

# Tobacco Cessation - Role of Dentist

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## Abstract

Tobacco consumption is widely recognized as the single most preventable cause of death and disability worldwide. The impact of tobacco use on global health is substantial and well-documented, affecting millions of people and leading to numerous health complications. Tobacco dependence is indeed a chronic condition characterized by a persistent and recurring nature, which often leads to relapse even after periods of abstinence. The chronicity of tobacco dependence can be attributed to both physiological and psychological factors. Nicotine, the primary addictive component in tobacco, creates dependency by altering brain chemistry, leading to withdrawal symptoms and cravings when not consumed. These physiological dependencies are compounded by behavioral and social habits formed around smoking, making it a challenging addiction to overcome. Addressing tobacco consumption is crucial for improving global health outcomes. The role of dental professionals in managing tobacco dependence is vital due to their frequent and often long-term interactions with patients. By implementing comprehensive tobacco control measures, societies can significantly reduce the burden of tobacco-related diseases and enhance the quality of life for millions of individuals.

**Keywords:** tobacco; tobacco cessation; tobacco-cessation centers; dental surgeons

## Introduction

**Tobacco Use Global Scenario:** According to the World Health Organization (WHO), there are about 1100 million regular smokers in the world today. Globally, tobacco is responsible for the death of 1 in 10 adults (about 5 million deaths each year) with 2.41 million deaths in developing countries and 2.43 million deaths in developed countries. Also, around one-third of adults are estimated to be regularly exposed to second-hand tobacco smoke [1].

**Indian Scenario:** India is the world's third-largest tobacco-growing country and second-largest consumer of tobacco products in the world. India accounts highest tobacco-related mortality with about 7, 00,000 annual deaths attributable to smoking in the last ten years, with an expected rise to one million in the coming decade. More than one-third (35%) of adults in India use tobacco in some form, 21% of adults use smokeless tobacco, 9% only smoke tobacco and 5% smoke as well as use smokeless

tobacco. It is estimated that annual oral cancer incidence among Indian males is as high as 10 per 100,000 [1].

Second-hand Smoke (SHS) - also known as environmental tobacco smoke, involuntary smoking, or passive smoking, is a complex mixture of chemicals and particulates released into the atmosphere from the burning tip of a cigarette, pipe, or cigar, as well as the smoke exhaled by the smoker. Exposure to SHS is a significant public health concern, as it contains numerous toxic and carcinogenic substances. Globally, it is estimated that about one-third of adults and approximately 700 million children are exposed to second-hand tobacco smoke in their homes.

Third-hand Smoke (THS) - refers to the residual toxic chemicals that linger on surfaces and objects long after the visible smoke has cleared. These chemicals can build up over weeks and months, coating surfaces in rooms and smokers' belongings. THS poses a health risk, particularly to children, as they are more likely to come into contact with contaminated surfaces and ingest these harmful substances.

Tobacco cessation is essential to reduce the mortality and morbidity related to tobacco use. Tobacco cessation stands as a cornerstone in the battle against preventable diseases and the promotion of overall well-being [2].

The role of dentists extends far beyond the realm of cavity fillings and oral cleanings; they serve as educators, motivators, and advocates for patients striving to break free from the shackles of tobacco addiction. With regular appointments and intimate knowledge of oral health, dentists possess a prime opportunity to engage patients in candid discussions about the detrimental effects of tobacco on their mouths and bodies.

In this article, we delve into the crucial role of dentists in tobacco cessation efforts. From raising awareness about the oral health consequences of tobacco use to providing personalized cessation strategies and support, dentists wield a potent arsenal in the fight against tobacco addiction. By harnessing their expertise, empathy, and patient rapport, dentists not only transform smiles but also pave the way for healthier, tobacco-free lives.

### ***Harmful Health Effects of Tobacco***

Tobacco use has been regarded as a potential risk factor for chronic conditions like cancer, cardiovascular and pulmonary diseases, with serious deleterious effects. Tobacco use also induces oxidative damage and increases inflammation. This leads to elevated levels of inflammatory markers in the body, contributing to various health issues. The oxidative damage from tobacco use can impair cellular function and DNA integrity, fostering an environment conducive to chronic disease development and progression.

### ***Smoking-related health risk***

<b><i>1. Cancer</i></b>	<b><i>2. Cardiovascular</i></b>	<b><i>3. Respiratory</i></b>
Bladder	Aortic	Asthma
Cervical	Cardiovascular disease	Bronchitis
Kidney	Rheumatic heart disease	Chronic Obstructive Pulmonary Disease
Larynx	Stroke	Decreased pulmonary function
Lung	Sudden cardiac death	Emphysema
Mouth, Throat	Aneurysm	
Pancreatic		

4. Reproductive	5. Neonatology	6. Endocrine	7. Infections	8. Others
Pre-term delivery	Lower birth weight	Early menopause	Pneumonia	Bruises
Reduced fertility	Sudden Infant Death Syndrome (SIDS)	Irregular menstrual bleeding	Influenza	Blisters
Reduced oxygen to placenta		Premature wrinkling and aging	Opportunistic respiratory infections	Broken bones
				Sprains

**Oral Health** - The oral cavity is the first area of the body exposed to tobacco smoke, leading to a range of oral health issues. These include:

- Tooth stains: Discoloration of the teeth caused by tar and nicotine in tobacco.
- Abrasions: Wear and tear on the teeth and gums due to the mechanical and chemical effects of smoking.
- Smoker's melanosis: Dark pigmentation of the oral mucosa.
- Acute Necrotizing Ulcerative Gingivitis (ANUG): A severe gum infection that results in painful, bleeding gums and ulcers.
- Nicotinic stomatitis: Inflammation of the mucous membrane in the mouth due to heat from smoking.
- Keratotic patches: Thickened, white patches on the mucous membranes.
- Black hairy tongue: A condition where the tongue appears dark and hairy due to the overgrowth of bacteria or yeast.
- Palatal erosions: Damage to the roof of the mouth.
- Oral carcinoma: Cancer of the mouth.

Smokeless tobacco also poses significant risks, such as:

- Oral keratosis: Thickened patches inside the mouth.
- Gingival recession: The gums pull away from the teeth, exposing the roots and increasing the risk of tooth decay and loss.

Smoking during pregnancy increases the risk of cleft palate formation in the baby by six times. Additionally, recent research has linked maternal tobacco use to the development of primary caries in their children. Addressing the impact of tobacco on general health and oral health is crucial for preventing these conditions and improving overall health outcomes. Comprehensive public health strategies should include education about the harms of tobacco, cessation programs, and regular dental check-ups to manage and mitigate the risks associated with tobacco use, and policies to reduce tobacco exposure and use [6].

### **Role of Dental Professionals**

Tobacco dependence is indeed a chronic condition marked by a high likelihood of relapse over time. Effective management requires ongoing professional support, encompassing both behavioral counseling and pharmacotherapy. Given the frequent and often long-term interactions with patients, dental professionals are in a unique position to identify and manage tobacco dependence. Here's how dental professionals can play a pivotal role:

### **Screening and Diagnosis**

- Routine Assessments: During dental visits, practitioners can screen for tobacco use through patient history and clinical signs, such as staining, periodontal disease, and oral lesions.
- Questionnaires and Interviews: Implementing brief, structured interviews or questionnaires can help identify patients who use tobacco and assess their readiness to quit.

## ***Tobacco cessation methods***

Tobacco cessation methods can be broadly classified into several categories:

### ***Cognitive Behavioural Therapy (CBT)***

CBT includes methods designed to alter the thought patterns and behaviors associated with smoking. These methods include:

- **Motivational Interviewing:** This patient-centered approach helps to enhance motivation and commitment to quit. It involves discussing the risks of tobacco use and the benefits of quitting.
- **Setting Quit Dates and Follow-Up:** Helping patients set a quit date and providing follow-up support increases the likelihood of successful cessation.
- **Education and Resources:** Provide educational materials and resources such as books, online programs about the harmful effects of tobacco and the benefits of quitting, and support groups that individuals can use on their own to quit smoking.
- **Brief interventions:** Short, structured conversations about smoking cessation provided by health professionals, often during routine medical visits. These interventions aim to motivate individuals to quit and deliver basic strategies and support.

### ***Intensive Therapy***

Intensive therapy involves more comprehensive support and resources, typically available at smoking cessation centers. These centers offer:

- **Personalized counseling:** One-on-one sessions with trained professionals to develop a tailored quit plan.
- **Group therapy:** Support groups led by professionals where individuals can share experiences and strategies for quitting.
- **Behavioral therapy:** Structured programs with multiple sessions and follow-ups to reinforce quitting strategies and provide continuous support.

Tobacco cessation to their patients using the five 'A's (Ask, Advise, Assess, Assist, Arrange) and the five 'R's (Relevance, Risks, Rewards, Roadblocks, Repetition) [4, 7].

### ***Pharmacological Means***

Pharmacological treatments help manage withdrawal symptoms and reduce cravings. These include:

- **Nicotine Replacement Therapy (NRT):** Products that provide low doses of nicotine without the harmful chemicals found in tobacco. NRT options include nicotine patches, gum, lozenges, nasal sprays, and inhalers.
- **Antidepressants:** Medications like bupropion (Zyban) that help reduce cravings and withdrawal symptoms. Bupropion works by affecting neurotransmitters in the brain that are related to nicotine addiction.

Each of these methods can be effective on their own, but combining behavioral therapy with pharmacological treatments often results in higher success rates for quitting smoking. Comprehensive tobacco cessation programs typically integrate multiple approaches to address the physical, psychological, and behavioral aspects of addiction.

### ***Referrals to Specialists***

Referring patients to specialized tobacco cessation programs or other healthcare providers can enhance the effectiveness of tobacco cessation efforts. This interdisciplinary approach ensures comprehensive care, addressing both the physical and psychological aspects of tobacco dependence. Key referral options include:

- **Tobacco Cessation Programs (canters):** These programs offer structured support and resources tailored to help individuals quit smoking. They may include group therapy, personalized counseling, and access to pharmacological treatments.

- **Primary Care Physicians:** Primary care providers can play a pivotal role in tobacco cessation by offering brief interventions, prescribing medications, and monitoring the patient's progress over time.
- **Psychologists:** Psychologists can provide cognitive-behavioral therapy (CBT) and other therapeutic approaches to help patients manage cravings, cope with withdrawal symptoms, and address underlying psychological factors contributing to tobacco use.

### ***Team-Based Care***

A team-based approach in healthcare settings ensures a supportive environment for tobacco cessation. Collaboration among various healthcare professionals can create a comprehensive support network for patients. On May 31, 2002, in honor of "World No Tobacco Day," WHO and the Government of India recognized 13 tobacco cessation centers, which were put into operation using a multidisciplinary approach.

Key elements of team-based care include:

- **Dental Hygienists and Assistants:** Dental professionals often have regular contact with patients and can provide consistent encouragement, education on the oral health risks of tobacco use, and reinforcement of cessation strategies.
- **Nurses and Medical Assistants:** These professionals can offer ongoing support, follow-up on the patient's progress, and provide additional resources and education.
- **Pharmacists:** Pharmacists can counsel patients on the proper use of nicotine replacement therapies and other cessation medications, manage medication interactions, and offer advice on managing side effects.
- **Social Workers:** Social workers can help address social and environmental factors that may impact a patient's ability to quit smoking, such as access to resources, support systems, and stress management.

By integrating the expertise of various healthcare professionals, patients receive a more holistic and supportive approach to tobacco cessation. This collaborative effort increases the likelihood of successful quitting and long-term abstinence, ultimately improving overall health outcomes.

### ***Preventive Education in Tobacco Cessation***

#### ***Community Outreach***

Community outreach programs play a crucial role in raising awareness about the dangers of tobacco use and promoting oral health. These programs can include:

- **Public Health Campaigns:** Organizing events, workshops, and seminars to educate the public about the harmful effects of tobacco on overall health and specifically oral health. This can include distributing educational materials and resources.
- **School Programs:** Implementing educational programs in schools to inform children and teenagers about the risks of tobacco use and the importance of maintaining good oral hygiene.
- **Health Fairs and Community Events:** Set up booths at local health fairs and community events to provide information, answer questions, and offer free oral health screenings and tobacco cessation resources.
- **Partnerships with Community Organizations:** Collaborating with local organizations, such as health clinics, non-profits, and community centers, to extend the reach of educational efforts and provide support to diverse populations.

#### ***Patient Education***

Educating patients about the specific oral health risks associated with tobacco use is essential for motivating individuals to quit and maintain tobacco-free lifestyles. Key educational points include:

- **Oral Cancer:** Informing patients that tobacco use significantly increases the risk of developing oral cancer. Discussing the signs and symptoms of oral cancer and the importance of regular dental check-ups for early detection.

- **Periodontal Disease:** Explaining how tobacco use contributes to gum disease, including the mechanisms by which nicotine impairs blood flow to the gums and reduces the immune response, leading to inflammation, infection, and tooth loss.
- **Other Oral Health Issues:** Highlighting the range of other oral health problems associated with tobacco use, such as tooth discoloration, bad breath, delayed wound healing, and an increased risk of oral infections.
- **Benefits of Quitting:** Emphasizing the immediate and long-term benefits of quitting tobacco, including improved oral health, better breath, a brighter smile, and a reduced risk of serious health conditions [5, 6].

By participating in community outreach and providing targeted patient education, healthcare professionals can play a pivotal role in preventing tobacco use and promoting oral health. These efforts not only help individuals understand the risks associated with tobacco but also empower them with the knowledge and resources needed to make healthier choices [7].

### ***Creating a Tobacco-Free Environment***

#### ***Office Policies***

Implementing and enforcing a tobacco-free policy within the dental practice is a powerful way to promote a healthy lifestyle and reinforce the message of tobacco cessation. Effective office policies can include:

- **Tobacco-Free Zone:** Designating the entire dental office and surrounding areas as tobacco-free zones. Clearly marking these areas with signage to inform patients and staff.
- **Patient Information:** Providing information about the office's tobacco-free policy in appointment reminders, on the practice's website, and in the waiting area.
- **Supportive Resources:** Offering tobacco cessation resources and support materials, such as brochures, quitline numbers, and information about local cessation programs, to patients who use tobacco.
- **Staff Training:** Training all dental office staff on the tobacco-free policy and equipping them with the knowledge and tools to support patients in their cessation efforts.
- **Enforcement:** Consistently enforcing the tobacco-free policy and addressing any violations promptly and professionally to maintain a healthy environment for all patients and staff [5].

#### ***Role Modeling***

Dental professionals who abstain from using tobacco themselves can serve as powerful role models for their patients. This positive example can enhance the credibility of the tobacco cessation message and inspire patients to follow suit.

Key aspects include:

- **Leading by Example:** Demonstrating a commitment to a tobacco-free lifestyle by not using tobacco products. Patients are more likely to take cessation advice seriously when it comes from healthcare providers who practice what they preach.
- **Sharing Personal Stories:** If appropriate, dental professionals who have successfully quit tobacco can share their personal experiences and challenges, offering practical advice and encouragement to patients.
- **Healthy Lifestyle Promotion:** Encouraging and modeling other aspects of a healthy lifestyle, such as regular exercise, a balanced diet, and stress management techniques, can further reinforce the importance of overall health and wellness.
- **Professional Development:** Continually educating themselves about the latest research and best practices in tobacco cessation to provide informed and up-to-date advice to patients.

Creating a tobacco-free environment in dental practices not only supports patients in their efforts to quit but also promotes a culture of health and wellness. By implementing office policies and serving as role models, dental professionals can significantly influence their patients' attitudes and behaviors toward tobacco use, contributing to better oral and overall health outcomes.

By incorporating these strategies into their practice, dental professionals can significantly contribute to the reduction of tobacco use and improve the overall health and well-being of their patients.

## Conclusion

Dentists play a crucial role in tobacco cessation efforts due to their unique position in healthcare. As primary care providers who frequently see patients, dentists have numerous opportunities to discuss the adverse effects of tobacco use, including oral health consequences such as periodontal disease, oral cancers, and delayed wound healing. By incorporating tobacco cessation programs into dental practice, dentists can significantly contribute to their patients' overall health and well-being. Effective tobacco cessation counseling requires a comprehensive approach, including patient education, motivational interviewing, and providing resources such as nicotine replacement therapies and referrals to cessation programs. Dentists should be well-equipped with the knowledge and skills to address tobacco use and deliver personalized interventions.

Furthermore, integrating tobacco cessation into routine dental care not only enhances patient outcomes but also aligns with the broader public health goals of reducing the prevalence of tobacco-related diseases. By leveraging their expertise and patient relationships, dentists can be pivotal in encouraging and supporting patients to quit tobacco, ultimately leading to a healthier population and a reduction in healthcare costs associated with tobacco use. By actively engaging in these efforts, dentists can help patients overcome tobacco addiction, improve their oral and overall health, and significantly impact public health.

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