

The Clinical Case for providing stop smoking support to Dental Patients

Why intervene in secondary care?

1. Hospital patients are more receptive to 'Very Brief Advice' (VBA) and an offer of support to stop smoking, as they are often experiencing a period of heightened motivation
2. Giving VBA to a hospital patient (the '3 A's': Ask, Advise, Act) can also encourage compliance to the smokefree hospital policy, and highlight any need for withdrawal management. Providing Nicotine Replacement Therapy (NRT) to a patient during a period of forced abstinence, will ease nicotine withdrawal symptoms
3. Stopping smoking can lead to significant health benefits, and reduce post-operative complications and improve recovery time

What is the aim of this 'clinical case' document?

The aim of this document is to provide clinical support for hospital staff in terms of supporting patients to stop smoking, even if this is just for a period of forced abstinence whilst in hospital. Being in hospital provides an opportune moment to intervene and provide both brief advice and support to stop smoking; including making a referral on to local stop smoking support. There are many benefits for a patient if they have temporary abstinence from smoking, including a shorter time for recovery and this can often stimulate a full attempt to stop smoking.

How does smoking affect the mouth?¹

- Tar deposited in the mouth causes discolouration to teeth enamel, a coated tongue and halitosis
- Alterations in taste and smell
- Impairment of salivary function, immune responses and blood flow
- Reduced periodontal blood flow results in a change in oral microflora composition, favouring the presence of anaerobic bacteria
- Changes in bone metabolism such as an increased secretion of the bone resorbing factors PGE2 and IL-1β or a decrease in intestinal uptake of calcium
- Carcinogens present in tobacco smoke can cause changes that give rise to oral cancers

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What is the relationship between smoking and oral health?

Research has shown that, compared to those who have never smoked, smokers have an increased risk of developing:

- Oral cancer. Tobacco smoke works synergistically with alcohol to increase the risk of oral cancer, and smoking is also an independent risk factor²
- Oral leukoplakia and epithelial dysplasia^{3,4}
- Periodontal disease, dental caries and tooth loss. Periodontal disease severity is related to amount smoked, and there is a dose dependant association between current smoking and risk of tooth loss.⁵⁻⁷ Rate of bone loss almost four times greater than in non smokers⁸
- Oral candidosis⁹
- Impaired treatment response and healing¹⁰

What are the benefits of stopping smoking to oral health?

Successfully stopping smoking will not only benefit a patient's long term health by reducing the risk of developing other disease,¹¹ abstinence from smoking may help a patient heal faster by eliminating the acute effects of smoking on the body and stopping smoking has also been associated with improved dental outcomes.

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**Main acute effects of smoking on the body
(estimated time of recovery, if known)**

- Increase in sympathetic tone leading to an increase in blood pressure, heart rate and peripheral vasoconstriction leading to an increased demand for oxygen and cardiac function.¹²
(24 – 48 hours)
- Formation of carboxyhaemoglobin leading to a reduction in oxygen delivery to the tissues.¹³
(8 – 24 hours)
- Formation of carboxymyoglobin leading to a reduction in oxygen storage in the muscles.¹⁴
(8 – 24 hours)
- Increase in red blood cell production, which leads to an increase in blood viscosity, a decrease in tissue perfusion, a decrease in oxygen delivery to the tissues and potentiation of thrombotic process.^{15,16}
- Hypersecretion of mucus, narrowing of the small airways, decrease in ciliary function and change in mucus rheology leading to a decrease in mucociliary transport.^{15,16} **(12 – 72 hours)**
- Changes in functioning of a range of immune cells (pro- and anti-inflammatory cytokines, white blood cells, immunoglobulins) which lead to decreased immunity and are associated with atherosclerosis.^{15,16} **(1 week – 2 months)**
- Induction of hepatic enzymes which increases drug metabolism through both pharmacokinetic and pharmacodynamic mechanisms.¹⁷ **(6 – 8 weeks)**

Health benefits associated with stopping smoking for dental patients

Stopping smoking has been associated with:

- Improved composition of oral microflora and periodontal health.^{18–22}
- Reduced risk of tooth loss.^{23–25} The risk of tooth loss is about two to four times greater in current smokers compared to never smokers. Risk reduces after stopping smoking, but it takes at least 15 years to return to that of a non-smoker.²⁶
- Reduced risk of implant failure.²⁷ Patients who stop smoking one week before treatment and eight weeks following have success rates identical to non-smoking patients.²⁸

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Providing 'Very Brief Advice' to hospital patients: the '3 A's'

Providing a stop smoking intervention to a hospital patient is proven to be effective regardless of the reason for admission.²⁹ Offering VBA is the single most cost effective and clinically proven preventative action a healthcare professional can take³⁰ and it is important to keep giving advice at every opportunity, as smokers may take several attempts to stop smoking successfully.³¹ In addition, by referring a patient to a local stop smoking service, they are four times more likely to stop smoking.³²

Research shows that 95% of patients expect to be asked about smoking and a short intervention can make all the difference.^{33,34} The '3 A's' 30 second approach to giving 'very brief advice' are as follows:

ASK and record smoking status

ADVISE the patient of the personal health benefits of stopping smoking

ACT on the patient's response

- prescribe NRT for patients in withdrawal
- monitor withdrawal and adjust pharmacotherapy accordingly
- refer to local stop smoking service

How was this information sheet put together?

This information is a summary of the current scientific evidence on the association between cigarette smoking and dental outcomes. Studies were found by searching MEDLINE and EMBASE using combined exploded subject headings of 'dental' and 'tobacco use cessation' from 01/1990 – 06/2011 and by searching the Report of the US surgeon general on the health benefits of smoking cessation.³¹

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