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SMOKING CESSATION COUNSELLING

Abstract

Tobacco use is the leading preventable cause of premature morbidity and death in the world and it is responsible for approximately 15 years of healthy life lost. The world average smoking prevalence is 21% (35% for men and 6% for women), with the worst situation in low- and middle-income countries. In the Russian Federation, 31% of adults smoke (51% of men and 14% of women); meanwhile, in the last decade the prevalence of smoking declines by about 1% per year. Clinically, smoking is a behavioral disorder caused by psychophysical dependence from nicotine. Tobacco dependence is associated with the characteristic smoking habits and withdrawal symptoms that prevent successful quitting. The role of physician is to identify smokers on a regular basis, increase their readiness to quit, and support them during a quit attempt. Smoking status should be assessed in any patient who seeks medical care. All tobacco users should be encouraged to quit in a clear and personalized manner. The further content of medical care is determined by the patient's willingness to make a quit attempt. For those who are not ready to discuss smoking cessation, physician should express readiness to help at any time. For the patients who are not ready to quit at this time, physician should initiate brief motivational intervention and discuss possible benefits of smoking cessation and obstacles to successful quitting. For those who are ready to quit, physician provides behavioral counselling and prescribes medications (nicotine replacement therapy or nicotinic receptor partial agonists). At the follow-up visits in a week and a month after the quit date, physician should discuss treatment effectiveness and problems with smoking habits. For continued smokers physician should reassess their readiness to quit at the following visits and repeat motivational interviewing. Screening tests for smoking-related diseases should be recommended when necessary.

***Key words:** tobacco use disorder, quitting smoking, motivational interviewing, smoking cessation products*

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NAA — nicotinic agonist-antagonist, NRT — nicotine replacement therapy

Epidemiology of Tobacco Smoking

Tobacco smoking is the leading preventable cause of premature mortality in the world resulting in the deaths of 7 million people annually [1]. The total number of smokers is more than one billion, 80 per cent of whom live in low-and middle-income countries, mainly in China, India and South-East Asia. According to a major epidemiological study — Global Adults Tobacco Survey (GATS) -conducted in 2016 in the Russian Federation (Russia), more than 36 million people or 31% of the adult population smoked [1]. Over the past decade, smoking in the Russian Federation decreased by about 1.2% a year, largely due to the accession to the World Health Organization Framework Convention on Tobacco Control and an active anti-tobacco state policy [2]. Nevertheless, Russia remains among countries with high smoking rates, especially among men (Table 1).

The mean age at which daily smoking begins in Russia is 17 years, 64% of smokers show signs of strong nicotine addition, and 56% plan or think

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Table 1. *Prevalence of tobacco smoking in the Russian Federation compared to world data*

Tobacco smoking prevalence	Overall	Men	Women
Russian Federation[1]	**31%**	51%	14%
High-income countries[2]	**23%**	29%	18%
Global average[2]	**21%**	35%	6%

1. Global Adult Tobacco Survey, Russia, 2016.
2. WHO report on the global tobacco epidemic, 2017.

about quitting [1]. The male sex, smoking family members or peers, poverty, low level of education, as well as a severe psychotraumatic event predispose to the development of tobacco addiction [3]. Mental health disorders, antisocial behavior and criminal behavior are also associated with a higher prevalence of tobacco use [4, 5].

Pathophysiology of Tobacco Dependence

The adverse health effects of tobacco smoke are caused by long-term exposure to nicotine, carbon monoxide and other combustion products. Nicotine has a psychoactive effect, causing a sense of pleasure by stimulating the release of dopamine and endogenous opioids in the brain. Furthermore, nicotine stimulates the release of adrenaline, which leads to increased activity of the central nervous system, the suppression of hunger, as well as elevated blood pressure and heart rate. With regular smoking of tobacco, the natural ability to experience pleasure atrophies, as a result of which, even with temporary deprivation of nicotine, the smoker develops an abstinent syndrome in the form of increased anxiety, irritability, restlessness, concentration disorders, insomnia and increased appetite. As a result, the emotional balance of the daily smoker is largely determined by the presence or absence of nicotine in the blood. The resulting vicious circle leads to the emergence of a strong psychophysical dependence comparable to the dependence on some opiates. Over time, the regular smoker further develops behavioral automatism and smoking rituals, which the smoker thinks help with coping with external stress, fatigue and boredom. In ICD-10, tobacco smoking is naturally attributed to mental and behavioral disorders associated with substance use (code F17.2 — tobacco dependence syndrome). The inhalation of smoke as such is a forced consequence of nicotine dependence, but it is responsible for the main adverse health effects. Tobacco smoking is a strong and often leading risk factor for a large number of cardiovascular, pulmonary and malignant diseases, reproductive disorders, delay in neuropsychiatric development in children, cataracts, osteoporosis, peptic ulcer, thyrotoxicosis etc. [5]. Overall, the effects of systematic smoking can be characterized as premature aging. A daily smoker loses about 15 years of normal life due to the early development of chronic diseases and premature death [3]. A doctor of any specialty can do a lot for the treatment and general improvement of their patients, if they include advice on quitting smoking in the mandatory list of their recommendations.

Counselling a Smoking Patient

Quitting smoking is the most important medical and social task, therefore, in developed health systems, doctors are financially and organizationally encouraged to advise smoking patients. As a rule, quitting smoking is not the main reason for seeking medical help, so the doctor should be ready to give this issue an additional 5-10 minutes of their counselling. It is recommended to carry out a brief consultation following five consecutive rules (originally, 5As: Ask; Advise; Assess; Assist; Arrange [6]):

1. **Ask** all patients about smoking
2. **Advise** all smokers to quit
3. **Assess** readiness to quit smoking
4. **Help** the patient to quit
5. **Support** during quitting

1. Ask all patients about smoking

Smoking status must be determined in each outpatient or inpatient older 18 years. A survey

(questionnaire) can be conducted by a doctor, a nurse before seeing a doctor or by an administrator. In addition to the recording of the smoking status, it is desirable to clarify the number of cigarettes smoked per day, smoking experience (in years), and to calculate the index in pack-years (IPY = [average number of cigarettes smoked per day x smoking experience in years] / 20). The smoking status (smokes, never smoked, quit smoking) is recorded in primary medical records, if possible — on the front side of the outpatient card or medical history.

2. Advise all smokers to quit

All smokers should be explicitly encouraged to stop smoking, emphasizing the positive effects of tobacco-free behavior. At the same time, it is desirable to avoid an authoritarian style of communication and accusatory tone. Examples of recommendations: "Quitting smoking is the best thing you can do for your health," "As your doctor, I strongly recommend you to quit smoking". The advice should be clear, unambiguous and personalized. For example, a young woman can be told about the importance of quitting smoking for the birth of a healthy child; parents will appreciate the example they give to children or the harm of passive smoking; in a middle-aged patient the impact of smoking on cardiovascular risk or the course of chronic diseases can be assessed. For example, "continued smoking can significantly worsen the course of your illness, and quitting will lead to rapid relief of symptoms and reduce the need for medication". All smokers should be offered assistance in quitting smoking.

3. Assess readiness to quit smoking

Signs of high readiness or motivation to quit are past attempts to quit smoking, as well as willingness to quit in the near future, including with medical support. Patient motivation and self-confidence can be assessed through two questions "Would you like to quit smoking?" and "How do you assess your chances of quitting successfully?". You can ask a neutral question "What do you think about your smoking?". Depending on the answer to these questions, smoking patients can be divided into three groups: not ready to quit and discuss quitting; not ready to quit at the moment, but not ruling out such a possibility in the future (double-minded); ready to quit in the near future.

Patients who do not want to quit smoking and even refuse to discuss this topic should be given the opportunity to change their mind: "I understand that you are not in the mood to quit now, but if you change your mind, I will always be happy to help you". During further visits, try to return to the topic of quitting smoking in a friendly manner, waiting for a change in the motivation of patients.

With patients who are not ready to quit in the near future, but in the long term do not exclude this possibility, a brief **motivational interview** (the original term — Motivational Interviewing [7]) is conducted. The motivational interview is conducted in a non-confrontational, friendly manner, helping the patient to resolve ambivalence about their own smoking based on long-term positive goals. Ambivalence refers to an internal conflict that is somehow present in most smokers, for example, when the patient is aware of all the unnatural and harmful effects of smoking, but prefers not to think about it or tries to find an excuse for their behavior. The task of the doctor is to show this internal conflict and help the patient to resolve it in a positive direction. The name "motivational interview" or "interview" involves the use of open, unbiased questions that help the patient to express their attitude to smoking. The simplified version of the motivational interview includes five main components (in the original — 5Rs: **R**elevance, **R**isks, **R**ewards, **R**oadblocks, **R**epetition [6]):

1. **Relevance.** Encourage the patient to speak out, why quitting smoking may be important to them personally, for example, "Why would you try to quit smoking?".
2. **Risks.** Ask the patient to voice the problems that he or she associates with smoking. For example, "Do you have health problems that are caused by smoking?", "Do you know anything about the risks to your health or the health of loved ones that may be associated with smoking?".
3. **Rewards.** Ask the patient to list the positive effects of quitting smoking. For example, "What good will happen in your life if you quit smoking?", "Do you know how quitting smoking can improve your health?", or "Will your loved ones be happy if you quit smoking?".

4. **Roadblocks.** Ask the patient about problems that prevent successful quitting and recommend ways to overcome them. This may be a fear of withdrawal or weight gain syndrome, the effect of a smoking environment, or a high level of stress. Patients who are afraid of withdrawal syndrome may be advised to gradually reduce the number of cigarettes smoked during the use of nicotine replacement therapy (see below).
5. **Repetition.** During subsequent visits, it is necessary to return to the topic of quitting smoking and evaluate changes in motivation. If the patient is still not ready to quit, you should end the interview on a positive note, for example, "It's not an easy task, but I'm sure that you can overcome your tobacco dependence, and I'm always ready to help you".

Risks and Rewards are especially important for patients who are doubtful about the need to quit smoking. For patients who want to quit, but are not confident in their ability to cope with smoking, special attention should be paid to the Roadblocks.

4. Help the patient to quit smoking

Patients who are ready to quit smoking in the near future should be given behavioral recommendations, and prescribed a treatment of nicotine addiction according to indications.

Through behavioral counselling, the doctor emotionally supports the patient and teaches the patient self-control skills, helping to overcome behavioral automatism and rituals associated with smoking. As part of the consultation, it is recommended to establish an exact date of quitting, discuss the importance of complete abstinence from smoking especially during the first two weeks; advise to consider protective behavior in typical situations that can provoke a breakdown (excitement, boredom, alcohol consumption, smoking company); recommend ways to overcome the sudden desire to smoke, for example, deep and slow abdominal breathing. It is also recommended to discuss with the patient the main positive expectations and benefits associated with quitting smoking and support the main motive for which an attempt to quit is taken. Patients who are concerned about weight gain should be given recommendations for a balanced diet (e.g., healthy eating pyramid) and increased physical activity. To restore the natural emotional balance as soon as possible, the patient is recommended to avoid conflict situations, to strive for positive emotions, to sleep enough, to avoid alcohol consumption and to acquire relaxation skills.

Drug treatment helps to stop the symptoms of withdrawal syndrome and craving for a cigarette, increasing the chances of successful quitting at least twofold [8]. The stronger the nicotine dependence, the more justified the prescription of drugs is. Signs of strong nicotine dependence are daily smoking of more than 10 cigarettes, smoking the first cigarette within 30 minutes of waking up (morning smoking), as well as typical manifestations of withdrawal syndrome in past attempts to quit or forced abstinence from smoking. Drug treatment is not indicated for those who do not smoke every day or smoke less than 5 cigarettes a day. Nicotine withdrawal syndrome takes place 2 to 4 weeks; drug treatment is prescribed for a period of 8 to 10 weeks. The most studied means of treating tobacco dependence are drugs for **nicotine replacement therapy (NRT)**, and they are most often recommended as first-line drugs. Medical nicotine reduces the symptoms of withdrawal syndrome without development of addiction. For those who smoke 5-10 cigarettes a day, it is recommended to use short-term NRT drugs as needed: Nicorette tablet, chewing gum or spray. A single dose of the drug is usually 2 mg and can replace about 2 cigarettes. Spray is the fastest formulation. When smoking 10-20 cigarettes per day, it is recommended to use Nicorette patch with slow nicotine release having 16-hour action at a dose of 15 or 25 mg; a patch of 25 mg when smoking 20 cigarettes (pack) or more, and one of the short-term agents (chewing gum, tablet, spray) as needed. Niquitin patch with 24-hour action, 21 (14, 7) mg is recommended for severe morning smoking or smoking around the clock (working at night). NRT is prescribed in a full dose two weeks before the date of quitting against the background of a reduction in the number of cigarettes smoked or directly on the day of quitting smoking and lasts for 8 to 10 weeks. During the last weeks of treatment, a Nicorette patch, 10 mg, or short-term agents are used as needed. NRT drugs are usually well tolerated and are sold over-the-counter. In rare cases, there may be side effects associated with the

adrenergic action of nicotine (heartbeat, headache, insomnia, increased BP) or local allergic reactions when using the patch. In these cases, it is recommended to reduce the dose or change the type of drug for NRT. Limitations for NRT drugs are exacerbations of cardiovascular diseases and pregnancy.

Another group of drugs for the treatment of tobacco dependence is represented by nicotinic agonist-antagonist (NAA). They competitively bind to the receptors of the pleasure center, blocking the access of nicotine to the brain, and at the same time they alleviate manifestations of withdrawal syndrome due to the stimulating dopaminergic effect. Herbal NAA Tabex (INN — Cytisine) has been successfully used to treat tobacco dependence in Eastern Europe for more than 50 years. In the last decade, in high-quality clinical trials, this drug has proven to be highly effective and safe, comparable to other drugs for the treatment of tobacco dependence [9]. Tabex is prescribed 1-5 days before the date of quitting against the background of a decrease in the number of cigarettes smoked and is taken according to the scheme within one month. The drug is usually well tolerated and sold over-the-counter, contraindications are generally similar to NRT. The advantage of the drug is its low cost, and the disadvantages include a complex regimen.

The only synthetic NAA on the market is Champix (INN — Varenicline). Champix is comparable in effectiveness to combined NRT, increasing the chances of quitting smoking approximately three-fold [7]. The drug is prescribed two weeks before the date of quitting in a dose of 0.5–1 mg per day, then taken for 10 weeks in a 1 mg tablet 2 times a day. Champix is generally well tolerated, the most common side effect is nausea (in up to 30% of patients). Previously, there were concerns about increasing the risk of suicidal and cardiovascular events while taking Champix, but in recent major studies, these data are not confirmed [10, 11]. Champix is prescribed by the attending physician, taking into account the contraindications and individual characteristics of the patient; it is available by prescription.

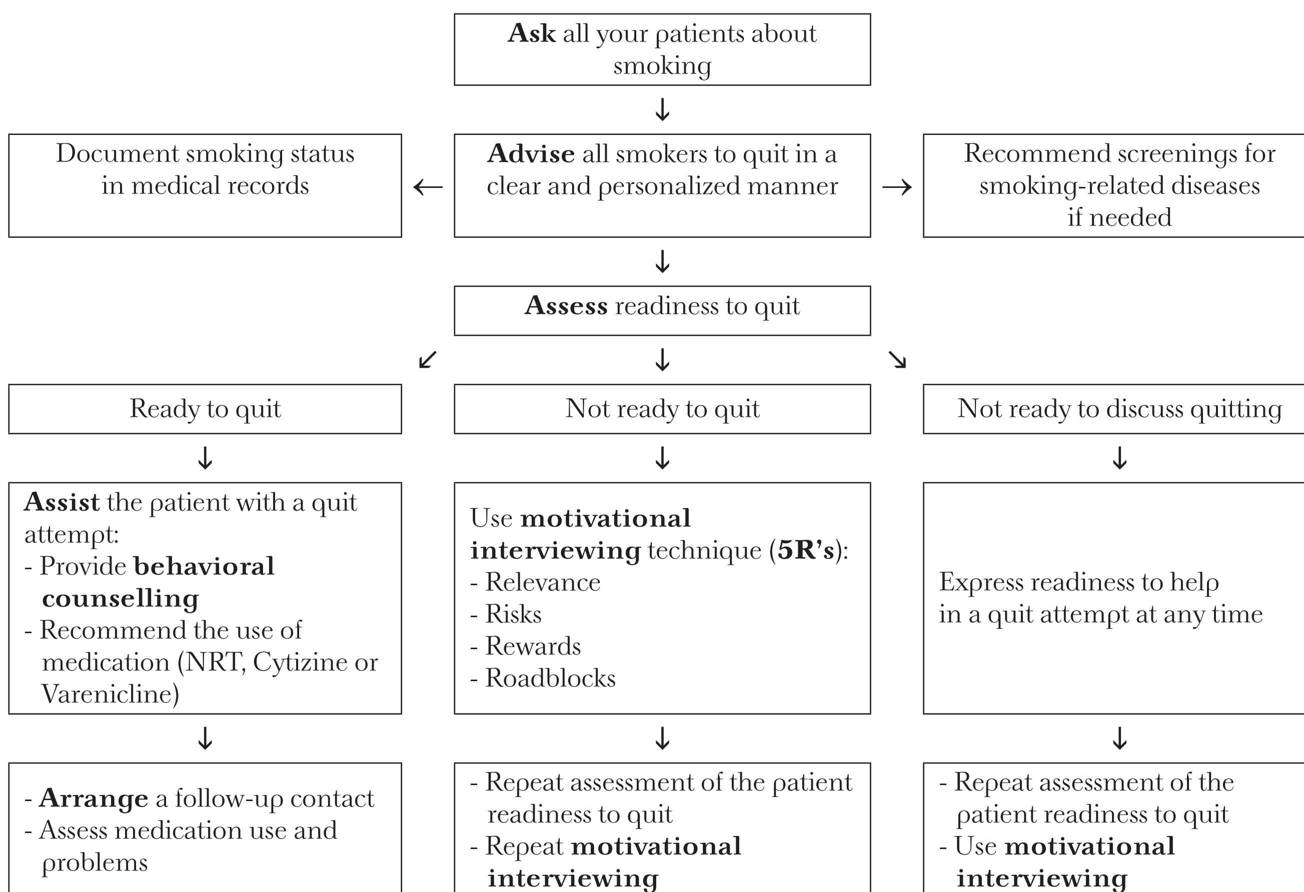

Figure 1. *Smoking cessation counselling approach*

5. Support during quitting

Patients who quit smoking are recommended to repeat consultations a week and a month after the date of quitting. During a re-visit, it is necessary to assess the severity of withdrawal syndrome, to clarify the effectiveness and tolerability of drugs and, if necessary, to adjust the dose or dosage form of drugs for NRT, to assess weight changes. It is also useful to repeat behavioral counselling with an emphasis on positive changes in mental and physical health after quitting and to emotionally support the patient. In case of smoking relapse, it is necessary to analyze the causes of the failure together, recommend a second attempt, and, if necessary, to consider another option of drug treatment.

The patient is considered to be cured of tobacco dependence, if after 6 months from the date of quitting the patient manages to completely refrain from smoking. By this time, in majority of patients, natural self-regulation of mood is restored and smoking rituals die out.

Examination for early diagnosis of smoking-associated chronic diseases (screening).

All smokers at the age of 40 years and older must check their blood pressure and plasma cholesterol and assess 10-year cardiovascular risk using a predictive SCORE scale or analogues (e.g., ASCVD). Patients at the age of 55-85 years with long smoking experience (IPY ≥ 30) are recommended to perform annually low-dose computed tomography for early diagnosis of lung cancer. Smoking men at the age of 65 years and older are recommended a single ultrasound scanning of the abdominal aorta for early diagnosis of an aneurysm [12].

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References

1. WHO report on the global tobacco epidemic, 2017: monitoring tobacco use and prevention policies. Geneva: World Health Organization. 2017; 263 p.
2. Global Adult Tobacco Survey: Russian Federation. Executive summary 2016. Copenhagen: World Health Organization Regional Office for Europe. 2016; 9 p. [In Russian].
3. Centers for Disease Control and Prevention. Current Cigarette Smoking Among Adults—United States, 2016. Morbidity and Mortality Weekly Report. 2018; 67(2): 53-9 [accessed 2018 Feb 22].
4. Kim J., Fleming C.B., Catalano R.F. Individual and social influences on progression to daily smoking during adolescence. Pediatrics. 2009; 124(3): 895-902.
5. West R., Shiffman S. Fast Facts: Smoking Cessation. Second edition. Health Press Limited, Oxford, UK. 2007; 81 p.
6. Toolkit for delivering the 5A's and 5R's brief tobacco interventions in primary care. Geneva: World Health Organization. 2014.
7. Miller W.R., Rollnick S. Motivational Interviewing: Preparing People for Change. M.: Eksmo. 2017; 544 p.
8. Cahill K., Stevens S., Perera R. et al. Pharmacological interventions for smoking cessation: an overview and network meta-analysis. Cochrane Database Syst Rev. 2013; 5:CD009329. doi: 10.1002/14651858.CD009329.pub2.
9. Leaviss J., Sullivan W., Ren S., et al. What is the clinical effectiveness and cost-effectiveness of cytisine compared with varenicline for smoking cessation? A systematic review and economic evaluation. Health Technol Assess. 2014; 18(33): 1-120.
10. Anthenelli R.M., Benowitz N.L., West R., at al. Neuropsychiatric safety and efficacy of varenicline, bupropion, and nicotine patch in smokers with and without psychiatric disorders (EAGLES): a double-blind, randomised, placebo-controlled clinical trial. Lancet. 2016; 387(10037): 2507-20.
11. Benowitz N.L., Pipe A., West R., at al. Cardiovascular Safety of Varenicline, Bupropion, and Nicotine Patch in Smokers: A Randomized Clinical Trial. JAMA Intern Med. Published online on April 09, 2018. doi:10.1001/jamainternmed.2018.0397.
12. The Guide to Clinical Preventive Services 2014: Recommendations of the U.S. Preventive Services Task Force. Rockville (MD): Agency for Healthcare Research and Quality (US). 2014; 123 p.

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