

Appendix F: Correlation Matrices for Studies 3a and 3b

Table 29

Correlations Between Theory of Planned Behaviour Variables and Organisational Factors for Dental Hygienists' Identification of Patients who Smoke (Above the Diagonal) and Provision of Assistance to Patients who Smoke (Below the Diagonal)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Intention	-	.23***	.11*	.35***	.31***	.09	.19***	-.02	.01	.14**	.13*	.02	.18**
2. Self-efficacy	.51***	-	.24***	.48***	.35***	.25***	.42***	-.13*	.24***	.01	.21***	.18**	.30***
3. Controllability	.18***	.32***	-	.06	-.02	.08	.14**	-.04	.24***	.02	.06	.06	.06
4. Attitude	.55***	.51***	.25***	-	.43***	.19***	.42***	-.14*	.25***	.18**	.20***	.17**	.36***
5. Subjective norms	.55***	.55***	.21***	.52***	-	.29***	.50***	-.08	.11*	.22***	.17**	.13*	.28***
6. Role adequacy	.33***	.45***	.24***	.29***	.43***	-	.52***	-.12*	.23***	.33***	.14*	.18**	.20**
7. Role legitimacy	.39***	.52***	.26***	.49***	.54***	.52***	-	-.17**	.30***	.19***	.25***	.26***	.24***
8. Workload	-.01	-.17**	-.12*	-.14**	-.15**	-.12*	-.17**	-	-.23***	-.05	-.39***	-.34***	-.08
9. Autonomy	.09	.20***	.27***	.16**	.12*	.23***	.30***	-.23***	-	.02	.19***	.21***	.14*
10. Education and training	.23***	.16**	.09	.19***	.18**	.33***	.19***	-.05	.02	-	.07	.09	.14*
11. Co-worker support	.15**	.17**	.05	.10	.21***	.14*	.25***	-.39***	.19***	.07	-	.68***	.16*
12. Supervisor support	.13*	.15**	.06	.15**	.19***	.18**	.26***	-.34***	.21***	.09	.68***	-	.18**
13. Behaviour	.37***	.43***	.18**	.37***	.29***	.34***	.37***	-.10	.16*	.17**	.18**	.22***	-

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 30

Correlations Between Theory of Planned Behaviour Variables and Organisational Factors for Emergency Department Nurses' Identification of Patients at Risk (Above the Diagonal) and Provision of Assistance to Patients to Modify Their Alcohol Consumption (Below the Diagonal)

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Intention	-	.31***	-.03	.30**	.37***	.18	.15	-.08	.03	.13	-.03	.05	.17
2. Self-efficacy	.37***	-	-.03	.54***	.33***	.30**	.42***	-.02	.25**	.05	.06	.15	.15
3. Controllability	.24**	.34***	-	-.06	-.18*	.03	.04	-.16	.16	.03	.10	.05	-.20
4. Attitude	.26**	.27**	.20*	-	.39***	.14	.35***	.07	.20*	.14	.18	.36***	.13
5. Subjective norms	.41***	.44***	.19*	.40***	-	.17	.34***	.12	.11	.10	-.10	.08	.18
6. Role adequacy	.33***	.38***	.31***	.27**	.36***	-	.60***	-.08	.43***	.24**	.08	.01	.20
7. Role legitimacy	.31**	.32***	.26**	.36***	.37***	.60***	-	-.06	.56***	.20*	.23*	.18	.03
8. Workload	-.10	-.13	-.15	-.10	.02	-.08	-.06	-	-.25**	.02	-.03	-.05	.16
9. Autonomy	.25**	.27**	.35***	.24**	.22*	.43***	.56***	-.25**	-	.18	.14	.24**	-.13
10. Education and training	.09	.07	.13	.02	.24**	.24**	.20*	.02	.18	-	.01	.09	.05
11. Co-worker support	.03	.19*	.04	.16	.01	.08	.23*	-.03	.14	.01	-	.50***	-.11
12. Supervisor support	.10	.12	.01	.25**	.10	.01	.18	-.05	.24**	.09	.50***	-	-.18
13. Behaviour	.14	.15	.05	.08	.05	-.03	-.16	-.05	-.19	-.02	-.08	-.02	-

* p < .05, ** p < .01, *** p < .001

Appendix G: Study 3 Mediation Analyses

Table 31

Path Coefficients for the Additional Paths Testing the Direct Influences of Organisational Variables on Dental Hygienists' Identification of Patients Who Smoke and Provision of Assistance to Patients to Quit Smoking

Organisational Variable	Identification	Assistance
Role Adequacy	.08	.10
Role Legitimacy	.07	.10
Organisational Policy	.09	.02
Smoking Status	.04	.04
Coworker support	.04	.03

Note. None of the path coefficients were significant at $p < .05$.

Table 32

*Direct Effects of Organisational Factors on Emergency Department Nurses'**Frequency of Identifying Patients at Risk of Alcohol-Related Harms, Before (Step 1)**and After (Step 2) Controlling for Theory of Planned Behaviour Variables (N = 273)*

Organisational Factor	B	β
Step 1		
Organisational policy	.06	.05
Role adequacy	.16	.24
Role legitimacy	-.13	-.15
Co-worker support	-.03	-.03
Supervisor support	-.08	-.17
Step 2		
Intention	.13	.19
Self-efficacy	-.07	-.09
Intention x self-efficacy	.09	.09
Attitude	.13	.11
Subjective norms	.07	.10
Organisational policy	-.07	-.06
Role adequacy	.18	.27
Role legitimacy	-.16	-.18
Co-worker support	.02	.02
Supervisor support	-.11	-.23

Note. No coefficients were significant at $p < .05$

Table 33

Direct Effects of Organisational Factors on Emergency Department Nurses' Frequency of Assisting Patients to Modify Their Alcohol Consumption, Before (Step 1) and After (Step 2) Controlling for Theory of Planned Behaviour Variables (N = 273)

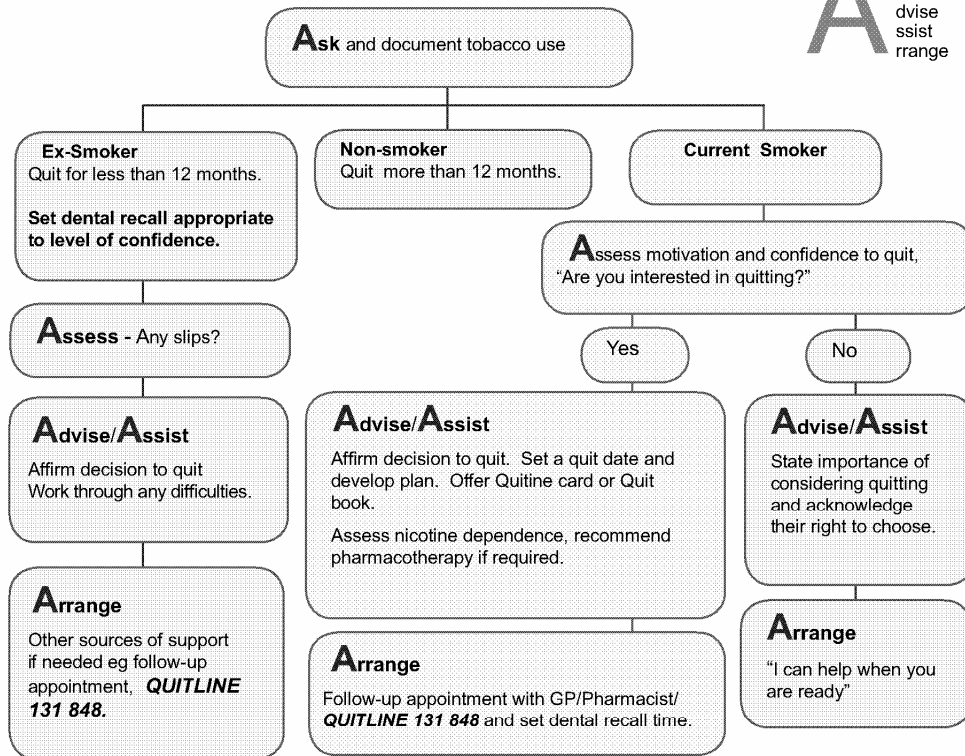
Organisational Factor	B	β
Step 1		
Organisational policy	.04	.01
Role adequacy	.19	.08
Role legitimacy	-.71	-.23
Supervisor support	-.01	-.01
Step 2		
Intention	.47	.21
Self-efficacy	.77	.19
Intention x self-efficacy	.67	.16
Attitude	.46	.12
Subjective norms	.27	.09
Organisational policy	-.60	-.15
Role adequacy	-.34	-.14
Role legitimacy	-.74	-.24
Supervisor support	-.16	-.09

Note. No coefficients were significant at $p < .05$

Dental Smoking Cessation

Flow Chart

Five A's
Ask
 Assess
 Advise
 Assist
 Arrange



SYMPTOMS OF QUITTING

Symptom	Effect on body	Coping strategy
Craving	Intense desire to smoke, declines over 4 weeks	Consider pharmacotherapy. Brief distractions eg: 4D's: drink water, deep breathe, do something else, delay urge to smoke. Ring the Quitline 131 848.
Coughing	Worse initially, body clearing respiratory tract.	Settles after first 2-3 weeks.
Bowel upsets	Possible constipation or diarrhoea.	Settles over 2-3 weeks.
Sleep disturbances	Sleep patterns altered, insomnia or tiredness.	Settles over 2-4 weeks.
Mood alteration	Reflections of grief and (mainly) nicotine withdrawal on neuro transmitters.	Consider Pharmacotherapy. An old support system has been lost, find new ways to handle stress, eg: talk to a friend. Transient mood, returns to normal after 4 weeks.

For further information go to: www.quitsa.org.au

Health Benefits

of Quitting

Health Benefits of Quitting

- Blood pressure and pulse rate returns to normal.
- Temperature of hands and feet increases to normal.
- Carbon monoxide and oxygen level in blood returns to normal.
- Immediate risk of heart attack starts to fall.
- Circulation improves.
- Energy and fitness level improves.
- Lung function increases by up to 30%.
- Most nicotine withdrawal symptoms disappear.
- Cilia regrow in lungs, increase in their ability to handle mucus, clean themselves and reduce infection.
- Risk of coronary heart disease is half that of smoker.
- Risk of lung cancer is 30-50% that of continuing smoker.
- Stroke risk same as non- smoker.
- Risk of coronary heart disease same as a non smoker.

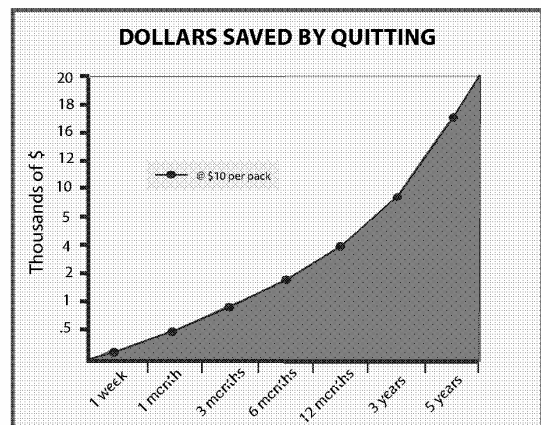
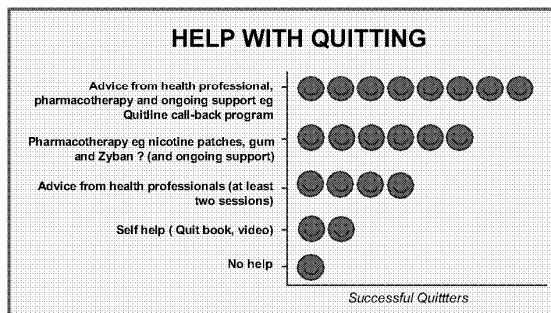
Dental Benefits of Quitting

Initial and continuing benefits:

- Improved gingival and oral tissue health.
- Improved taste sensation after 48 hours.
- Prevents bad breath.
- Minimises tooth staining.
- Smokers' palate disappears shortly after cessation of smoking.

Longer term benefits:

- Reduced risk of periodontal disease and tooth loss.
- Improved treatment outcomes for:
 - Oral surgery
 - Periodontics
 - Implants
 - Prosthesis
 - Restorative and aesthetic dentistry.
- Smokers' melanosis in heavy smokers reverses after a year and gingival colour returns to normal.
- Oral leukoplakia may regress or disappear following cessation.
- Diminished risk of mouth, throat and oesophagus cancer to half that of a smoker after 5 years.



PHARMACOTHERAPY FOR SMOKING CESSATION

SUITABLE ONLY FOR PATIENTS SMOKING 10 + CIGARETTES PER DAY

TYPES OF THERAPY

Nicotine sub-lingual tablet
 Nicotine lozenge
 Nicotine patch
 Nicotine gum
 Nicotine Inhaler
 Bupropion (Zyban)

REFER TO

Pharmacist
 Pharmacist
 Pharmacist
 Pharmacist
 Pharmacist
 General Practitioner





Information Sheet

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Products to help you quit

Stopping smoking is a positive step. But some people may find using some sort of medication helpful, particularly if they've tried to quit before and found it difficult.

Nicotine Replacement products, whether available over the counter or by prescription, **must only be used with the advice of your pharmacist or doctor**. You cannot assume that because a product is suitable and safe for your use that the same applies to anyone else - in some cases (eg children) it may be harmful. Be sure to read carefully all the information provided, and follow the manufacturers instructions for use. **Getting extra support** (like the Quitline **137 848**) is also a good idea.

Always seek advice from your pharmacist or doctor.

Nicotine Replacement Therapy

There are now five types of NRT (nicotine replacement therapy) available in Australia - **patches, gum, lozenges, sublingual tablet** and **inhaler**. These help smokers quit by replacing some of the nicotine they normally get from their cigarettes with nicotine absorbed through the skin and the lining of the mouth. This eases some of the nicotine withdrawal symptoms such as cravings and irritability. NRT can help smokers who want to quit deal more effectively with their nicotine addiction while they get used to a non-smoking lifestyle.

Smoking can be thought of as an addiction with three basic parts

- addiction to nicotine
- reinforcing behaviours
- psychological dependence.

Many people are addicted in all three ways, but some are not. Using NRT only addresses the physical addiction to nicotine. Because of this, most people need help such as counselling to change the psychological and behavioural patterns associated with smoking as well.

When using NRT, nicotine is absorbed through the skin (patches) or the lining of the mouth (gum, lozenges and inhaler).

Nicotine entering the body through NRT is absorbed at a lower rate and in lower doses, and most importantly, without the other toxins contained in cigarettes, such as carbon monoxide and other cancer-causing substances.

Who will get the most out of NRT?

Research suggests that those who are most likely to benefit from the use of NRT in any of its forms will

- currently smoke 15 or more cigarettes a day
- be receiving some other form of support (eg provision of other information, counselling, follow-up, being part of a special quit program).

When using NRT, you should not smoke at all.

How effective is NRT?

Research suggests that nicotine replacement increases the chances of people successfully quitting. When people are highly motivated to stop smoking, and use NRT to help them, they are twice as likely to stop smoking, and stay stopped, than those who use nothing.



How can I get Nicotine Replacement Therapy?

All forms of NRT are available over the counter at pharmacies, but you should discuss with your doctor or pharmacist which type will be most suitable for you. Some forms are available in different strengths - eg lozenges, sublingual tablet and gum. You should discuss this too. As a rough guide, if you have your first cigarette within 30 minutes of waking, you need the strongest form.

Is NRT suitable for everyone?

You should **not** use NRT if you

- are pregnant, planning a pregnancy or breastfeeding
- are a non-smoker, or only smoke occasionally
- are under 18
- have had a recent heart attack or stroke.

You should check with your doctor or pharmacist before using NRT if you have a number of common medical conditions, including asthma, heart disease (including angina or palpitations), high blood pressure and diabetes.

Some medications, both prescribed and over the counter medication, may interact with NRT. Be sure to mention anything you are taking to the pharmacist.

Inside the pack of your chosen NRT product is important information (Consumer Medicine Information). **Be sure to read this information very carefully before starting to use NRT.**

Cost

Currently in Australia, three major brands of NRT are available - Nicorette, Nicobate and QuitX. Other generic brands may also be available. These are competing brands of similar products manufactured by different pharmaceutical companies. Prices of all types of NRT vary between brands, and may vary considerably between pharmacies - it pays to shop around.

Some pharmacies offer discount to members and some health funds provide a rebate, depending on the type of cover. It may be also be worth investigating mail order.

As a rough guide, lozenges cost from \$5 per day, gum from \$6 per day, inhaler from \$6 per day, and patches around \$25-\$40 per week, if used according to the manufacturer's directions.

Non-nicotine medications

At the moment, Bupropion Hydrochloride (**Zyban**) is the only non-nicotine medication recognised as a smoking cessation aid. It is only available with a doctor's prescription.

How it works

Zyban comes in tablet form and does not contain nicotine. It acts on the parts of the brain that are affected by nicotine. It seems to reduce craving and withdrawal symptoms such as frustration and anxiety, difficulty concentrating, restlessness and negative mood.

Smokers start taking Zyban before their quit date, usually stopping around day 8, and will need to use it for at least 9 weeks. Zyban is listed on the Pharmaceutical Benefits Scheme (PBS), and is prescribed as an initial dose of 30 tablets, with a follow-up prescription of 90 tablets. This enables your GP to check on your progress and any possible side effects.

Who can take Zyban?

Zyban is only available on prescription from your doctor. Some people should **not** take it, including people who

- have ever had seizures
- have had head injuries
- take some anti-depressants (MAO inhibitors)
- take other medication containing bupropion
- have, or have had, eating disorders.

It is very important to discuss thoroughly and completely with your doctor, your suitability to use Zyban. As with many other medications, if you fail to tell the prescribing doctor about all your conditions, and all medications you are taking, you place yourself at risk of adverse reactions to the drug.

Zyban must be taken according to prescription instructions. It is very important to read the Consumer Medicine Information (CMI) provided in the pack before starting to take this medication.

Side effects

Quite a number of people report side effects or allergic reactions when using Zyban. Some of these are quite serious. Possible side effects include dry mouth, difficulty sleeping, headache, upset stomach and sometimes seizures. See your doctor immediately if you are at all concerned.

Adverse reactions can be reported to the Therapeutic Goods Administration (TGA) (1800 044 114).

Effectiveness

Although more studies are needed, research suggests that it is probably as effective as NRT. However, Zyban is not a miracle cure. It will not work for everyone, and some people will be more suited to one form of medication than another. It works best for motivated and committed quitters who seek extra support. **Call the Quitline 137 848**

January 2006

Common problems in the mouth caused by smoking

Problems after dental treatment

- Smoking often causes
- complications after tooth extraction
 - slower healing after gum disease treatment
 - failure of dental implants.

Quitting smoking reduces the likelihood of problems.

Stained teeth and smokers' breath

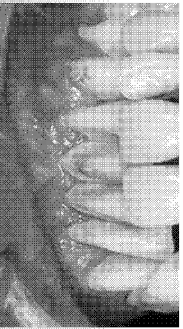
Smoking stains your teeth and fillings. Smokers' breath may be made worse by the build-up of calculus [tartar.] Mints to freshen the breath may contain sugar and lead to decay problems. Always use a soft-bristled brush to clean your teeth, and see a dental professional for cleaning and polishing to remove stains from your teeth.

All toothpastes get their cleaning power from tiny abrasive particles that remove stains and plaque and gently polish teeth. Smokers' toothpastes and whitening products often have more of these particles, and should be used with care.

Vigorous brushing may result in excessive wear, removing the protective enamel and causing abrasion of exposed root surfaces. A dental professional can give advice on how to care for your teeth.

Figure 4: Stained teeth with tartar build-up in smoker's mouth

Photo courtesy of Dr R Hirsch University of Adelaide



Smoking affects the mouth in many ways

- Smokers' breath
- Stained teeth
- Loss of taste
- Gum disease
- Tooth loss
- Oral cancers

The risk of these problems reduces as soon as you QUIT

Quitting smoking

- Ask health professionals such as your doctor, dentist or pharmacist for advice.
- Phone QUITLINE 137 848 (13 QUIT)
- Set yourself achievable goals and do not be discouraged by short-term failures.

Further information

Dental Practice Education Research Unit

Dental School,

The University of Adelaide,

South Australia 5005

Phone (08) 8303 5438

Email dperu@adelaide.edu.au

Website [//www.adelaide.edu.au/socpre-chem/dperu](http://www.adelaide.edu.au/socpre-chem/dperu)

Smoking and your mouth



Colgate Periodontal Education Program

SMOKING

Tobacco smoking causes more ill health and premature death than any other drug use in Australia. Smoking affects the whole body including the mouth.

About 20% of the Australian population are current smokers. Most start the habit in their teens.

Cigarette smoking is a major cause of many health problems including:

- lung and heart diseases
- strokes
- poor pregnancy outcomes
- oral diseases including oral cancers and gum disease leading to tooth loss.

How smoking affects the mouth

Smoking causes smokers' breath, stained teeth, loss of taste and changes to the gums.

Healthy gums are pink and firm. Smokers' gums are often thickened and may vary in color from unusually pale to purplish in severe cases. These changes are due to the effect smoking has in restricting the supply of blood and oxygen to the gums.

Figure 1: **Healthy gums**

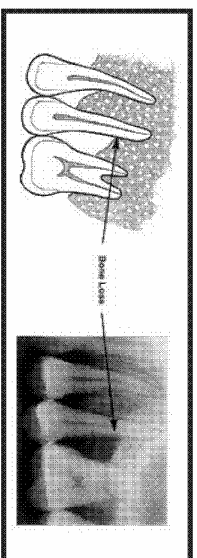
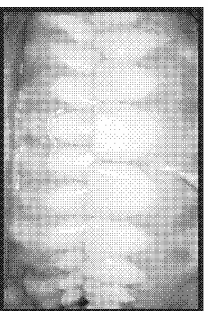


Figure 2: **Loss of bone shown in X-ray of patient with gum disease**

Smoking and gum disease

In Australia, 15–20% of people suffer from gum disease (periodontal disease.) Healthy gums need good circulation to bring oxygen and nutrients in and take waste products [carbon dioxide] away. Good circulation is also an important defense against infection. Smoking disrupts this process and smokers are up to 6 times more likely to develop gum disease than non-smokers.

Gum disease – you can't see it, you may not feel it, but you do need to worry about it!

Smoking causes damage to the gums and the bone supporting the teeth. Long-term gum disease can result in tooth loss – smokers lose more teeth than non-smokers.

However, progress of the disease can be stopped and further damage prevented by stopping smoking, combined with appropriate dental care.

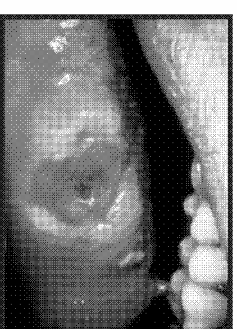


Figure 3: **Oral cancer on the side of the tongue**

Smoking and oral cancer

Smoking is a major cause of cancer in the mouth. The more cigarettes per year you smoke and the more years you have been smoking, the greater the risk.

Oral cancers make up 3% of all cancers in Australia. They occur more often in people who have smoked for many years, or who smoke and are heavy drinkers.

Oral cancers diagnosed in the early stages may often be successfully treated. Early-stage cancers usually are not painful eg a small white or red area or an ulceration that does not heal. These can be detected during dental check-ups.

Regular dental checkups are important because by the time the symptoms of oral cancer become noticeable to the patient, the cancer may be in its late stages and the prognosis is less favorable.

Quitting smoking reduces the risk of oral cancer and gum disease.

Smoking

Smoking and oral health

Cigarette smoking is the cause of many major general and oral health problems. Smoking is of major interest to dental professionals as it is known to be the risk factor for oral cancer and periodontitis. Smoking also has an unfavourable impact on healing and dental treatment outcome.

Epidemiology of smoking

Tobacco smoking is one of the major risk factors for many illnesses. It is the largest contributor to the burden on the health system.

Data from the Australian Institute of Health and Welfare 2001 show that smoking is prevalent in the Australian population, with nearly half (49%) being current or former smokers. In people 14 years and over (Figure 1), 21% of men and 18% of women smoke daily.

The highest rate of smoking is found in males aged 20-29 years (28%) and the highest rate for females is in the 30-39 years age group (24%). The lowest rate of smoking is found among those aged 60+ years. It is disturbing that smoking among adolescents (14-19 years) is greater than ever and is still rising, with more females (16%) taking up the habit than males (14%).

The majority of smokers (89%) start in their teenage years; therefore, it is important to target this age group with some prevention strategies.

Smoking as a risk factor

Cigarette smoking is a major risk factor for many illnesses such as lung and cardiovascular diseases, poor pregnancy outcomes, and oral diseases including oral cancers and periodontitis^{1,2,3}.

The role of smoking in the pathogenesis of these diseases is believed to be associated with a deficient host immune function, causing an increased risk of disease and poor wound healing. Smoking also impairs the revascularisation of bone and soft tissues, further impairing healing⁴.

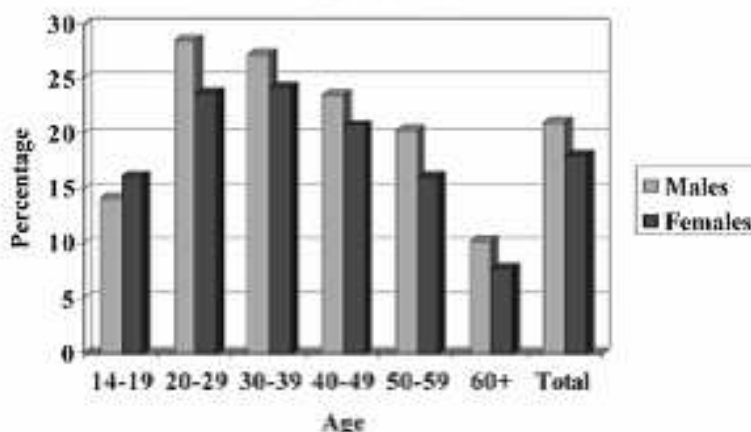
Studies have highlighted the correlation between smoking and periodontal disease, oral cancer and oral mucosal lesions^{5,6}.

Periodontal disease

It is estimated that up to 20% of the Australian population suffer from a form of periodontal disease⁷.

Periodontitis is caused by environmental (bacteria) and host related factors. Numerous epidemiological studies have concluded that smoking is also a significant risk factor^{8,9}. Current smokers are 2.5 to 6 times more likely to have periodontitis than non-smokers¹⁰. Former smokers are almost twice as likely to have periodontitis than people who have never smoked^{11,12}. In terms of severity of periodontal disease, a number of studies have confirmed that smokers are three times more likely to suffer from severe periodontitis compared to non-smokers^{13,14,15}. There is also evidence that smokers experience greater tooth loss than non-smokers^{16,17}.

Tobacco smoking status: proportion of the population that smokes daily by age and sex, Australia 2001



Source: AIHW Australia's Health 2002

Periodontal disease (cont'd)

Among current smokers there is a dose-response relationship between the number of cigarettes smoked per day and the likelihood of periodontitis – the more cigarettes smoked the greater the chances of developing periodontitis²⁰.

Smoking causes irreversible damage to the periodontium; however, the progress of the disease can be stopped and further damage prevented by cessation of smoking²⁰.

This information can be used as encouragement for smokers to quit the habit. Although the patient, as well as the dental professional, will still need to deal with some dental consequences of smoking, the patient can be reassured that the periodontal disease will not worsen.

Smoking cessation significantly benefits a person's likelihood of tooth retention, but it may take decades for the rate of tooth loss to return to that observed in non-smokers²¹.

Gingival tissue

Gingivitis is modified by several factors including smoking²¹. Gums of smokers show:

- fewer gingival inflammatory changes
- reduced bleeding
- a thickened and fibrotic appearance.

The gingival changes are due to a suppressed immune response to plaque that masks the presence of periodontal disease²¹. **It is important that the dental clinician recognises the condition and performs a thorough periodontal examination to detect signs of periodontal disease.**

Acute necrotizing ulcerative gingivitis (ANUG) occurs more frequently in smokers. Possible explanations for the increased frequency of ANUG in smokers include the vasoconstriction

of gingival blood vessels, reduced activity of leukocytes and proliferation of anaerobic fusospirochaetal microorganisms.

Oral cancer

Studies continue to provide evidence of the strong correlation between smoking and oral cancer. The risk of oral cancer increases with increasing number of cigarettes smoked per year and number of years a person has smoked. After quitting smoking the risk of cancer reduces.

In Australia **3% of all cancers are oral cancers** and the annual death rate from oral cancers is higher than that of cervical cancer. Smokers over 40 years of age who smoked one packet a day for 20 years have 4.4 times the risk of developing mouth cancer. The risk of oral cancers associated with smoking increases further with excessive alcohol consumption²².

Because oral cancers in the early stages are often treated successfully by excision, it is important that dental clinicians are able to diagnose the early signs.

Early oral lesions are usually asymptomatic and can present as a small white or red area or an ulceration that does not heal for a prolonged period of time. In the final stages an oral cancer usually becomes symptomatic and widespread, with poor survival prognosis.

Other oral mucosal lesions

There are a number of mucosal lesions associated with smoking including leukoplakia and smokers keratosis.

Oral leukoplakia (white patch) is found six times more frequently in smokers than in non-smokers and is dose related. Smoking cessation or reduction has been found to cause regression or disappearance of the lesion²³.

Smoker's keratosis (known as nicotine stomatitis or smoker's palate) is a common form of keratosis associated with smoking. The prevalence of white patches is not related to the quantity of tobacco consumed but rather to the number of years the person had smoked²⁴. The condition rarely progresses into malignancy; however, it is an indicator of significant epithelial changes in the mouth.

Dental caries

Dental caries is another example of multifactorial disease. The evidence of a causal relationship between smoking between smoking and coronal dental caries is inconclusive, but is suggestive of an association between root caries and smoking. Recent studies have reported an association between environmental tobacco smoke and risk of caries among children^{25,26}. There is insufficient evidence to classify these associations as causal.

Response to dental treatment and healing

Many studies have shown that smoking impairs a patient's response to periodontal therapy, including both simple and complex (such as guided tissue regeneration or osseous grafting) procedures. **Smoking is therefore a contraindication to periodontal therapy^{27,28}.** Ninety percent of cases not responsive to periodontal treatment occur in smokers²¹.

Implant failure

Smoking has been found to be the most significant risk factor for implant failure^{29,30}, which is caused by impaired healing associated with smoking. The failure rate for smokers is 11% compared to 4.6% for non-smokers. Stopping smoking for as short a period as from one week before to eight weeks after the procedure can reduce the failure rate³¹.

Tooth Extractions

Common oral procedures such as tooth extractions, are also known to be affected adversely by smoking. Tobacco smokers have a significantly greater incidence of complications after an extraction, for example alveolar osteitis²⁴.



Stained teeth with tartar build-up in smoker's mouth

Photo courtesy of Dr R Hirsch University of Adelaide

Dental aesthetics

Discolouration of teeth, restorations or dentures is a common complaint of many smokers. Early decay lesions (white spot lesions) and dentine are prone to discolouration; therefore, the discolouration is even more noticeable if prior white spot lesions are present, dentine is exposed or a patient's oral hygiene is lacking.

Halitosis (oral malodour), which often creates serious personal and social embarrassment for the affected person, may also be associated with tobacco use.

Ninety percent of cases not responsive to periodontal treatment occur in smokers²⁵.

Smokers as dental patients

Assessing risk of dental diseases associated with smoking

Tobacco smoking is recognised as the risk factor or the risk indicator for many oral diseases; therefore, **assessment of a smoking habit should become part of every dental examination.** It is important to be aware of the length of the habit (number of years smoked) as well as the severity (number of cigarettes smoked per day).

It is not uncommon for smokers to underestimate their smoking habits when talking about the number of cigarettes they smoke.

Smoking habit assessment is very important as it helps the clinician to:

- understand the patient's present and future risk of dental diseases
- assess the prognosis and possible complications of any dental treatment that may be carried out
- prepare an appropriate treatment plan
- explain to the patient treatment options and the limitations associated with smoking
- keep the patient's expectations at a realistic level.

No dental treatment will be successful and long-lasting if the patient is unaware of his or her role in the maintenance phase of the treatment.

Dentist's role in smoking cessation

Smoking is a complex behavioural and psychological issue that must be dealt with in all aspects of health care including dentistry. Dental professionals should not only be able to diagnose smoking related diseases, but should play an active role in both preventing the initiation of smoking and in smoking cessation.

The 'five As' principle of smoking cessation is being promoted by Quit Australia and can be easily adapted to any dental surgery environment. The self-explanatory flow chart included presents various options for how to deal with smokers.

Patient awareness

The majority of smokers are aware of smoking being a risk factor for many general health problems.

Many smokers are however not aware of the wide range of dental consequences of smoking. It is the role of the dental clinician to bring this issue to patients' attention and ensure that an in-depth explanation is given²⁶. If this information is not given to the patient, it may be perceived as 'supervised neglect'.

In spite of an increased awareness of the adverse effects of smoking on oral health, many patients will continue to be smokers; however, they will better understand the reasons for a possibly less than optimal outcome of dental treatment and prognosis.

Failure of some patients to act on advice on smoking cessation should not discourage the dental clinician to continue providing this type of service to patients. Quitting is a process and not a single event. On average, at least five or six attempts to quit are made by a smoker before being successful, and all attempts need to be perceived as a learning experience for all involved.

Dental clinicians need to be aware of the patient's smoking status and steps undertaken by the patient to quit. They also need to provide the patient with appropriate information on the consequences of smoking for oral health and support the patient in the smoking cessation process.

ACKNOWLEDGMENT

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Further information

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Tobacco Cessation Intervention: How to Communicate with Tobacco Using Patients

Eric E. Stafne, DDS, MSD; Bashar Bakdash, DDS, MPH, MSD

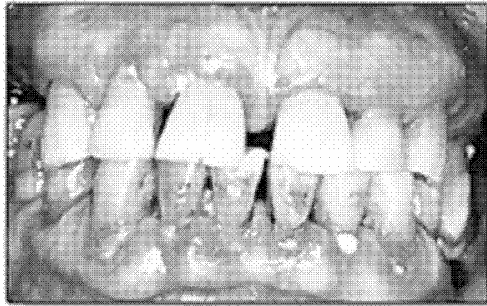


Abstract

Tobacco use is a dental as well as a medical problem. When dental team members assist their patients in becoming tobacco free, they are eliminating a causative/contributing factor for a number of oral conditions including cancer and periodontal diseases. Studies have shown that brief tobacco use cessation interventions in the dental office can be effective in helping many patients to stop using tobacco. Interventions can be optimized through understanding the stage of change the tobacco user is in when an intervention is attempted. Only then can we use the appropriate intervention at the right time. This article discusses and demonstrates a protocol for tobacco cessation interventions that can be used in the dental office.

Keywords: Tobacco cessation, dentistry, stages of change, brief tobacco cessation intervention

Introduction

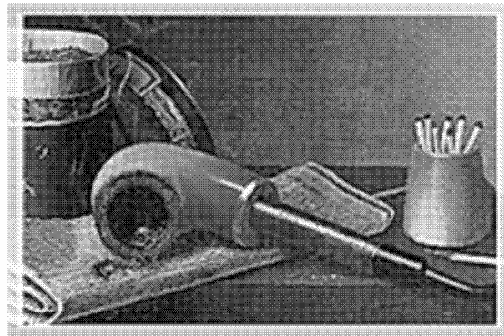


As dental healthcare professionals we are responsible for the oral health and wellness of the people that come to us for care. Tobacco use is one of the most significant risk factors for both oral cancers¹ and periodontal diseases². Numerous studies have shown that both current and former smokers have an increased incidence and severity of periodontal diseases. Smoking also reduces the success of both non-surgical and surgical periodontal therapy.¹ Tobacco use cessation is therefore an important service that dental professionals should be actively involved with in the care of dental patients. Unfortunately, this type of intervention is not a commonplace in many dental practices.³

Studies have shown that all healthcare professionals, including dental office team members, can be effective in helping their patients become tobacco free.⁴ The dental office is a logical place for brief tobacco cessation interventions. Dental office team members are familiar with one-to-one communication and have important skills in interviewing, educating, and motivating. The whole office team should be involved, but in many offices the dental hygienist plays a leading role and serves as coordinator of the program.

Brief tobacco cessation interventions can be offered as an important addition to other preventive and treatment procedures.⁵ Helping patients to stop using tobacco is very satisfying and rewarding. If approached in a very low key, nonjudgmental, caring manner, tobacco users are very appreciative of our help and they are quick to spread the word. Increased referrals are a definite additional benefit.⁶

The purpose of this paper is to demonstrate several ways of communicating with tobacco-using dental patients. The communication strategy will include the use of the Tobacco Use Assessment Form and follow the "5 A's" contained in the National Center Institute (NCI) protocol which are described later in this paper.⁷ Methods to optimize communication with individuals in different stages of change will also be demonstrated and discussed. Although the examples are with smokers, similar approaches can be used with smokeless/spit tobacco users.



There are stages people go through when changing a habit.⁸ These stages of change are precontemplation, contemplation, preparation, action, and maintenance. To be most effective when intervening with tobacco users, it is important to determine their stage of change. This paper will provide examples of communicating with patients who are in three of these stages of change: precontemplation, contemplation, and preparation.

The goal of intervention is to encourage people through the stages and to use the right approach at the right time. Even if tobacco-using patients are unable to quit after the first intervention, the support of dental professionals can help them get further along on the road to terminating their use of tobacco. Many people make a several attempts, sometimes over many years, before they succeed. The dental staff can continually encourage users through several attempts until they succeed. Action followed by relapse is much better than no action at all. Patience is required along with a sensitive manner and a long-term mindset when helping tobacco-using patients to stop smoking, using smokeless tobacco.



Approximately 40% of tobacco users are in the precontemplation stage. In this stage individuals deny having a problem and they have no intention of quitting.

The following is an example of a typical dialog between a dental healthcare provider (DHP) and a smoker (Pt) in the precontemplation stage of change. The patient's responses provide a valuable insight into their feelings about their use of tobacco.

DHP: "Hi Mike, I noticed from your medical/dental questionnaire you smoke two packs of cigarettes a day. How do you feel about your smoking?"

Pt: "I get a lot of pleasure and relaxation from it. In fact, cigarettes are probably the best friends I have."

DHP: "Have you ever had any interest in quitting or tried to quit in the past?"

Pt: "Nah, I love to smoke and I've never wanted to quit. I don't understand why this is any of your concern as a dentist."

DHP: "Well, you told me during your first visit that you wanted to improve the appearance of your teeth. I also want to make sure you understand that smoking is one of the major reasons why you have gum disease and have lost some of your teeth. I am also concerned that smoking will be a factor in continual loss of bone around your remaining teeth."

Pt: "Hmm....I didn't know smoking causes gum disease too, along with everything else."

DHP: "Well it does. The treatment we have planned to reduce your periodontal infection will not be as effective if you continue to smoke. However, in addition to your oral health, I am also concerned about your general health. These are the reasons I asked if you had any interest in quitting."

By the way, if you would like more information about smoking and periodontal disease, you may want to take this pamphlet home and read through it."

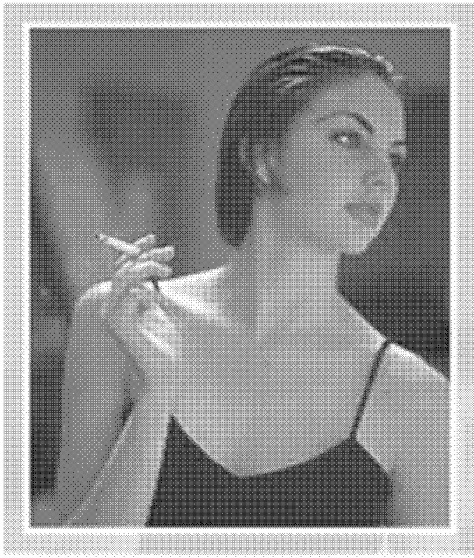
Pt: "No one I know has been able to quit. I just don't think quitting works. For me, smoking is just too enjoyable."

DHP: "I can appreciate that, but you should know today's methods of treatment and the new stop-smoking products and combinations of these aids have improved long-term quit rates. People who couldn't quit in the past have been able to do so now with the help of these newer products and methods."

If you do change your mind about quitting later on, we would be happy to help you or refer you to some quit smoking programs and "help lines." Just let us know. If it is OK with you, we will ask during your next recall appointment if you have changed your mind."

Pt: "Well, maybe some day, but I doubt it. Right now I just don't want to quit."

This example of a brief intervention with a patient in the precontemplation stage of change emphasizes the importance of a low key, nonjudgmental approach. This is especially important with those individuals who are not interested in quitting. Precontemplators are in denial and may be very defensive. The intervention should try to raise their awareness of the effects of tobacco use on their oral health, but not nag or rush them into action. Raising their awareness may help them to think about the benefits of stopping and help to move them to the next stage. You should let them know that you would be willing to help them if they do change their mind. This leaves the door open for intervention later on.



About 40% of tobacco users are in the contemplation stage. In this stage individuals know they have a problem, but they have no commitment to take action now. They may have indefinite plans to quit within 6 months or so.

The following is an example of a typical dialog between a dental healthcare provider and a smoker in the contemplation stage of change. The patient responses reflect a different attitude about their smoking than a patient in the precontemplation stage.

DHP: "Hi Kim, thanks for filling out the Tobacco Use Assessment Form. Looking at your answers I see you are currently smoking a pack and a half a day and that you are interested in quitting."

Pt: "I would like to quit. Smoking is not doing me any good that's for sure."

DHP: "I'm glad to hear you are interested in quitting. Why do you want to quit?"

Pt: "Well, I have a two-year old daughter and I've read about the effect secondhand smoke could have on her and, of course, I want to be a good role model too. I'm also a little concerned about my own health. My dad was a smoker and now he has emphysema real bad."

DHP: "Those are all good reasons! How long have you been smoking a pack and a half a day?"

Pt: "Oh, for about 15 years."

DHP: "You indicated on the assessment form your first cigarette is fairly soon after you wake up?"

Pt: "It is the first thing I do."

DHP: "Have you tried to quit in the past?"

Pt: "Yes, I have tried a couple of times. When I was pregnant and the last time I tried to quit was about six months ago."

DHP: "What strategy did you use to quit?"

Pt: "I did it cold turkey. I didn't want to hurt my child when I was pregnant and I decided I didn't want cigarettes to control me for the rest of my life."

DHP: "What was the longest time you went tobacco free?"

Pt: "Almost 2 months."

DHP: "What got you started smoking again?"

Pt: "A very stressful project at work. That's what worries me. I don't have much confidence in myself as far as quitting is concerned and I'm afraid I will just fail again."

DHP: "So you want to quit, you have some very good reasons to quit, but you are afraid you can't succeed."

Pt: "That's right, I know I should quit, but I know how difficult it was to quit before."

DHP: "Well I'm encouraged you have tried a couple times and you were able to quit for as long as two months. That is very positive. It's rather common for a lot of smokers to have several quit attempts before they succeed. If you are willing to keep trying, your next one may be successful"

Pt: "I certainly hope so."

DHP: "Let's see now, our oral exam revealed you have periodontal disease. As you recall, I explained that process and recommended treatment for you."

We also discussed the fact that smoking is a major factor in the onset and progression of this disease. The best thing you could do to improve the results of your treatment and give you the best chance of long-term oral health would be for you to become tobacco-free."

Pt: "Well I sure want to keep my teeth. That is another good reason for me to quit, but I don't know the best way to go about it."

DHP: “Many people who quit smoking don’t do enough planning before their quit date. They fail to plan for how they will cope with the triggers, or cues to their cigarette use. Furthermore, many people don’t look at the daily routines and rituals they will need to change during this period of time.

If you are interested, I will give you some pamphlets you can read and think about. They include information on coping strategies, withdrawal symptoms, stress management, and helpful tips on quitting.”

You might also consider some group or individual tobacco cessation programs and helplines. I can give you a list of local programs with their phone numbers so you can contact them if you want more information, or help in your quit attempt.”

Pt: “I would like to look at the information. I’m not so sure about the group programs. I might consider the helpline approach and possibly a more intense counseling program later, depending on how I do.”

DHP: “Do you know anyone who has used any of the stop smoking aids like the nicotine gum or patch, or the pill Zyban?”

Pt: “I do know a co-worker that was able to quit using a nicotine patch.”

DHP: “That individual may be a good person to support you in your quit attempt. A nicotine replacement product, or a combination of nicotine replacement products would be helpful in your case. Let’s plan to see you for a series of treatment appointments. After you have had a chance to look at the self-help pamphlets and think about your quit plans, we can talk about the stop smoking pharmaceutical options. I will give you some printed material on these products.

If it is OK with you, I would like to keep in touch with you to see how you are doing.”

Pt: “Good, I will think about what you have said. I don’t think I am quite ready to quit yet, but this information will help me with the decision. I really appreciate your help and concern.”

This example of a brief intervention with a patient in the contemplation stage of change also includes raising their awareness of the general and oral health benefits of a tobacco free lifestyle. One can assist patients by providing self-help materials and a list of local programs helps them to think about and plan for their next quit attempt. Helping patients to gain confidence can be done by being positive about their previous attempts and letting them know it takes many people a number of quit attempts before they are successful.

The contemplator is ambivalent and not ready to set a quit date now, but a positive brief intervention may help him or her to move on to the next stage. Contemplators must become more and more aware of the disadvantages of the old behavior and the advantages of change. Letting the patient know you are supportive and want to see them succeed can be very important.

Approximately 20% of users are in the preparation for action stage. The individual in this stage is ready to quit within the next month, but they have not necessarily resolved his or her ambivalence. These individuals may have tried to quit a number of times in the past.

The following is an example of a typical dialog between a dental healthcare provider and a smoker in the preparation stage of change. The patient responses reflect even more concern about their use of tobacco than patients in either of the first two stages.

DHP: “Hi Mike, thanks for filling out the Tobacco Use Assessment Form. Looking at your answers I see you are currently smoking a little over a half a pack of cigarettes a day. You said you would very much like to quit. How long have you been using a half a pack?”

Pt: “I have smoked 10 to 15 cigarettes a day for ummmm, about the last 9 months. Before that I smoked a pack a day for over 10 years! I have tried hard to cut down more, but can’t make it below 10 a day.”

DHP: “Your questionnaire indicates your first cigarette of the day is fairly soon after you wake up.”

Pt: "Yeah, when that first cup of coffee is in one hand, a cigarette is in the other."

DHP: "Well it is good you have been able to cut down to half of what you were smoking. Good for you! That is a great step in the right direction. What are your reasons for wanting to quit completely?"

Pt: "I'm a bit worried about shortness of breath and lack of energy. At one time I got fairly regular exercise and felt much better about myself. Quitting smoking might help my breathing and energy."

DHP: "I think you are right and those are good reasons. As we discussed before, smoking has also contributed to your periodontal disease."

Pt: "Just another reason to quit!"

DHP: "Have you tried to quit in the past?"

Pt: "Sure....many times. At least 4 or 5 fairly serious attempts."

DHP: "When was the last attempt?"

Pt: "About two months ago."

DHP: "How long were you tobacco free?"

Pt: "I never got past the first week."

DHP: "What quit method did you use?"

Pt: "I just quit. I told myself I had to do it."

DHP: "Did you have problems during the first week?"

Pt: "Oh I was a mess. I was terribly irritable and the cravings were awful."

DHP: "Is that what got you started again?"

Pt: "Yes, I just had to have one cigarette and I was up to 15 a day in no time."

DHP: "I'm encouraged you have tried a number of times and succeeded, if only for a few days. That is very positive. It takes many people a number of quit attempts before they succeed. Are you willing to try again and set a quit date?"

Pt: "I really do want to try again fairly soon. I saw that poster in your reception room with the list of quit smoking programs, but I really don't think that approach is for me. I think I would like to quit on my own. Can you make any suggestions?"

DHP: "Sure. Many people who quit smoking don't do enough planning before their quit date. Many don't plan for how they will cope with the triggers or cues to their cigarette use, and many don't look at the daily routines and rituals they will need to change during this period of time. I will give you some pamphlets you can read

and think about. They include coping strategies, information about withdrawal symptoms, stress management, and other helpful quit tips.

You need to get back to some regular exercise but start slowly. I also think a nicotine patch might help to reduce the cravings and other withdrawal symptoms you have had in the past. Then you can concentrate on changing some of the daily routines that are triggers to your smoking. The pamphlets will give you some other suggestions.

Your health insurance might cover the cost of the nicotine patch therapy, but they require that it has to be a prescribed medication, even though you can get patches over the counter without a prescription. I will write you one and we will go over how to use the patches at your next appointment. What would be a good quit date for you?"

Pt: "I will look at the pamphlets and do some planning, but I would like to quit fairly soon. You know my birthday is in two weeks; that could be a good present to myself!"

DHP: "Great! That sounds like a good plan. We have an appointment next week and we can talk a little more about using the nicotine patch and your exact quit date. After you get started, we will follow-up to see how things are going for you."

Pt: "I am really anxious to get going and make it work. I really appreciate your help."

This example of a brief intervention with a patient in the preparation stage also shows a positive approach to the previous quit attempts, even though this smoker was successful for only a short period. Giving self-help materials and recommending that they work on a "quit plan" is an important part of this communication. The patient committing to a "quit date" and our recommending pharmaceutical aids helps move the attempt forward.⁹ Our willingness to follow-up and support the tobacco user's progress may encourage them to continue with their plan until they succeed.



Individuals in the action stage have stopped using tobacco. They may also have started an exercise program, become more aware of eating balanced meals, and have made other changes in their daily routines. They are highly susceptible to relapse.

The maintenance stage is a long, ongoing process and can last 6 months to a lifetime. The new habit has become a part of daily living, but the challenges of overconfidence and daily temptation still remain.

Relapse may follow these stages and than individuals may go through the cycle again. The majority of those who relapse do not go all the way back to precontemplation.



In order to set up a tobacco intervention program in the dental office a number of steps should be taken including: organizing the office team, a tobacco free office environment, patient records, codes and procedures, and patient education

materials. For more information relevant to tobacco cessation activities in the dental office, please refer to: www.umn.edu/periodontology/tobacco/. This web site was established to provide detailed information relevant to the didactic and clinical components, including information for dental professionals, patients, and the public at large. The web site also includes tobacco-related resources and online links to a number of education, professional, and governmental organizations which are involved in tobacco control, cessation, and related activities. Such links are of interest for healthcare professionals and the public. Simple, brief tobacco intervention can easily be part of the routine office schedule.

The National Center Institute's (NCI) protocol for office team approach involves the 5 A's:

1. **ASK** every patient whether he/she uses tobacco,
2. **ADVISE** users about the risk of tobacco use and benefits of a tobacco-free lifestyle,
3. **ASSESS** willingness to make a quit attempt,
4. **ASSIST** them in quitting, and
5. **ARRANGE** for follow-up.

The Tobacco Use Assessment form and the Brief Tobacco Cessation Intervention Form are used for session intervention. A copy of these records should be kept in a separate file for patient follow-up and outcome assessment. Tobacco use chart stickers can also be used to identify patient status. Follow-up after the initial intervention is important to show our patients their dental office is sincere and interested in their well being. Again, these tobacco cessation interventions can be brief, simple, and do not need to disrupt the practice routine.

The effects of tobacco use on the oral cavity and on dental treatment should be of great concern to the dental profession. As oral healthcare professionals, we have the skills necessary and the opportunity to help our patients progress through the stages of changing a dependence on tobacco use.

Tobacco use cessation interventions are not a routine in many offices. Adding this service to the list of services the dental office provides can lead to improved patient-office relationships and can be very satisfying. By assisting our patients with tobacco cessation, we can improve the outcome of dental treatment and at the same time add years and quality to our patients' lives.

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Online Resources

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Appendix I: Study 4 Pre-Intervention, Post-Intervention and Follow Up

Questionnaires

1. Pre-Intervention Questionnaire

Assisting Patients to Quit Smoking Program – Pre-Intervention Questionnaire
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1. Please enter the code below so your answers can be matched anonymously with the second questionnaire. *Without this code, your responses cannot be collated.*

The code comprises the first three letters of your mother's maiden name, followed by the day of the month you were born (eg. if your mother's maiden name was Robson, and you were born on the 13th of December, please enter ROB13).

_ _ _ : _ _

2. Assisting patients to quit smoking is ...

a)
 Very difficult Difficult Neutral Easy Very easy

b)
 Very impossible Impossible Neutral Possible Very possible

3. I am _____ that I can try to assist patients to quit smoking

 Very unconfident Unconfident Neutral Confident Very confident

4. Please indicate your agreement for the following statements ...

	Strongly disagree		Neutral		Strongly agree
1. I intend to assist patients to quit smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel I know how to counsel smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel I know enough about the causes of smoking to carry out my role when working with smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel I know enough about addiction to carry out my role when working with smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel I can appropriately advise my patients about smoking and its effects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel I have a working knowledge of smoking and smoking-related problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel that my patients believe I have the right to ask them questions about smoking when necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I feel I have a clear idea of my responsibilities in helping smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I feel I have the right to ask a patient for any information that is relevant to their smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I feel I have the right to ask patients questions about their smoking when necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do the following two issues discourage you from trying to assist patients to quit smoking?

	Not at all			Very much	
1. If the patient is not receptive to discussing smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Needing a good rapport with the patient	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

We understand that dental hygienists are very busy, and don't expect too much of your time to be devoted to assisting patients who smoke. We would just like to get an idea of the most popular strategies used, and how often they are used.

How many patients do you estimate you saw in the last week you worked? _____

How many patients who you think smoke do you estimate you saw in the last week you worked? _____

In the last week you worked, with how many patients do you estimate you performed any intervention related to smoking (e.g. discussing smoking, advising, referring)? _____

How many times in the last week you worked do you estimate you ...

1. Asked a patient if they smoke? _____
2. Ascertained a patient's smoking status (e.g. by checking their history or looking for signs of smoking)? _____
3. Advised a patient to quit smoking? _____
4. Advised a patient to cut down their smoking? _____
5. Discussed the dental health effects of smoking with a patient? _____
6. Showed a patient the effect smoking has had in their mouth? _____
7. Showed a patient photos of possible dental effects of smoking? _____
8. Set a quit smoking date with a patient? _____
9. Gave a patient a Quit brochure or pack? _____
10. Discussed strategies/options for quitting smoking with a patient? _____
11. Referred a patient to the Quitline? _____
12. Referred a patient to their GP for their smoking? _____
13. Referred a patient to a pharmacist for their smoking? _____
14. Offered or provided follow up for a patient's smoking? _____

Do you have any comments on using or not using any of these strategies in the last week?

Thank you for filling out this questionnaire

2. Post-Intervention Questionnaire

Assisting Patients to Quit Smoking Program – Post-Intervention Questionnaire

1. As on the previous questionnaire, please enter the code below so your answers can be matched anonymously. *Without this code, your responses cannot be collated.*

The code comprises the first three letters of your mother's maiden name, followed by the day of the month you were born (eg. if your mother's maiden name was Robson, and you were born on the 13th of December, please enter ROB13).

— — — : — —

2. How helpful did you find the program?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very helpful	Helpful	Neutral	Unhelpful	Very unhelpful

2. Assisting patients to quit smoking is ...

a) Very difficult Difficult Neutral Easy Very easy

b) Very impossible Impossible Neutral Possible Very possible

3. I am _____ that I can try to assist patients to quit smoking

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Very unconfident	Unconfident	Neutral	Confident	Very confident

4. Please indicate your agreement for the following statements ...

	Strongly disagree		Neutral		Strongly agree
1. I intend to assist patients to quit smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel I know how to counsel smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel I know enough about the causes of smoking to carry out my role when working with smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel I know enough about addiction to carry out my role when working with smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel I can appropriately advise my patients about smoking and its effects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel I have a working knowledge of smoking and smoking-related problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel that my patients believe I have the right to ask them questions about smoking when necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I feel I have a clear idea of my responsibilities in helping smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I feel I have the right to ask a patient for any information that is relevant to their smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I feel I have the right to ask patients questions about their smoking when necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do the following two issues discourage you from trying to assist patients to quit smoking?

Not at all

Very much

- | | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. If the patient is not receptive to discussing smoking | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Needing a good rapport with the patient | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

How many patients do you estimate you saw in the last week you worked? _____

How many patients who you think smoke do you estimate you saw in the last week you worked? _____

In the last week you worked, with how many patients do you estimate you performed any intervention related to smoking (e.g. discussing smoking, advising, referring)? _____

How many times in the last week you worked do you estimate you ...

1. Asked a patient if they smoke? _____
2. Ascertained a patient's smoking status (e.g. by checking their history or looking for signs of smoking)? _____
3. Advised a patient to quit smoking? _____
4. Advised a patient to cut down their smoking? _____
5. Discussed the dental health effects of smoking with a patient? _____
6. Showed a patient the effect smoking has had in their mouth? _____
7. Showed a patient photos of possible dental effects of smoking? _____
8. Set a quit smoking date with a patient? _____
9. Gave a patient a Quit brochure or pack? _____
10. Discussed strategies/options for quitting smoking with a patient? _____
11. Referred a patient to the Quitline? _____
12. Referred a patient to their GP for their smoking? _____
13. Referred a patient to a pharmacist for their smoking? _____
14. Offered or provided follow up for a patient's smoking? _____

At the beginning of the program, we gave you 30 'Smoking and your mouth' pamphlets to give out to patients. We'd be grateful to get a measure of how often dental hygienists give these pamphlets out, and how quickly dental hygienists will go through them. Could you please take the time to count how many pamphlets you have left?

Number of pamphlets left: _____

Do you have any comments on using or not using any of these strategies in the last week?

Do you have any comments about what was helpful or not helpful about the program, or any suggestions for how to run it better?

Thank you for filling out this questionnaire!
Please return it in the reply paid envelope provided

3. Follow Up Questionnaire

Assisting Patients to Quit Smoking Program – Follow Up Questionnaire

1. Please enter the code below so your answers can be matched anonymously with the second questionnaire. *Without this code, your responses cannot be collated.*

The code comprises the first three letters of your mother's maiden name, followed by the day of the month you were born (eg. if your mother's maiden name was Robson, and you were born on the 13th of December, please enter ROB13).

— — — : — —

2. Assisting patients to quit smoking is ...

a) Very difficult Difficult Neutral Easy Very easy

b) Very impossible Impossible Neutral Possible Very possible

3. I am _____ that I can try to assist patients to quit smoking

Very unconfident Unconfident Neutral Confident Very confident

4. Please indicate your agreement for the following statements ...

	Strongly disagree		Neutral		Strongly agree
1. I intend to assist patients to quit smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. I feel I know how to counsel smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. I feel I know enough about the causes of smoking to carry out my role when working with smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. I feel I know enough about addiction to carry out my role when working with smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. I feel I can appropriately advise my patients about smoking and its effects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. I feel I have a working knowledge of smoking and smoking-related problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. I feel that my patients believe I have the right to ask them questions about smoking when necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. I feel I have a clear idea of my responsibilities in helping smokers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. I feel I have the right to ask a patient for any information that is relevant to their smoking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. I feel I have the right to ask patients questions about their smoking when necessary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent do the following two issues discourage you from trying to assist patients to quit smoking?

Not at all

Very much

1. If the patient is not receptive to discussing smoking

2. Needing a good rapport with the patient

How many patients do you estimate you saw in the last week you worked? _____

How many patients who you think smoke do you estimate you saw in the last week you worked? _____

In the last week you worked, with how many patients do you estimate you performed any intervention related to smoking (e.g. discussing smoking, advising, referring)? _____

How many times in the last week you worked do you estimate you ...

- 1. Asked a patient if they smoke? _____
- 2. Ascertained a patient's smoking status (e.g. by checking their history or looking for signs of smoking)? _____
- 3. Advised a patient to quit smoking? _____
- 4. Advised a patient to cut down their smoking? _____
- 5. Discussed the dental health effects of smoking with a patient? _____
- 6. Showed a patient the effect smoking has had in their mouth? _____
- 7. Showed a patient photos of possible dental effects of smoking? _____
- 8. Set a quit smoking date with a patient? _____
- 9. Gave a patient a Quit brochure or pack? _____
- 10. Discussed strategies/options for quitting smoking with a patient? _____
- 11. Referred a patient to the Quitline? _____
- 12. Referred a patient to their GP for their smoking? _____
- 13. Referred a patient to a pharmacist for their smoking? _____
- 14. Offered or provided follow up for a patient's smoking? _____

Do you have any comments on using or not using any of these strategies in the last week?

Do you have any comments about the usefulness of the program, or about whether or not it has had a long term impact on your work?

Thank you for filling out this questionnaire

Appendix J: Quit Mouth Cancer Campaign Fact Sheet and Selected Newspaper

Articles

Quit Mouth Cancer Campaign Fact Sheet

The graphic warnings

From 1 March 2006, all tobacco products manufactured or imported have graphic warning labels on packages. Each pack has a warning message covering 30 percent of the front and 90 percent of the back with the same graphic, a corresponding explanatory message, the Quitline logo and phone number. Seven new warnings were introduced in March 2006 and a second set will be introduced from 1 November 2006. One of the new health warnings is about **mouth and throat cancer** caused by smoking. It features an image of a mouth which has been affected by cancer. The text on the pack explains briefly how smoking can lead to mouth and throat cancer. Below and right are the graphics for the front and back of the pack.



The National Health Warnings Campaign

State and territory smoking and health programs have collaborated to mount a new national campaign featuring the graphic health warnings in a series of television advertisements.

The first was called 'Amputation' and was a dramatisation of the warning about peripheral vascular disease. The second advertisement is called 'Mouth Cancer' and depicts a middle aged woman with mouth and throat cancer caused by her smoking.

The concept for the media campaign was tested with smokers of various ages and from different backgrounds. They found the proposed scene with a woman with mouth and throat cancer talking to have a strong impact, is potentially motivating and a powerful way of conveying the consequences of smoking. The concept also showed to have the potential to strengthen the impact of the health warning on cigarette packs in a personally relevant manner by giving a face to the disease.

The first phase of the National Health Warning Campaign was launched on Monday 8 May and the second phase will be launched on Wednesday 26 July and will run to the end of August in some states. The 'Mouth Cancer' advertisement is graphic but realistic. It has been given a PG (parental guidance) rating. This means that, on weekdays, it can be shown from 8.30am to 4.00pm and from 7.00pm to 6.00am. On weekends, it can be shown from 12am to 6am and after 10am.

Campaign support for smokers

The 'Mouth Cancer' advertisement aims to motivate and remind smokers to quit. An important part of the campaign is making sure that smokers know they can get professional help to quit by phoning the Quitline on 13 QUIT (137 848) for the cost of a local call. It is a confidential and non-judgmental service run by specially trained professionals. Quitline advisers provide callers with information on any aspect of giving up smoking. The Quitline sends free self-help materials and offers a free telephone call-back support service to help smokers through the quitting process.

Q&A on the campaign

Who is behind this campaign and who has paid for it?

Nationally, the campaign partners are the state and territory smoking and health programs. The two the lead agencies are Quit Victoria and the Cancer Institute NSW, supported by National Heart Foundation, Queensland Health, Quit SA, NT Health and Quit Tasmania.

Is the woman in the advertisement an actor?

Yes. The advertisement was produced by The Campaign Palace and filmed at Ryde Hospital in Sydney.

What disease does the woman in the advertisement have?

She has mouth and throat cancer (see below for more information). This is only one of a broad range of diseases caused by smoking. Scientists are continuing to find new evidence of the enormous impact that smoking has on the human body. See Appendix 2 for a current list of the diseases known to be caused by active and passive smoking. The scientist who established the link between smoking and lung cancer more than fifty years ago, Sir Richard Doll, commented: "That so many diseases – major and minor – should be related to smoking is one of the most astonishing findings of medical research ... less astonishing perhaps than the fact that so many people have ignored it."

Isn't she too young to be shown suffering from a smoking-related disease?

No. It is not only older people who get sick because of their smoking. Around half of people who smoke throughout their lives will die early from diseases caused by smoking. In Australia, one-third of these deaths occur in middle age.

These diseases don't just appear out of nowhere sometime later in life. Every cigarette contributes to the process. Diseases of the mouth and throat can be developing for years before a diagnosis is made. A sore in the mouth that does not heal, persistent swelling, a lump in the mouth or thickening in the mouth are just some of the early signs of mouth cancer that can become crippling or fatal.

Do media campaigns actually work in getting smokers to quit?

Yes. Research has shown that mass media campaigns are one of the most effective means to reduce smoking, especially when they offer smokers services and resources to help them quit.

Evaluation research of Australia's National Tobacco Campaign ('Every cigarette is doing you damage') shows that after the first six months of the mass media campaign smoking rates in Australia dropped by 1.4 percent (representing 190,000 fewer smokers). An economic evaluation has shown that the campaign was excellent value for money and resulted in significant savings to the health system.

We also have early results which show that the first wave of the National Health Warnings Campaign, the 'Amputation' ad, has proved effective in encouraging smokers to quit. The response to the campaign in calls to the Quitline was extremely positive, with calls to the Quitline increasing by 85% in the four weeks following the launch of the campaign on May 8, when compared to calls nationally four weeks prior to the launch.

Why does this campaign use such an alarming scene?

Disability, disfigurement and early death due to smoking is real and cannot be ignored. The campaign aims to evoke an emotional response in smokers strong enough to help them quit. Campaigns that show people the consequences of their behaviour really do work.

Smokers already know that smoking is bad for them - they've been told that for years - aren't you just telling them something they already know?

While people are generally aware that tobacco smoking is harmful, many still underestimate the extent of the danger relative to other lifestyle risks. Very few smokers are able to accurately estimate their chances of dying in middle age. Most are able to name only a handful of the numerous diseases caused by smoking. Smokers also have little understanding of how tobacco-related illnesses could affect the quality of their lives.

What exactly is mouth and throat cancer?

Cancer is a disease of the body's cells. Our bodies regularly produce new cells to repair after injury, for growth and to replace old worn-out cells. This process is controlled by the DNA of the cells. Research suggests that chemicals in tobacco damage the DNA of cells, interfering with the cells' instructions for repair and growth. These damaged cells may multiply and develop into a malignant (cancerous) or benign (non-cancerous) tumour.

Any part of the mouth, nose and throat can be affected by cancer. It may start in the cells that form the lining of the mouth, nose, throat or voice box or in the thyroid or salivary glands. If a cancer that develops in the mouth, nose or throat is left untreated, it can spread to surrounding tissue and other parts of the body. Mouth and throat cancers generally spread to other parts of the body slowly. Advanced cancers of the mouth and throat can cause chronic pain, loss of function and disfigurement.

Can smoking really lead to mouth and throat cancer?

Yes. The mouth and throat are used for breathing, talking, eating, chewing and swallowing. People who smoke expose their mouth to the 4000 chemicals found in tobacco smoke.

Smoking is a major cause of cancer affecting the mouth (oral cavity) and the throat (pharynx). Cancers of the mouth include tumours of the cheek, gum, tongue, lip, and the roof, 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 eg. the base (back third) of the tongue, tonsil, soft palate, the walls of the throat.

Mouth and throat cancers attributed to tobacco use are 52% men and 42% women. The risk of developing mouth cancer increases with the length of time a person has smoked and the amount they smoke.

Smoking is not the only thing that causes mouth and throat cancer, is it?

No, heavy alcohol use is also a major risk factor for mouth and throat cancer and when combined, tobacco and alcohol account for most cases of mouth and throat cancer.

Cancer of the lip may also be caused by over-exposure to ultraviolet radiation from the sun and cancers of the nose have been linked to inhaling chemicals such as hardwood dusts.

What are the symptoms?

There are a number of symptoms that may indicate cancer of the mouth or throat however these can also be caused by other less serious problems. If any of the following symptoms persist, they could indicate possible cancer of the mouth and throat:

- a sore in the mouth that does not heal
- swelling or a lump in the mouth or neck
- persistent blocked nose, earache, cough or sore throat
- white patch on tongue, gum or lining of mouth (leukoplakia)
- red patch on tongue, gum or lining of mouth (erythroplakia)
- blood stained mucus or sputum
- changes in voice such as hoarseness
- pain in mouth or throat
- difficulty moving tongue, jaw, chewing or swallowing
- swollen lymph nodes in the neck

How is mouth and throat cancer treated and can it be cured?

Treatment of mouth and throat cancer may involve surgery to remove the cancer, radiotherapy, chemotherapy or a combination of all three treatments. Cancers in the mouth are generally treated with surgery, and may involved radiotherapy with or without chemotherapy after the operation. Cancers of the throat and voice box may be treated by surgery or radiotherapy with or without chemotherapy.

The aim of the surgery is to remove the cancer and in some cases where the cancer is detected early, only a small area may need to be removed.

After diagnoses with mouth or throat cancer, 53% of men and 61% of women in NSW are still alive after five years. Early detection significantly increases the chances of survival.

How much mouth and throat cancer is caused by smoking?

Someone who has ever smoked is up to nine times as likely as a non-smoker to develop one of these cancers. Smokers of one pack a day are 16 times more likely than non-smokers to develop cancer of the larynx.

Enough to make you very sick; Shocking images to turn smokers off their habit

By Robyn Powell

2 April 2006

Canberra Times

p. 8

(c) 2006 The Canberra Times

These stomach-turning images are part of the Government Health Authority's latest shock-and-gore campaign to turn smokers off their deadly habit. The graphic warnings displayed on cigarette packets and television advertisements are already encouraging smokers to quit, according to ACT anti-smoking groups. A media campaign featuring the graphic images began in mid-February, and from March 1 all tobacco products manufactured or imported into Australia were required to be printed with the new health warnings' images. The set of 14 health warnings, including a foot with gangrene and mouth with cancer, cover 30 per cent of the front and 90 per cent of the back of cigarette packs. ACT Cancer Council Quit coordinator Patricia Jones said the measures had already begun to have an impact, particularly the television advertisements.

"It always makes a difference, how much difference it has made is hard to quantify, but I run quit courses and seminars and people are beginning to comment already," she said. Ms Jones said the campaign's success in Canada, and market research, suggested using external images such as mouth cancer and gangrene were most effective. It is a view shared by Canberra Action on Smoking and Health president Dr Alan Shroot, who said the graphic images acted as an effective deterrent. A similar campaign run in Canada contributed to a 16 per cent decrease in daily smoking over five years. Canadian research also indicated that repulsion generated by the images was linked to attempts by smokers to quit. The "disgust factor" generated by the campaign, including images of mouth cancer, eye disease, and gangrene, were also expected to be a turn-off, and encourage young smokers to drop the habit. Dr Shroot said the health warning campaign was long overdue. "It has taken us too long to get to this stage ... it is because of the reluctance of government and the power of the tobacco industry lobby groups," he said. From December 1 this year, all ACT public places that are enclosed, including restaurants, bars, nightclubs and gaming areas, will be smoke-free. The ACT was the first jurisdiction in the country to bring in the total smoking ban. The effectiveness of the latest campaign will be evaluated through two national telephone surveys, this weekend and again in July. A component of the annual National Tobacco Survey in November this year will address health warnings.

Smokes covers morally wrong - Gago

Michael Owen

1 June 2006

The Advertiser

p. 7

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THE South Australian Minister for Substance Abuse will write to the wife of SANFL chief executive, Leigh Whicker, urging her to withdraw her "morally repugnant" cigarette packet sleeves.

The Australian Medical Association also called for the sleeves, marketed as "Packet Jackets", to be banned.

In a written statement yesterday, Mr Whicker stressed he had no involvement with the product and said: "I am personally opposed to smoking, as is the SANFL."

Substance Abuse Minister Gail Gago told The Advertiser the State Government would work closely with the Federal Government on drafting legislation to outlaw the sleeves, used by smokers to conceal graphic warnings on packets about the dangers of smoking.

The controversy erupted after The Advertiser revealed Annie Whicker was the businesswoman behind the Crows and Power-coloured sleeves which have angered the clubs. The products also were criticised by the AFL and Quit SA.

The AFL said it was powerless to stop the sleeves because no club names nor logos were used.

Federal Parliamentary Secretary for Health and Ageing Christopher Pyne instructed his department to draft legislation for introduction in the August sitting of Parliament to outlaw the sleeves. An amendment would be moved to the Tobacco Advertising Prohibition Act to either ban the covers or require them to include the graphic anti-smoking pictures.

"It would be irresponsible for the Government to allow entrepreneurial activity such as this to stop consumers getting messages about the dangers of smoking," he said.

Ms Gago said the issue needed to be addressed in a nationally co-ordinated way.

"It is morally repugnant," she said. "Using football colours and images is trying to target young men and boys with cigarette marketing."

AMA state president Dr Christopher Cain said Mrs Whicker should be "as accountable as the cigarette companies" for the harmful effects of smoking. He accused her of seeking to profit "from an activity that causes widespread disease, disability, suffering and death".

Mrs Whicker said her products would stay. "Of course, they will be," she said.

Other newspaper articles:

Graphic quit images

Inga Gilchrist

30 November 2005

MX (Australia)

1 - Melbourne

p. 5

Packet jackets go

24 June 2006

The Advertiser

p. 21

SANFL chief's wife in smoking battle

Michael Owen

31 May 2006

The Advertiser

p. 1

Smoker warning cover-up

Evonne Barry

1 May 2006

MX (Australia)

1 - Melbourne

9