

## Smoking Cessation Management in Review

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### Abstract

**Background:** Smoking cessation is a significant health importance world-wide as smokers suffer a 50% chance premature dying from smoking. Nearly 70% of smokers want to quit, but only 30% truly try to quit. Only 3% - 5% smokers every year actually success quitting. Tobacco dependence is a chronic complaint that requires intervention. Though, effective cessation approaches exist can produce long-term or even permanent abstinence.

**Aim:** The main objective of this article is to overview latest updated of nicotine dependence and different approaches of smoking cessation.

**Conclusion:** Smoking cessation is associated with direct and indirect health benefits, improving general health and a reduce risk of comorbid diseases. Awareness about bad health hazards associated with smoking, benefits of cessation and cessation approaches should be raised among public populations worldwide. Also, physicians should be familiar with smoking cessation strategies and promote cessation as an effective health intervention to smokers ensuring they are aware of the different cessation approaches.

**Keywords:** Smoking Cessation; Pharmacological Approach for Smoking Cessation; Strategies in Smoking Cessation; Nicotine Dependence

### Introduction

Smoking is a major health problem causing morbidity and mortality despite the preventive measures and offers by governments to decrease of cigarette smoking [1]. Worldwide, 23% of humans are smokers (32% of all males and 7% of all females) [2]. Smoking is as-

sociated with elevated risk of almost 17 cancer types and increased risk of respiratory diseases, contracting spontaneous pneumothorax, respiratory bronchiolitis-associated interstitial lung disease, cardiovascular disease, gastrointestinal disorders, COPD and diabetes mellitus [3-5]. During pregnancy, smoking elevates risk of complications as miscarriage, stillbirth, preterm birth, fetal growth restriction and congenital anomalies. Sudden death syndrome in infants and children, abnormal lung function in children and asthma are complications of exposure to cigarette smoking for children [6,7].

Smoking cessation is a significant health importance world-wide as smokers suffer a 50% chance premature dying from smoking [8]. Nearly 70% of smokers want to quit, but only 30% truly try to quit. Only 3%- 5% smokers every year actually success quitting. Tobacco dependence is a chronic complaint that requires intervention. Though, effective cessation approaches exist can produce long-term or even permanent abstinence [9].

Quitting smoking has been proved to help smokers conserve their health and extends their lifespan by almost ten years. It is one of the most main, yet challenging steps a person can take to improve his health and quality of life as well. Many smokers try to quit smoking several times before succeeding quit smoking [10].

There is significant evidence that therapeutic approaches alone or in conjunction with pharmacotherapy enhance smoking reduction. Both therapeutic and pharmacotherapy approaches are successful and advised, and variations of strategies are more effective. The best and most successful strategies are those that are realistic for each person [11,12]. Only 2% - 4% of smokers can actually quit smoking by their own without medications, while quitting rate increases to 20% - 40% when combined with pharmacotherapy [13].

Behavioral approaches proved to be efficient in helping people stop smoking include in-person therapy, digital counseling, and self-help guides. These approaches may raise the smoking cessation average from 5% to 11% in to 7% to 13% [14]. Pharmacotherapy approaches FDA has been approved to manage nicotine dependency in adults include nicotine replacement therapy (NRT) bupropion SR and varenicline [15].

Health care providers have a vital role to play in providing information, encouraging early diagnosis, early referrals to addiction treatment centers, and providing pain management and palliative care. Experience and expertise in these areas need to be improved and these guides were established in response to this need [6].

There is rising societal emphasis on smoke-free areas, prompting a need to provide meaningful resources for smokers who are seeking to stop. Since quitting smoking has become an important element of government and international tobacco control policies and practices and is a successful health strategy, programs should focus on the prevention, care and management of tobacco dependence must be a crucial part of primary care [16].

The main objective of this article is to overview latest updated of nicotine dependence and different approaches of smoking cessation.

### **Nicotine dependence diagnosis and treatment**

Nicotine dependence merits medicinal management like any drug-dependence condition or chronic disease. Smoking is due to nicotine addiction. The concept of nicotine addiction as a long-lasting, reverting disorder is not novel [17], however it has directed to changing the smoking cessation dealing as “chronic disease management,” that leads to a systematic methods to bringing nicotine addiction treatment in healthcare facilities [18].

Long-lasting nicotine use disturbs brainstem constructions (locus ceruleus); noradrenergic cells turn into extra impulsive. Once a smoker withdraws, the fire rates come to be extraordinary, producing withdrawal symptoms as sensation of anxiety and irritability, defect in attention, sleep disruption, headaches, troubles in digestion etc. in severe addiction; the case could come to be psychologically unbal-

anced with imprecise emotional state and anxiety. Additionally, for cases that cannot stop smoking due to withdrawal manifestations, it is suggested to care smoking stop though giving advices that appropriate management approaches are well implemented aimed at smoking cessation [19].

Plasma nicotine increase speedily then greatest at the time of smoking is quenched also steep deterioration arises till the subsequent cigarette be smoked [20]. This dose of nicotine triggers the brain-reward scheme thru intensifying dopamine production as this one of the effective psycho-active medication [21]. This brain reward system considered a communal path aimed at pleasant actions in utmost medications of dependence [22].

The euphoria induced serves as a re-inforcer for its use. Dependence arises from the temporal association of the rituals and sensory inputs with the repeated stimulation and relief of withdrawal symptoms [23]. This required association explains why nicotine replacement therapy (NRT) products, that deliver nicotine slowly and do not produce high plasma nicotine levels, have minimal addictive potential [24].

A comprehensive history, degree of dependence and incentive to quit smoking, somatic and psychological health condition and associated morbidity necessity to be evaluated beforehand beginning treatment. Ecological influences, may work as re-enforcers must assessed [23]. Advantages of tobacco-cessation and the cessation progress beside the probable withdrawal symptoms must be clarified to the patient. In discussion with the patient, management approach that outfits the patient must be designated. Severity of nicotine addiction must be measured using existing forms such as CAGE questionnaire, a simple, precise instrument for screening cases of dependency conditions [24,25].

Various physical exam discoveries could be exactly or incidentally linked with tobacco smoking. Going on exam of the oropharynx, periodontal syndrome, tooth defects and malignancies of the tongue then oropharynx could be discovered. The trail of tobacco smolder frequently remains on the breath or dress [26]. Lung auscultation could disclose diminished or asynchronous breath sounds. On heart exam an amplified resting heart rate may be found, in comparison by non-smokers [27]. Tobacco tints could be existed on the face and fingers. Smoking-related peripheral vascular conditions as diminished marginal pulses may occur [28]:

1. Becoming aware (heightened awareness): Being aware of an individual's performance forms by showing a smoking records or notes from others (doctor) concerning the association between their tobacco usage and their individual consequences or even understanding health facts materials. People use raising awareness more in the meditation and meditation steps [29].
2. A chief emotive practice generated by a disaster in somebody's lifetime (people frequently state that unkind health or the death of a relative prompted them from pre-meditation to meditation). Movies and affected role-playing regenerations can also evoke emotional excitement. This method is very helpful in meditation and preparation [30].
3. Growing alternatives (social liberation): This is an external support force arising from environmental changes. These changes may affect people at different stages differently. If offices, restaurants, or trains are made "smoke-free", counter people may become more aware of how important smoking is to them and how difficult it is to spend a few hours without smoking. This, in turn, may raise their awareness of their dependence on a habit. People in the maintenance phase may find it supportive in creating a risk-free environment at a high-risk point of their day [31].
4. Rewards: Persons can prize themselves for making modification using self-praise, provoking praise from helpers, or gifting themselves and others with cash saved by not purchasing tobacco. In the exploit stage, these rewards are all the more significant as the intrinsic assistances of change take time to become seeming. In fact, after discontinuing, people sense bad and not improved until a limited weeks, when the reformed behavior initiates to suggest its personal prizes [29].

5. Generate a new image (self-appreciation): Think about how person notice himself, what are the standards and aims that are important to him, and how the behavior of the “problematic” outbursts or struggles with it. This comprises evaluating the prices of behavior and the assistances of modification. It is greatest frequently used in the inspection and planning phases [32].
6. Help: A person can provide a helping relationship; Health professionals, family members, friends and friends. This assistance is supportive at all stages. People need different types of help at different stages (e.g. somebody to attend and inquire relevant questions to assistance self-evaluation, or somebody to offer prizes) [33].
7. Commitment: Originates with tolerant accountability for selecting to make variations and taking correct action and is essential in the planning and maintenance phases. Publicly proclaiming the choice to stopover, to personal and friends creates social pressures to support the change [32].
8. Environmental control: Controlling the environment in order to reduce temptations or usage incentives in the work or maintenance stage. Please, in preference to behavior, it is permitted to pledge to register previously. Others write notes and reminders themselves and put them in their home [34].
9. Use of substitutions (confrontation): Replacing behaviors that are healthy or harmless to the person trying to give up is very effective in the work and maintenance phases. Mood-altering activities (listening to music, physical exercise, or relaxation exercises) are a way to counteract the emotional need that was formerly delivered by extraordinary nicotine. Any action that diverts from rational or desire tobacco is additional [35].

### Cessation strategies

Brief strategies provided by doctors and other primary health care staff are important for the management of people with nicotine issues low in cost and have proved to be successful in the prevention of tobacco. Consequently, smoking abstinence can be daunting for certain people and it is recommended that treatments include therapeutic and pharmacological help [36-38].

### Behavioral and cognitive approach

Person or group therapy provided by service agencies can be referred to anyone encouraged to stop smoking. In general, therapy focuses on problem-solving strategies, relaxation preparation and coping mechanisms, and community counselling adds aspects of peer reinforcement [39].

Behavioral therapy is widely used for smokers considering quitting or planning to quit, trying to resolve past learning processes that are specifically related to smoking and existing social conditions that make it impossible to quit (e.g. social, behavioral, and environmental factors) [40]. Both minimal and comprehensive in-person treatments improve the percentage of people who have effectively stopped smoking and stay abstinent. However, additional or longer sessions will increase cessation rates [41].

Behavioral management strategies train smokers with practical strategies to avoid triggers, control cravings, and ease withdrawal signs covering different topics as quitting smoking advices; evaluation of previous attempts to quit and learn lessons from these trials; valuation of present motivation to quit; assessment of causes of smoking in the first place to perfectly manage them; guidelines to elevate mood and promotion of adherence and continuation of treatment [16].

Cognitive therapy as CBT is a psychotherapeutic approach based on the idea that maintain behavioral problems by cognitive factors, counting principles that lead to involuntary thoughts about specific situations [43]. Contemporary CBT implementations usually underscore cognitive influences and mental, physiological, and behavioral elements that can improve behavior. Trials have also demonstrated

that CBT is beneficial for smoking cessation in particular populations [44]. CBT has been found to improve abstinence when combined with NRT or other cessation drugs in communities that use nicotine and have comorbid drug use or mental health problems [45].

### Pharmacotherapy

Three smoking cessation drugs permitted for usage in Canada: NRT, bupropion, and varenicline [9]. Since there are no standards existing for evaluating the most efficient drug therapy in a particular patient, management choices are made at the preference of the doctor and necessity take into consideration the contraindications and the smoker's history and autonomy [39].

**Nicotine replacement therapy (NRT):** Available in various preparations as a temporary substitute for nicotine from cigarettes; this treatment indicates the causes of the urge to smoke and the symptoms of nicotine withdrawal [40]. NRT targets to improve nicotine withdrawal symptoms and to diminish smokers' craving to smoke. NRT must be given as monotherapy primarily, with consequent combination treatment (comprising of several combinations of NRT drugs) if monotherapy evidences ineffective [41]. Cases using reasonable or severe addiction upon nicotine necessity usage a adequate quantity of nicotine in additional preparations since withdrawal symptoms toughly occur from days to 2 weeks afterward the twitch of smoking cessation [42].

Nicotine formulas (e.g. gum, lozenge, or nicotine patches, besides their combination) diminish the strength of passion and withdrawal symptoms by substituting the nicotine existing in cigarettes. Use of patches (aimed at contextual nicotine spare) and gums or tablets (for urges) appears to improve the quitting effectively. Numerous patches could be given concurrently on the skin of cases of high level of bodily addiction [43]. Confined skin irritation and contact sensitization could be abridged by moving the use place every day, and sleep trouble can be reduced by eliminating the patch before bed time. There were no substantial difference in the 24-hour and 16-hour figures for rates of smoking cessation and withdrawal symptoms. Nicotine pressurized metred-dose inhalers (pMDI) are a harmless, in effect, and cheap technique of pulmonary nicotine transfer, and are usually used throughout clinical training [44].

Bupropion SR is a non-nicotine agent. bupropion looks to be suitable for cases attentive in decreasing smoking who hate, or who have unsuccessful, NRT. Also, it has been stated that bupropion intake is accompanied with shorter times between cessation efforts and that it may upsurge the occurrence of short-term self-denial [45]. Special effects of sleeplessness (42.4%) and dehydrated mouth (10.7%) were considerably more frequent in a bupropion group than in a placebo group (19.5% and 4.4%, correspondingly,  $p < 0.05$ ) in Jorenby, *et al* [46].

Varenicline is fractional agonist/antagonist which benefit the cases achieve smoking cessation by decreasing desires and withdrawal symptoms and smoking gratification [47]. Varenicline preserves a reasonable level of dopamine formation, which decreases desire and withdrawal symptoms during asceticism. The efficiency of varenicline was confirmed in several clinical trials. The chief side effects are nausea, headache, vomiting, flatulence, sleeplessness and unusual dreams, mostly mild in nature were found which weaken by time [48].

Other agents as clonidine were initially permitted to decrease the blood pressure. It is an alfa-2-adrenergic receptor agonist anti-hypertensive agent and declines the central sympathetic action. It affects CNS and may decrease withdrawal symptoms accompany the smoking cessation [49].

Naltrexone is a lengthy acting form of opioid antagonist. The motivation for consuming naltrexone for smoking cessation is that it enhances other optimistic properties of nicotine. Selected studies point out the advantageous properties of Naltrexone [50].

### Interventions at the national level

Governments should impose laws and regulations to limit the number of smokers and help quit smoking for those wishing to quit. Tax structure must be designed to offer a tax- and price-based discouragement for tobacco consumption in all forms as in Zealand, Australia

and the USA. Tobacco products other than cigarettes should also be taxed to avoid transferring consumption from one tobacco segment to another [51].

Tobacco control programs to reduce the levels of consumption and raise awareness about tobacco harmful effects on human health and quality of life should be undertaken and supply-side steps supplement demand-side initiatives to regulate tobacco use and crop substitution, trade restrictions, and banning of the product [52]. Scientific Advisory Committee on Tobacco Product Regulation established by the WHO, 2002, offers practical guidance on problems related to tobacco product regulation-limitations of testing methods, setting up of upper limits for toxic ingredients and their emissions [53].

Tobacco cultivators should switch over to alternative crops. Market analysis is required to identify alternative crops and government should offer help during transition, especially to poorer farmers, which include rural training, broader off-farm employment opportunities and assistance with crop diversification [54].

There is definite evidence that tobacco advertising an significant role in inspiring non-smokers to commence smoking. These tobacco adverts must be banned the industry will have little or no effect on overall marketing expenditures. Bans on tobacco advertising and promotion along with an intensive public information campaign on the hazards of using tobacco products can result in a significant reduction of tobacco consumption at the national level by 6% [55].

The WHO recommend warning labels on tobacco products, which have an effective way to inform smokers about the health hazards of tobacco consumption, encourage, smokers to quit, and discourage non-smokers from starting to smoke. Multiple, strong and direct health warning messages are the most effective and critical component of a comprehensive tobacco control strategy [53].

## Conclusion

Smoking remains a bad common habit associated with many comorbid diseases counted as the greatest modifiable risk factor for increased morbidity and mortality. Smoking cessation is associated with direct and indirect health benefits, improving general health and a reduce risk of comorbid diseases. Awareness about bad health hazards associated with smoking, benefits of cessation and cessation approaches should be raised among public populations worldwide. Also, physicians should be familiar with smoking cessation strategies and promote cessation as an effective health intervention to smokers ensuring they are aware of the different cessation approaches. Combination of pharmacotherapy and behavioral approach is more likely to increase cessation rates.

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