A Practical Guide to Tobacco Cessation in Dental Offices

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Abstract

Tobacco use is an important risk factor for advanced periodontitis, poor response to periodontal therapy, oral neoplasms, and dental implant failure. Given the effect of tobacco use on oral health, the dental office may be an ideal place for tobacco cessation intervention, especially since a large proportion of smokers visit their dentist on a regular basis. This paper reviews various tobacco cessation strategies for the dental office and provides practical information on assessing patients' readiness to quit and choosing appropriate tobacco cessation interventions.

MeSH Key Words: *counselling; dentists; tobacco use cessation; tobacco use disorder/drug therapy*

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There is overwhelming clinical and epidemiological evidence of the adverse effects of tobacco on human health.[1,2] In Canada, 190,000 people die each year, and of these deaths, some 40,000 are attributed to tobacco use.[3] It is estimated that smoking is directly related to 30% of heart disease cases, 85% of lung cancers, and 85% of chronic obstructive pulmonary disease.[3] Besides this tremendous but preventable loss of human life, the financial burden incurred in treating illnesses caused by tobacco use is staggering. Tobacco use has also been associated with necrotizing ulcerative gingivitis,[4] advanced chronic periodontitis,[4] and increased risk of oral neoplasm.[5] Response to periodontal treatment is adversely affected by tobacco use, and smokers lose more teeth at an earlier age than non-smokers. A significantly higher rate of dental implant failure has been reported in smokers compared to non-smokers.[6]

Despite public knowledge of morbidity caused by tobacco use, 25-30% of Canadian and U.S. citizens continue to use tobacco.[3,7] There are indications that the incidence of new, young smokers, especially females, is on the rise.[8] The publicity caused by high-profile court cases in the United States has made people more aware of the dangers of smoking, and covert attempts by tobacco companies to hide the deleterious effects of smoking have further sensitized the public and health care professionals to the issue.

Counselling by health professionals is an effective method in guiding patients toward smoking cessation.[9] A large proportion of the general public, including smokers, visit the dental office regularly.[10,11] Thus, it seems imperative that dental offices should be involved in smoking cessation efforts.

This paper discusses various issues surrounding tobacco use and provides a step-by-step approach that dental offices can use to guide patients in eliminating tobacco use.

Nicotine Dependency

Nicotine addiction should be treated as a chronic disease. The majority of patients who make an initial attempt to quit will continue to use tobacco and to cycle through periods of relapse and remission.[12] Tobacco dependency is a serious addiction, a complex biopsychosocial phenomenon in which genetics, pharmacology, psychology, and environment interact to produce chronic and tenacious drug use. Unless the biophysiological, behavioural, spiritual, and social components of this dependency are addressed, the health care professional will be frustrated in counselling patients addicted to tobacco. The link between environmental stimuli and the quick and pleasurable effect of smoking makes quitting very difficult. The clinician must address the patient's fear of withdrawal symptoms. Psychological and emotional triggers are very much connected with the smoking habit, and therefore patients must be counselled to cope with moments of temptation through the development of alternative strategies. The smoker's self-image and socialization behaviour must be changed to accommodate the new self-awareness of a smoke-free person.[12]

Clinical Tobacco Intervention in the Dental Office

Create a Smoke-Free Environment

Declare the dental office a smoke-free environment. Let patients know about this policy by placing "no smoking"

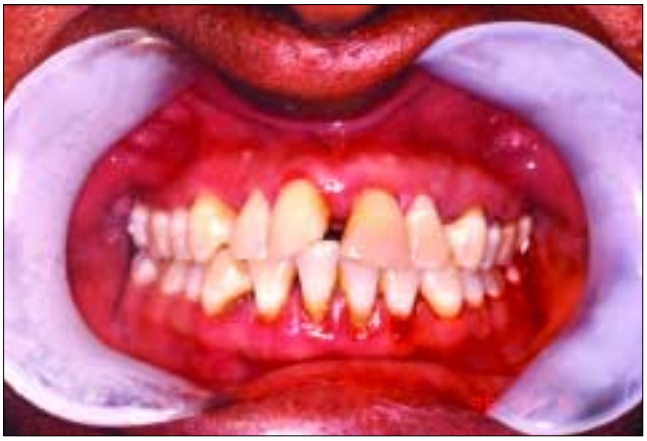

Fig. 1: *Periodontium of a smoker. Note the splaying of maxillary anterior teeth due to advanced bone loss caused by smoking and periodontitis.*

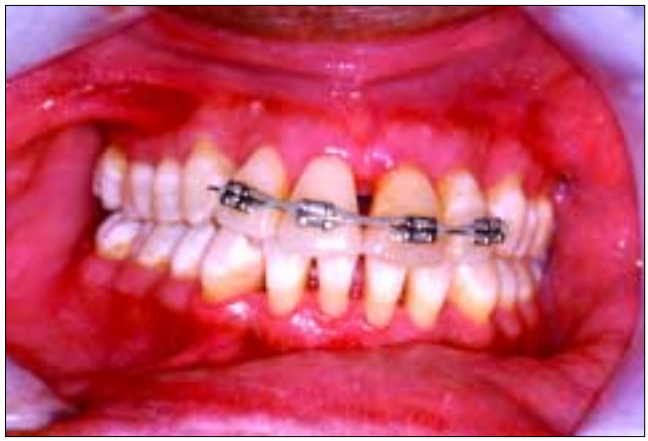

Fig. 2: *Patient from* ***Fig. 1*** *one year following smoking cessation, non-surgical periodontal therapy and adjunctive orthodontic treatment.*

stickers in conspicuous locations throughout the office. Make smoking-cessation literature available in the waiting room. Displaying pictures of patients before and after tobacco cessation treatment is a great motivator (**Figs. 1** and **2**).

All dental staff should attend an accredited tobacco cessation program. These programs are available through local health units as well as through universities as continuing education courses. In Ontario, they are available through the Ontario Dental Association (ODA) and the Ontario Medical Association (OMA). Staff training will ensure that tobacco intervention strategies are standardized and that patients get the same message from all personnel. If one member of the staff is trained, then other staff can be trained in-house.

Any dental staff member using tobacco should be helped and encouraged to quit. A member who smokes will have no credibility in advising patients.

Patient Assessment

Medical and dental history charts should include questions about tobacco use and should document how long the patient has been smoking and how much he or she smokes (mild addiction, 1-5 cigarettes per day; moderate addiction, up to 10 cigarettes per day; severe addiction, up to 20 or more cigarettes per day).

A more precise evaluation of the level of dependency can be done using the Fagerström test.[13] This test is scored on a 4-point scale. The questions ask about the time to the first cigarette of the day and previous history of withdrawal symptoms. The test also assesses the patient's ability to resist the urge to smoke when he or she may be in areas where smoking is not allowed or when the patient has been ill. The higher the score, the more severe the dependency.

Strategies

The strategies used in clinical tobacco intervention depend on the user's level of addiction. Patients who do not smoke, especially young patients, should be complimented and encouraged never to begin.

As for smokers, a quick assessment should be made of each patient's current desire to quit smoking. Steps for this assessment are listed in Fig. 3. (For further information on stages of change, readers are encouraged to consult the article by Prochaska and DiClemente.[14])

Patients who smoke should be advised of the effects of smoking on general health and on oral health, specifically. In doing so, it is helpful to have pictures of non-smokers and smokers to compare as well as pictures of patients whose oral health has improved following smoking cessation.

Therapeutic Goals and Intervention

Dentists and dental hygienists should check the status of patients' tobacco use at every visit and continue to provide current information. Patients who are not ready to quit should be asked to at least consider tobacco cessation. Patients must not feel as if they are being pressured, but should be encouraged and offered help in making the final decision to quit.

Counselling based on the stages of behavioural change has been successfully applied in tobacco cessation treatment.[16] Brief interventions of 3 to 4 minutes can move patients through these various stages.[12,16] Rather than pressuring patients into immediate, radical changes, dental staff should try to move the patients through one stage at a time. A brief description of the therapeutic goals and interventions linked

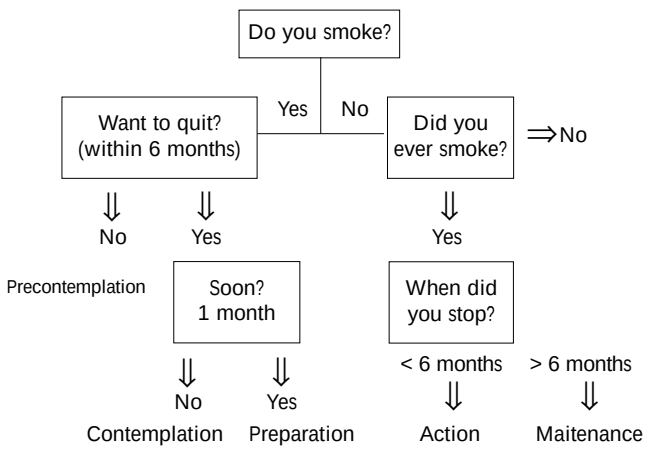

Figure 3: *How to quickly assess stage of readiness.*[12]

Table 1 **Tobacco cessation therapeutic goals and interventions based on the stages of change**[12]

Stage	Goal	Intervention
Precontemplation	• to help patient begin to think seriously about quitting in the next 6 months	• ask patient about his or her feelings about smoking • ask about the pros and cons of smoking • assist by assuring patient that you will not push him or her to stop • offer patient quitting information
Contemplation	• to help patient make a decision to stop smoking in the near future • to help patient feel more confident	• ask about the pros and cons of smoking cessation • assist by reinforcing the reasons for change and exploring new ones • suggest patient cut back or stop for a day • suggest a future visit and offer information
Preparation	• to help patient prepare for change and begin to use quitting skills	• ask about concerns, preparations and lessons learned from previous attempts • advise by identifying barriers to stopping and eliciting solutions • assist by providing material (booklet) and help regarding action plan, date for quitting and nicotine replacement therapy (NRT)
Action	• to help patients stay off tobacco products and recover from slips and relapse	• ask how patient is doing (relapses, temptations, successes, NRT use) • advise (relapse prevention, weight gain, triggers, etc.) • assist by focusing on successes; encourage self-rewards and increased support; elicit solutions to problems

to each stage appears in Table 1. In Ontario, the OMA and the ODA offer information to their members who wish to act as smoking cessation counsellors.

Different levels of addiction should be treated differently.[16] Although clinical and epidemiological evidence indicates that more intense therapies have higher success rates,[16] mild smokers may not need such intensive therapies. The following are decision-making guidelines regarding tobacco cessation interventions:

- mild level of addiction: brief behavioural intervention; NRT
- moderate level of addiction: brief behavioural intervention; NRT; adjunctive pharmacotherapy
- severe level of addiction: brief behavioural intervention; NRT; adjunctive pharmacotherapy; intensive behavioural therapy.

Pharmacotherapy

Only about 3 to 4% of patients are successful when they try to quit without help. It is estimated that this rate could be doubled with counselling and behavioural modification. Pharmacotherapy can increase the success rate to 30% and should be part of any clinical tobacco intervention program.[15,16] Table 2 provides an overview of nicotine replacement therapy (NRT) and adjunct pharmacotherapy use, while Table 3 describes dosages and side effects.

A Word of Caution

In Ontario, the Royal College of Dental Surgeons of Ontario (RCDSO) has recognized that the scope of practice of dentistry includes the

Table 2 **NRT and adjunctive pharmacotherapy use**

NRT

NRT formulation in Canada
- chewing pieces: 2 mg, 4 mg
- transdermal patches: 7 mg, 14 mg and 21 mg

How NRT works
- reduces withdrawal symptoms
- reduces smoking urge by sustaining tolerance (however, even a puff can lead to relapse)
- may maintain mood, attentiveness and stress handling (where these are affected as part of withdrawal)

Use of chewing pieces
- stop smoking
- substitute chewing piece for cigarette
- chew slowly
- use several pieces per day (depending on severity of addiction)
- stay on therapy for sufficient time
- plan staged reduction
- stop using

Use of NRT patch
- stop smoking
- apply to non-hairy, clean, dry, intact skin on arm or torso
- remove old patch and apply new patch according to directions
- choose new site each time
- use for approximately 3 months

Adjunctive Pharmacotherapy[17]

How bupropion (Zyban) works
- inhibits dopamine re-uptake and alters norepinephrine activity
- has more effect (for smoking cessation) than placebo (up to 52 weeks)
- reduces weight gain
- has minimal side effects

Considerations
- bupropion hydrochloride is an anti-depressant approved for use in tobacco cessation treatment by Health Canada
- it should not be used in patients with seizure disorders or with prior diagnosis of bulimia or anorexia nervosa
- its use is contraindicated in patients taking other anti-depressants and monoamine oxidase inhibitors
- patients who are allergic to bupropion hydrochloride can be prescribed Clonidine[16]

Table 3 **Suggestions for the clinical use of pharmacotherapies for smoking cessation**

Pharmacotherapy	Precautions/ Contraindications	Adverse Effects	Dosage	Duration	Availability
Nicotine patch		Local skin reaction Insomnia	21 mg/24 hr 14 mg/24 hr 7 mg/24 hr	4 weeks then 2 weeks then 2 weeks	Prescription and over the counter
Nicotine gum		Mouth soreness Dyspepsia	1-24 cigarettes/day: 2 mg gum up to 24 pieces/day cigarettes/day: 4 mg gum up to 24 pieces/day	Up to 12 weeks	Over the counter
Sustained release[a] bupropion hydrochloride	History of seizure History of eating disorder	Insomnia Dry mouth	150 mg every morning for 3 days then 150 mg twice daily (begin treatment 1-2 weeks prior)	7-12 weeks maintenance up to 6 months	Prescription
Clonidine[b]	Rebound hypertension	Dry mouth Drowsiness Dizziness Sedation	0.15-0.75 mg/day	3-10 weeks	Prescription

Modified from JAMA[16]

[a] *The patient's physician must conduct a physical examination and complete the patient's medical history*

[b] *If bupropion hydrochloride is contraindicated*

Table 4 **Facts about the use of pharmacotherapy for smoking cessation**[18]

1. Nicotine is not the harmful substance in cigarettes. There are about 4,000 compounds in tobacco smoke and many of them cause cancer.
2. Cigarettes are far more addictive than the nicotine patch or gum primarily because of the way in which they deliver nicotine.
3. NRT is safe for smokers.
4. Use of NRT while smoking does not increase the smoker's cardiovascular risk.
5. It is safer for patients with heart disease to use NRT than to continue smoking.
6. NRT is safer for a pregnant woman and her fetus than smoking.
7. NRT is safe to use for all ages.
8. NRT and bupropion are safe and effective. NRT and bupropion have both been found to double quit success rates compared to placebo.
9. The nicotine patch and gum can be used at the same time and in combination with bupropion.
10. Smokers can control the dose of NRT. It takes time for smokers to learn how to maximize NRT's effects.
11. The nicotine patch and gum can be used as long as needed; there are no time limitations.
12. The nicotine patch and gum can be used by people who are not yet ready or able to quit.
13. The use of NRT and bupropion in smoking cessation is cost-effective.

ability for dentists to prescribe non-NRT medications for their patients as part of a smoking cessation intervention. However, information from the RCDSO to its members indicates that dentists who wish to become involved in such patient care should first complete appropriate training. For example, a thorough knowledge of the mechanisms of action of various non-NRT medications and their side effects should be obtained through a recognized training program.

Many dentists may still not feel qualified to prescribe some of the non-NRT medications and are advised to consult with their patient's family physician. This is particularly important as the pharmacokinetics of certain medications may change, with or without nicotine replacement, as a result of smoking cessation.[12] The dosage of certain medications may therefore require adjustment.

There is a great deal of misinformation currently circulating regarding the use of NRT and non-NRT medications in tobacco cessation programs. The OMA's Committee on Drugs and Pharmacotherapy has published an excellent paper on myths and facts about pharmacotherapy cessation programs.[18] Some of these facts are summarized in Table 4.

Intensive Behavioural Change

Dental professionals should limit themselves to brief interventions or counselling sessions. Heavy tobacco users, particularly those with co-morbidity-like clinical depression and advanced social and emotional conflicts, will require intensive behavioural interventions. These patients should be referred to family practice clinics dealing with addiction issues or be treated by clinical psychologists or psychiatrists.

Relapse Prevention

The majority of patients who attempt to quit smoking will relapse. Generally many attempts are required to quit smoking. Relapse is often a natural part of the quitting process. Patients should be encouraged to learn from relapses and to develop strategies to avoid them in future attempts. Patients should be encouraged by statements like, "Now you know that you can quit smoking: you have already been smoke-free for 3 weeks." Patients should be advised to abstain from consuming alcohol, to avoid stressful and emotional situations, and to avoid attending social functions or gatherings where others may be smoking. Socializing in the workplace, where there may be other smokers, is hard to avoid. ◆

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