

How smoking affects the way you look

Introduction

Tobacco smoking seriously affects internal organs, particularly the heart and lungs, but it also affects a person's appearance.

While these changes are generally not as life threatening as heart and lung disease, they can, nevertheless, increase the risk of more serious disorders and have a noticeable ageing effect on the face and body.

Smoking and the skin

Research shows that the more a person smokes, the greater the risk of premature wrinkling.¹ Skin damaged by smoke has a greyish, wasted appearance. Skin can be damaged by tobacco smoke in several ways. Firstly, tobacco smoke released into the environment dries the skin's surface. Secondly, smoking reduces the amount of blood flowing to the skin by constricting blood vessels, thus depleting the skin of oxygen and essential nutrients.

Research has shown that the skin-ageing effects of smoking may be due to increased production of an enzyme that breaks down collagen in the skin and causes it to sag.² Collagen is the main structural protein of the skin which maintains elasticity. Over time, as collagen is reduced, squinting in response to the irritating nature of the smoke and the puckering of the mouth when drawing on a cigarette causes wrinkling around the eyes (known as Crow's feet) and mouth.

Smokers in their 40s often have as many facial wrinkles as non-smokers in their 60s.³ Skin damage caused by smoking may not be immediately visible to the naked eye, but is still happening, and can start to be detected in one's 20s or 30s.³

In addition, smokers may develop hollow cheeks through repeated sucking on cigarettes: this is particularly noticeable in under-weight smokers and can cause smokers to look gaunt.¹

All these changes add up to what some doctors describe clinically as a "smoker's face".⁴ This explains why it is often easy to identify a smoker just by looking at their face.

Smoking and Wound Healing

Smoking impairs wound healing, delaying recovery and increasing complications.^{5,6} Although this occurs with all types of surgery, some plastic surgeons have been known to decline to perform cosmetic surgeries on patients who refuse to quit smoking.⁷ The Royal College of Anaesthetists states that quitting smoking any time prior to surgery is beneficial.⁸ (For further information on smoking and surgery see the ASH Briefing [Smoking and Surgery](#) .)

Smoking and Psoriasis

Psoriasis is a chronic inflammatory skin condition which, while not life-threatening, can be extremely uncomfortable and disfiguring. Compared with non-smokers, smokers have a two- to threefold higher risk of developing psoriasis, with women being at the greatest risk.^{9,10} Some studies have found a dose-response association of smoking and psoriasis (i.e. the risk of developing psoriasis increases the longer a person smokes; and the severity of the disease increases the more an individual smokes).¹⁰

Smoking increases the risk of palmoplantar pustulosis (PPP), an incurable skin condition involving the hands and feet, which can occur on its own or in conjunction with psoriasis.^{11,12,13} In fact, 95% of patients with PPP are smokers, most of whom are heavy smokers.¹⁰

Smoking and weight

Although stopping smoking causes considerable improvements to health, it is often associated with weight gain.¹⁴ The average weight gain is around 7-9 kg (15-20 lbs),¹⁵ but 42% of quitters gained over 10 kg (22 lbs) in one study that tracked people for 8 years.¹⁶ One study showed that being young, of lower socio-economic status and being a heavier smoker are predictors of greater weight gain.¹⁷ Another study showed that obese smokers tend to gain the most weight after quitting smoking.¹⁶ Peri- and postmenopausal women are also more likely to gain weight after quitting.¹⁸ Although significant weight gain can lead to other serious health problems, a modest weight gain is still safer than continuing to smoke.^{19,20}

Although the reasons for post-cessation weight gain are not fully understood, it has been partly explained by the fact that smoking increases the body's metabolic rate (the rate at which calories are burned up) by about 10%.^{21,22} The effect of nicotine on metabolic rate may also explain why smokers tend to weigh less than non-smokers.²³

However, a smoking-induced increase in metabolic rate only accounts for about half the difference in weight between the average smoker and average non-smoker. Another likely mechanism is that smoking alters the body-weight set point (i.e. the weight towards which a person tends to return despite attempts to gain or lose weight). It has been suggested that smoking may lower a person's normal weight so that the weight gained on stopping reflects a return to the body's natural weight set point.²⁴

Nicotine also increases central nervous system levels of norepinephrine, dopamine and/or serotonin, which suppress appetite and facilitate weight loss.²⁵

Although smoking can facilitate weight loss, many smokers are still overweight or obese. The combination of excess weight and smoking has been shown to accelerate the ageing process of the body. One study showed that being both overweight and a smoker can age a person by ten years or more.²⁶

Body Shape

Despite the evidence that it can reduce weight, smoking also affects body shape, changing fat distribution in a way that is associated with disease. Smokers store even normal amounts of body fat in an abnormal distribution due to the effect of smoking on the endocrine system (glands that secrete hormones). In smokers, more fat is stored around the waist and upper torso, rather than around the hips. This means smokers are more likely to have a higher waist-to-hip ratio (WHR) than non-smokers.^{27,28,29} A high WHR is associated with a much higher risk of developing diabetes,³⁰ insulin resistance,³¹ heart disease,^{32,33} stroke,³⁴ high blood pressure,³⁴ metabolic syndrome,^{35,36,37} gallbladder problems,³⁸ and breast cancer,³⁹ among other cancers. Studies have shown that the waist to hip ratio increases with the number of cigarettes smoked per day.^{40,41}

Effects on the mouth

Halitosis (bad breath) and stained teeth and gums are perhaps the best known and most obvious effects of smoking.⁴² Tobacco use increases the risk of periodontitis,⁴³ which results in swollen gums and bad breath, and may cause teeth to fall out.⁴⁴ Smoking may indeed be responsible for 40% of chronic periodontitis cases among adults and smokers tend to respond more poorly to treatment.⁴⁵

Given that tooth loss is one of the results of periodontitis, it is important to consider smoking's impact on tooth implants. Although smoking cessation prior to the implant may help, smoking increases the risk of failure of tooth implants and post-operative complications.^{46,47} The more a person smokes, the more likely the implant is to fail. One study in a recent review article found that "approximately one in every three implant failures occurred in smokers, and one in five patients with early failures smoked over 10 cigarettes per day, while only 12.3% of patients without failures were smokers."⁴⁸

Common non-malignant oral conditions in smokers include the darkening of gum pigmentation ("smoker's melanosis"); leukoplakia of the tongue ("smoker's tongue"), characterized by white spots or patches on the tongue or vulva; and a grey-white palate with red papules (bumps) a symptom of inflamed salivary glands ("smoker's palate"/nicotine stomatitis).^{49,50}

Other effects

Complexion: Smoking can make people more prone to acne and delay the healing of blemishes. Women, in particular, have been found to have more frequent and severe acne, which worsens the more they smoke.⁵¹ Smoking is also considered a trigger for acne inversa, a chronic inflammatory skin disease that can be quite disfiguring.⁵²

Hair: Smoking reduces the nutrients that reach hair, leaving it lacklustre. Smoking may even discolour hair, particularly facial hair in men. Researchers have also found a link between smoking and accelerated hair loss and greying.⁵³

Eye appearance: Smoke can damage eye blood vessels creating a bloodshot appearance and causing irritation.⁵⁴

Hands: Prolonged smoking causes discoloration of the fingers and fingernails on the hand used to hold cigarettes.⁵⁵

Cancer: Cancer of the lip, tongue, gums, etc. can cause severe disfiguration. These topics are covered extensively in the ASH research report [Tobacco and Oral Health](#).

Effects on appearance linked to smoking cessation

An international study found that 13.3% of men and 21% of women acknowledged that the effect of smoking on their appearance was one of the factors that motivated them to quit.⁵⁶

In one UK study, youth and young adults aged 16-24 also took their appearance into consideration in making the decision to quit smoking. The effect of this factor varied by gender, with young women more worried about their skin.⁵⁷

Another study from the UK measured the reactions of women aged 18-34 to facial age progression (using special software). Some women were shocked at the possible future appearance of their skin if they continued to smoke. The study concluded that using age-appearance morphing techniques to personalise the experience for female smokers significantly increased their motivation to quit smoking.⁵⁸

Health professionals also need to take weight gain into consideration when assisting smokers in quitting. Women, particularly young women, tend to be more concerned about post-cessation weight gain than men.^{14,59} This concern has been shown to either reduce motivation to quit, postpone quit attempts or cause relapse.^{14,19,60} Although post-cessation weight gain is almost inevitable, it can be modified by eating a low-fat, calorie-reduced diet and by moderately increasing exercise. In recent years, studies of interventions that combine smoking cessation and weight loss have shown promise.⁶¹

Health care professionals should consider using appearance to appeal to smokers in motivating them to quit but the intervention should be evidence-based. Although more research is needed, preliminary studies show that smoking cessation interventions related to appearance may have a positive impact on quitting.^{62,63} Although NICE guidance⁶⁴ does not specifically mention using the negative effects on a smoker's appearance as motivation to quit, the U.S. Clinical Practice Guideline includes the following:

“The clinician should ask the patient to identify potential benefits of stopping tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. Examples of rewards follow: [...]

- Home, car, clothing, breath will smell better
- Improved appearance, including reduced wrinkling/aging of skin and whiter teeth.”

The Guideline also provides suggestions for what to say to smokers about the likelihood of post-cessation weight gain, including which pharmacological supports have been shown to delay weight gain (bupropion, nicotine gum and nicotine lozenges).¹⁹ There is also promising research which shows that combinations of smoking cessation medications are even more effective in reducing post-cessation weight gain.⁶⁵

Video resources

The NHS has developed a useful video about smoking and appearance designed for girls and young women. Health professionals may wish to refer young women to [How will smoking affect your appearance?](#)⁶⁶ to help motivate them to quit smoking – or to not even start in the first place.

Another video that is more suitable for adults features a nurse explaining the effects of smoking on appearance and is entitled, [How Does Smoking Affect Your Appearance?](#)⁶⁷

Dental care professionals may wish to refer smokers to [How Does Smoking Affect Your Teeth?](#)⁶⁸ Similar videos on smoking and oral health can be found on the same website.

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