



# Nonpharmacological smoking cessation interventions in clinical practice

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**ABSTRACT:** Doctors and other healthcare professionals are in a unique position to advise smokers to quit by their ability to integrate the various aspects of an effective counselling. The present review provides an overview of nonpharmacological interventions for smokers presenting in a clinical setting. Strategies used for smoking cessation counselling differ according to the patient's readiness to quit. For smokers who do not intend to quit smoking, physicians should inform and sensitise about tobacco use and cessation. For smokers who are dissonant, physicians should use motivational strategies, such as discussing barriers to cessation and their solutions. For smokers ready to quit, the physician should show strong support and help set a cessation date. Physician counselling for smoking cessation is among the most cost-effective clinical interventions.

**KEYWORDS:** Prevention, smoking, smoking cessation, tobacco

Smoking cessation has a major health impact [1]. Smokers who quit before they are aged 35 yrs can expect a life expectancy similar to those who have never smoked [2]. Although the majority of current smokers wish to quit smoking, and that effective interventions exist for tobacco users [3, 4], very few request or receive formal smoking cessation intervention. Physicians and other healthcare professionals are in a unique position to intervene; yet studies suggest that smokers are not consistently identified or treated in clinical settings [5]. The present review provides an overview of nonpharmacological interventions from clinical practice guidelines and previous qualitative reviews [3, 4, 6, 7].

## RECOMMENDATIONS

Medical advice to quit produces 1-yr abstinence rates of up to 5–10%, which would have a significant public health impact if it were provided routinely [8, 9]. Unfortunately, surveys of smokers indicate that they receive such advice from their physicians <50% of the time [5–7, 9]. One reason physicians hesitate to advise smoking cessation is that they become demoralised because they see few of their patients follow this advice. Although this is an understandable reaction when an action goes unrewarded, physicians should realise that even when their advice does not produce an immediate cessation attempt by a patient, it may very well move the patient further toward the difficult decision to quit smoking. Smoking cessation should be considered as a process of change through successive stages requiring counselling

tailored to smokers' motivation to quit [10]. Application of this model improves physicians' performance and 1-yr smoking cessation rates [11].

Each smoker should be encouraged to completely abstain from smoking and should be warned that other tobacco products, such as smokeless tobacco, are associated with significant health risks. Smoking reduction has been proposed to be an alternative approach for smokers [12]. Even though this approach is promising, especially for heavy smokers who suffer from tobacco-related diseases, such as chronic obstructive pulmonary disease, its effectiveness is still a research question under scrutiny. Before evidence is obtained, the recommended clinical attitude should be to advise to quit. It is unlikely that a heavy smoker would be able to maintain light or infrequent smoking without resorting to his or her old smoking patterns. Indeed, even lighter smoking (<5 cigarettes·day<sup>-1</sup>) has been associated with elevated health risks [13], in particular with regard to lung cancer. Strategies aimed at gradual reduction of smoking without any medication *versus* quitting "cold turkey" appear to lead to continued craving and prolonged withdrawal symptoms in tobacco users. Smokers compensate by taking more and/or deeper puffs per cigarette when they attempt to reduce their smoking.

Clinical practice guidelines recommend that physicians follow the "5 As" (table 1) in initiating assessment and intervention with tobacco users.

The "5 As" are as follows. 1) Asking the patient if he or she uses tobacco: identify and document

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## STATEMENT OF INTEREST

J. Cornuz has received fees for speaking about smoking cessation.

tobacco use status for every patient at every visit. 2) Advising the patient to quit tobacco use. 3) Assessing the patient's willingness to quit tobacco use. 4) Assisting the patient in their quit attempt. 5) Arranging follow-up contacts and relapse prevention.

Each patient should be asked about his/her smoking status during visits [3]. As the guidelines stipulate, the physician then advises the patient to quit smoking in a clear ("It is important for you to quit smoking now, and I can help you. Cutting down while you are ill is not enough.") and strong manner ("As your physician, I need you to know that quitting smoking is the most important thing you can do to protect your health now and in the future. The clinic staff and I will help you."). The advice should also be personalised for the patient, highlighting his/her particular situation. For example, the advice may be tied to the patient's health ("Your smoking is only prolonging your cough and putting you at risk for long-term respiratory problems such as chronic bronchitis or emphysema.") and the impact smoking might have on children ("You are putting your children at risk of asthma, ear infections, and other diseases by exposing them to second-hand smoke."). The intervention should focus on the advantages of smoking cessation for health rather than on the risks of smoking.

#### INTERVENTION FOR SMOKERS UNWILLING TO QUIT

Intervention efforts will not be successful without sufficient motivation or "readiness" to quit smoking on the part of the smoker. For the patient who is presently unwilling to quit smoking, recommending entering a smoking cessation programme may be premature and ineffective. The USA practice guidelines suggest following the "5 Rs" motivational intervention as listed table 2 [3]: relevance, risks, rewards, roadblocks and repetition. Such a patient should be asked to: 1) identify why smoking cessation is personally relevant to the patient (*e.g.* for the patient's own health; health of patient's children; prior ability to quit, such as for females while pregnant); 2) identify potentially negative consequences, or risks, of tobacco use (*e.g.* exacerbation of cough; long-term risk of cardiovascular problems and cancer; risks of children of breathing second-hand smoke; increased probability that children will become smokers themselves); 3) identify rewards associated with cessation (*e.g.* improved sense of taste and smell; clothes, house and car will smell better; financial savings); 4) identify roadblocks or barriers to cessation and note treatment elements that could address them (*e.g.* withdrawal symptoms, such as irritability; appetite increase and risk of depression, which could be attenuated by pharmacotherapy; lack of social support for cessation could be remedied by joining a cessation clinic or support group). Finally, 5) the

physician should repeat this information each time the patient is seen in the clinic.

#### PREPARATION FOR THE CESSATION PROCESS

As the physician has the opportunity to assist the patient's cessation attempt, the intervention should comprise the following: 1) helping the patient with a cessation plan; 2) providing practical counselling (problem solving/skills training); 3) providing intra-treatment social support; 4) helping the patient obtain extra-treatment support; 5) recommending the use of approved pharmacotherapy, except in special circumstances; 6) providing supplementary materials. In detail, these recommendations imply that the physician should instruct the patient to do the following steps ("STAR") to prepare to quit [3]. 1) Set a cessation date. 2) Tell family, friends, and co-workers about quitting and request understanding and support. 3) Anticipate challenges to the planned cessation attempt (including nicotine withdrawal symptoms), particularly during the critical first few weeks. 4) Remove tobacco products from his/her environment and, prior to quitting, avoid smoking in places where spending a lot of time will be spent (*e.g.* work, home and car).

The physician should then provide the patient with some basic didactic information about smoking cessation. Smoking represents an addiction to nicotine. Smoking cessation must be undertaken as seriously as one would approach any other drug addiction. Willpower alone is often insufficient. The patient must make smoking cessation his/her top priority. The patient can expect to experience unpleasant nicotine withdrawal symptoms (*e.g.* mood disturbance, insomnia, irritability, difficulty concentrating, increased appetite and weight gain). For most individuals, these symptoms peak within a few days of cessation and most of them dissipate gradually to return to baseline levels after about 3–4 weeks. The physician can help the patient identify high-risk or dangerous situations. These are events, internal states or activities that increase the risk of smoking or relapse due to their past association with smoking (*e.g.* negative emotional states, being around other smokers and drinking alcohol). These situations should be avoided early on, if at all possible. The physician can help the patient select some cognitive and behavioural coping skills to use when he/she experiences an urge (or "craving") for cigarettes. Examples of cognitive coping skills are: reminding the patient of the reasons for quitting; telling the patient that urge will pass; and repeating the phrase, "smoking is not an option." Behavioural coping skills include leaving the situation, engaging in some distracting activity, taking deep breaths and seeking social support.

The physician should also provide support within the clinic by: 1) encouraging the patient in the cessation attempt (*e.g.* note that

**TABLE 1** The "5 As" for smoking cessation intervention

<b>Ask about tobacco use</b>	Identify and document tobacco use status for every patient at every visit
<b>Advise to quit</b>	In a clear, strong and personalised manner urge every tobacco user to quit
<b>Assess willingness to make a cessation attempt</b>	Is the tobacco user willing to make a cessation attempt at this time?
<b>Assist in cessation attempt</b>	For the patient willing to make a cessation attempt, use counselling and pharmacotherapy to help him or her quit
<b>Arrange follow-up</b>	Schedule follow-up contact, preferably within the first week after the cessation date

**TABLE 2** Recommendations to enhance motivation to quit tobacco: the “5 Rs”

<b>Relevance</b>	Encourage the patient to indicate why cessation is personally relevant, being as specific as possible. Motivational information has the greatest impact if it is relevant to a patient's disease status or risk, family or social situation (e.g. having children in the home), health concerns, age, sex and other important patient characteristics (e.g. prior cessation experience and personal barriers to cessation).
<b>Risks</b>	The clinician should ask the patient to identify the potential negative consequences of tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. The clinician should emphasise that smoking low-tar and/or low-nicotine cigarettes or use of other forms of tobacco (e.g. smokeless tobacco, cigars and pipes) will not eliminate these risks. Examples of risks are: Acute risks: Shortness of breath, exacerbation of asthma, harm to pregnancy, impotence, infertility and increased serum carbon monoxide. Long-term risks: Heart attacks and strokes, lung and other cancers (larynx, oral cavity, pharynx, oesophagus, pancreas, bladder and cervix), chronic obstructive pulmonary diseases (chronic bronchitis and emphysema), long-term disability and need for extended care. Environmental risks: Increased risk of lung cancer and heart disease in spouses; higher rates of smoking by children of smokers; increased risk for low birth weight, and sudden infant death syndrome and respiratory infections in children of smokers.
<b>Rewards</b>	The clinician should ask the patient to identify potential benefits of stopping tobacco use. The clinician may suggest and highlight those that seem most relevant to the patient. Examples of rewards are: Improved health: food will taste better. Improved sense of smell. Save money. Feel better about yourself. Home, car, clothing, breath will smell better. Can stop worrying about smoking cessation. Set a good example for children.
<b>Roadblocks</b>	The clinician should ask the patient to identify barriers or impediments to cessation and note elements of treatment (problem solving, pharmacotherapy) that could address barriers. Typical barriers might include: Withdrawal symptoms. Fear of failure. Weight gain. Lack of support. Depression. Enjoyment.
<b>Repetition</b>	The motivational intervention should be repeated every time an unmotivated patient visits the clinic setting. Tobacco users who have failed in previous attempts should be told that most people make repeated cessation attempts before they are successful.

effective tobacco dependence treatments are now available; note that one-half of all people who have ever smoked have now quit; communicate belief in the patient's ability to quit); 2) communicating caring and concern (e.g. ask how the patient feels about quitting; directly express concern and willingness to help; be open to the patient's expression of fears of quitting, difficulties experienced and ambivalent feelings); 3) encouraging the patient to talk about the cessation process by asking about reasons why the patient wants to quit, concerns or worries about cessation, success the patient has achieved and difficulties encountered while quitting. Eventually, the patient should be assisted with obtaining social support outside of the clinic environment. The clinician should train the patient in support solicitation skills (e.g. practice requesting social support from family, friends and co-workers; aid a patient in establishing a smoke-free home) and prompt support seeking in the patient (e.g. help the patient identify supportive others and inform patients of community resources, such as hotlines). A busy physician may be tempted to hand one or more of the available self-help booklets to a patient who smokes, instead of providing the personal advice called for by the “5 As.” It should be emphasised that physician counselling is among the most cost-effective clinical interventions [14]. Two components of counselling are especially effective: practical

counselling, such as problem solving and skills training, and social support delivered as part of treatment.

There are no definitive data demonstrating that minimal intervention from non-physician clinicians may also increase cessation in unmotivated smokers.

Self-help interventions, such as written, generic materials, audiocassettes and videos, provided without personal support, have only a small effect on smoking cessation rates but are better compared with no intervention [15–17]. Materials that are tailored to the smoker's personal profile have better success. These interventions should be part of a population-based strategy, where the number of smokers reached may compensate for their small effect [15].

Telephone-based access to counselling and smoking cessation resources increases cessation rates. The majority of help-lines provide access to individual counselling; the greatest amount of counsellor contact, the greater the likelihood of successful cessation [18].

Patients often express interest in smoking cessation by hypnosis. Its popularity is understandable, because it implies smoking cessation without effort or distress. However, several

reviews of the literature have found insufficient evidence that hypnosis offers any additional treatment advantage above and beyond the behavioural and pharmacotherapeutic interventions that may be bundled together with it [3, 19]. It is noteworthy that this research literature is lacking in properly controlled studies, and that the smoking cessation interventions offered by hypnotherapists are quite variable in terms of their other treatment components. Given the lack of evidence for their efficacy, hypnosis-based treatments cannot currently be routinely recommended for smoking cessation.

The use of acupuncture for smoking cessation also appears to be growing in popularity. However, a meta-analysis has found that "active" acupuncture did not outperform "control" acupuncture, particularly for long-term smoking abstinence, suggesting that acupuncture itself is not a potent intervention [3, 20].

Group behaviour therapy programmes (e.g. the "5-day plan") may also be a nonpharmacological alternative for smoking cessation. Such programmes usually consist of five consecutive meetings of 60 or 90 min conducted by physicians or psychologists. Different aspects of smoking cessation are discussed and participants have to quit smoking after the first meeting without any pharmacological help. The efficacy of such programmes has been proved but the studies had methodological flaws [21].

Preliminary data suggest that vaccine targeting nicotine may help smokers quit. Nicotine vaccine is designed to stimulate the production of antibodies. The basic premise is that such antibodies might block some of the nicotine's reinforcing effects by sequestering the chemical in blood and preventing it from reaching the brain. Results from phases I and II/b show that such a vaccine appears to be well tolerated and promotes immunological responses in the majority of the study participants [22].

## RELAPSE PREVENTION

As even the most effective interventions are plagued by relapse, the physician should tell the patient that the typical smoker requires several serious cessation attempts before finally achieving long-term success. Although the patient must enter each smoking cessation attempt motivated by the expectation of success, setbacks should be viewed as learning experiences. With each relapse, the patient learns more about his/her personal strengths and vulnerabilities, the nature of nicotine addiction and relapse risk factors, for which the patient needs to prepare better in the future. Indeed, tobacco use should be defined as a "chronic condition that often requires repeated intervention". Patients should be advised to avoid any tobacco use at all after cessation and be warned that the vast majority of those who have a single post-cessation cigarette eventually return to daily smoking. Relapse prevention strategies have been found to be effective as a treatment component for tobacco use. Therefore, the physician should execute the last of the "5 As": Arrange follow-up and relapse prevention. The physician should arrange for either a formal or telephone follow-up contact with the patient shortly after the target cessation date. By arranging for such a contact, the physician emphasises the importance of smoking cessation and communicates personal support for the patient's effort. The contact itself provides an

opportunity to offer additional encouragement and support, to monitor the patient's progress and to provide further assistance (e.g. adjustment of pharmacotherapy instructions, referral to an intensive programme or advice about weight gain). Patients can benefit from extended contact by receiving a series of printed relapse prevention materials through the mail over an extended period of time [23].

Clinicians should not forget that smoking is not only an individual behaviour due to nicotine dependence, but is also the consequence of several economic and social factors, such as cigarettes prices, marketing and social norms. When advising and assessing a smoker, they should also integrate these components.

## CONCLUSION

The "5 As" recommended by the clinical practice guidelines typically require only a few minutes of direct clinician time. Smoking cessation interventions systematically provided to smokers during physician-patient contacts have the aggregate potential to produce a dramatic enhancement of public health. Physicians and other medical personnel should assess, advise and assist smokers at every opportunity. For smokers ready to quit, the physician should show strong support, help set a smoking cessation date, prescribe pharmaceutical therapies for nicotine dependence and suggest behavioural strategies to prevent relapse. Other nonpharmacological measures or interventions such as self-help material, group behaviour therapies or acupuncture might be complementary to the counselling but the evidence of their efficacy is scarce. Physician counselling is among the most cost-effective clinical interventions.

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