer alone, the risk is over three-fold.[5]

Within 10 years of stopping smoking your risk of mouth cancer is less than half of the risk for a continuing smoker and it will keep going down over time.[5] After 20 years your risk of mouth cancer is similar to someone who has never smoked.[5] Your risk for throat cancer also rapidly decreases over the first 10 years after stopping smoking.[3, 5] If you already have mouth or throat cancer, stopping smoking increases the likelihood of treatment success and survival, and reduces the risk of developing a second cancer.[6]

How common is mouth and throat cancer?

In 2011, 1,946 new cases of cancer in the mouth and throat[1] were recorded in Australia and in 2012 there were 603 deaths.[7] It is estimated 52% of these cancers in men and 42% in women are caused by smoking.[8]

In 2014, 332 Victorians were diagnosed with mouth cancer, and 66 men and 31 women died from the disease. Also, 192 Victorians were diagnosed with throat cancer, and 55 men and 11 women died from this disease.[9] These cancers are more common in men than women, as male smoking rates were higher over previous decades and it takes time for cancer to develop. After diagnoses with mouth cancer, 60% of men and 68% of women are still alive after five years. For those diagnosed with throat cancer, 60% of men and 65% of women are still alive after five years.[9] Early detection significantly increases the chances of survival.[4]

Precancerous conditions

One symptom that can occur before the development of cancer is a condition called leukoplakia.[2] Leukoplakia is a white patch or plaque on the lining of your mouth that will not rub off.[2-4] Most leukoplakia do not develop into cancer. But some leukoplakias are either cancerous when first found or have pre-cancerous changes that eventually progress to cancer if not properly treated.[4] If you smoke, you are much more likely to develop leukoplakia than non-smokers.[10-12] The risk increases with increasing numbers of cigarettes smoked per day and years of smoking.[10, 13] Stopping smoking reduces your risk of leukoplakia.[2] If you have leukoplakia, it is more likely to disappear within a few years of quitting smoking, compared to leukoplakia in people who keep smoking.[10]

Smoking and alcohol

Heavy alcohol use is also a major risk factor for mouth and throat cancers.[4] Together, tobacco and alcohol account for most cases of these cancers.[4, 6] People who both smoke and drink heavily are at very high risk of mouth and throat cancer.[3, 4] The risk is much higher than simply adding the risks of only smoking and only heavy drinking.[14] This effect is called synergy.[15] For example, in one large study, the risk for mouth and throat cancer in men was seven-fold for heavy smoking only (40 or more cigarettes per day) and six-fold for heavy drinking only (30 or more alcoholic drinks per week) compared to non-smokers who had less than one drink per week. However, men who both smoked and drank heavily for over 20 years were 38 times more likely to get mouth or throat cancer compared to men who did neither.[3]

Alcohol appears to increase the impact of certain cancer-causing chemicals in tobacco smoke. It might also contribute to the risk of cancer by making it easier for damaging chemicals to penetrate cells in the body, and through malnutrition in people who drink heavily.[1]

[1] Figures do not include cancers of the lip, salivary glands, nose, sinuses, larynx or nasopharynx.

Effects of smoking on the teeth, gum and bone

Smoking is a cause of periodontitis.[3] This is a common dental disease affecting the gum and bone that support your teeth.[3] It usually results from toxins produced by bacteria in plaque seeping down between your teeth and gums causing them to become inflamed.[3, 16] This can lead to problems such as swollen and infected gums, loss of jawbone that holds teeth in place, and deep spaces forming around the teeth that collect bacteria if plaque is not cleaned away (periodontal pockets).[3, 17]

Smoking may play a role in periodontal disease in a few different ways. Smoking affects the immune system, making it less able to fight infection. Smoking may also over-stimulate parts of the immune system, leading to the breakdown of the bone and connecting tissues around the tooth.[3, 17, 18] As well, smoking may impair the healing of gum, connective tissues, and bone, leading to the worsening of periodontal disease.[2, 3, 17-19]

Smokers are more likely to have periodontitis than non-smokers.[2, 3] It is estimated that about a third of moderate to severe periodontitis cases in Australia are due to smoking. Among severe cases, over half are due to smoking.[20] The risk increases with increasing numbers of cigarettes per day and years of smoking.[3] Smokers also show less improvement following treatment as non-smokers.[18, 19, 21]

Stopping smoking reduces the risk of developing periodontitis and slows down the progress of existing disease.[2, 3] After stopping smoking for more than 10 years your risk for periodontitis is close to that of someone who has never smoked.[2] Response to periodontal treatment improves in former smokers.[2, 18, 19]

Smoking and mouth surgery

Cigarette smoking impairs wound healing after mouth surgery.[21] One study of head and neck cancer patients[2] who had undergone surgery found that quitting smoking for at least three weeks before surgery reduced the risk of impaired wound healing.[22] In studies on other types of surgery, stopping smoking was found to reduce the risk of wound infections within four to eight weeks.[21, 23-25]

Smoking and your teeth

Smokers are more likely to have tooth decay and tooth loss than non-smokers.[2, 3, 26] This could be because smokers' saliva is less protective against tooth decay or because the root surfaces at the base of the teeth are more likely to become exposed due to periodontal disease caused by smoking.[2, 3] Your risk for tooth loss decreases within a few years of stopping smoking and approaches that of someone who has never smoked after 10 to 20 years.[2, 27, 28]

[2] includes cancers of the nose, mouth, throat, voice box and oesophagus

Other tobacco related conditions of the mouth

- Tobacco stains teeth, dentures and dental restorations. These brown to blackish stains are particularly noticeable around the base of the teeth.[29, 30]
- Bad breath (halitosis) and impaired taste are more common among people who smoke.[2, 31, 32]
- Smoker's melanosis appears as brown blotches on the gums. It is not associated with a risk of mouth disease.[2] After stopping smoking, gum colour gradually returns to normal after one or more years.[2, 33]
- Black hairy tongue occurs when the tongue cannot clean itself properly and bacteria, yeast and debris collect on the tiny bumps on the tongue (called papillae). It is mainly seen in people who are heavy smokers.[34]
- Smoker's palate is where the roof of the mouth (hard palate) becomes thickened and pale or white, often with many red dots (inflamed salivary gland openings). Pipe smokers are more likely to have this condition than cigarette smokers. It appears to be related to irritation and heat of concentrated tobacco smoke. It can disappear within several weeks of stopping smoking.[2, 30]
- Dental implants are more than twice as likely to fail in people who smoke.[35] A dental implant is a screw that acts as an artificial tooth root. It is inserted into your jawbone to support a replacement tooth, bridge or other dental prosthesis.[36] Stopping smoking may improve the success rate of dental implants.[2]

Who can I talk to for more information?

- Your **doctor** is an important source of information, particularly if you have an illness, or you are taking any other medicines.
- Your **pharmacist** can give you advice about stopping smoking.
- **Quitline 13 7848**: The Quitline is a friendly, confidential telephone service. Your Quitline counsellor is trained to listed carefully and provide practical advice just for you. You can call the Quitline for the usual cost of a local call from your phone or ask us to call you at no cost (Quitline callback). Talking with a Quitline counsellor can increase you chance of stopping smoking successfully.[37, 38]

Online resources

Quit website www.quit.org.au. Build your personal quit plan with easy-to-find information suited to you. You'll find tips, distractions, a cost calculator and stories from ex-smokers.

QuitCoach www.quitcoach.org.au. QuitCoach is a free web-based computer program that asks you questions and helps you quit by giving free personal advice tailored to your needs.

QuitTxt provides regular SMS messages including tips and encouragement to help you keep on track throughout your quit attempt. To begin, all you need to do is register and complete a brief questionnaire at www.quit.org.au/quittxt.

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