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Guidelines on tobacco dependence treatment.

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Guidelines on tobacco dependence treatment comprise latest updated information on the world-accepted means of tobacco dependence assessment, as well as basic ways of smoking cessation with description of recommended medications. The guidelines are aimed at family practitioners, pulmonologists, cardiologists and other medical specialists.

GUIDELINES

ON TOBACCO DEPENDENCE TREATMENT

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Introduction

Presently smoking has been proved to be risk factor and cause of more than 25 diseases, starting with lung cancer, chronic obstructive pulmonary disease, coronary artery disease and other. One third of all Earth population aged 15 and more smoke, and globally smokers shorten their lives for 22 years on average. Smoking related mortality exceeds mortality of alcohol abuse, infectious illnesses, intoxications, gunshots, and sexually irresponsible behavior with car accidents, taken together. WHO estimates smoking to be leading cause of 3 million people worldwide every year, whereas only in the US 470 deaths occur annually, and 12-15 thousand – in Kyrgyz Republic.

Tobacco smoke contains approximately 4000 substances, for many of those are pharmacologically active, carcinogenic, toxic and mutagenic. The greatest part of those are the causative agents for respiratory diseases, that demonstrate increasing morbidity and mortality in Kyrgyz Republic. Up to 80-90% of respiratory diseases are due to tobacco products smoking. In 2000 respiratory diseases made 31.2% of all morbidity in Kyrgyz Republic, and they were responsible for almost 13% of all deaths. That is why presently much attention is being drawn to smoking reduction programmes for population in general on global and national levels as well as for particular smoking patients.

Framework Convention on Tobacco Control (FCTC) is the first in human history treaty that has been adopted with World Health Organization (WHO), and it is supposed to promote reduction in smoking intensity and, thus, smoking related diseases. FCTC was officially opened for signing from 16th till 22nd of June 2003 in Geneva and in Central UN facilities afterwards. Kyrgyzstan is the 91st and the first ever in CIS country to have signed the Convention. The document with all possible means will promote establishment of global trends in tobacco demand along with tobacco supply reduction.

The Kyrgyzstan “Health care in Kyrgyzstan in the 21st century” programme sets up the following objectives:

- Increase in number of people, aware of smoking and tobacco harmfulness up to 90%;

- Increase in number of people willing to stop smoking and at the same time undertaking certain actions in this direction, by 50%;
- Decrease in number of people to start smoking by 15-20%;
- Decrease in number of Kyrgyz Republic smoking population by 10-25%, whereas among smoking medicals by 50%.

This programme implies preparation of addressed practical guidelines to be published with the information on smoking prevention and cessation as one of the strategies on improvement in information and academic studies demand. Besides, alcohol and drugs consumption and their dependence treatment are also priorities of the programme.

All that is the evidence for necessity to set smoking cessation as one of the most important components of not only treatment of multiple diseases, but even of basic, ultimate parts building healthy environment for population to exist and healthy lifestyle formation. Smoking cessation programmes must be applicable at all possible levels of physician and patients interaction. When applying for medical assistance of any kind, patients must be subjected to tobacco dependence detection, its severity estimation, followed by intensive counseling on smoking reduction or cessation with motivation to do so. Smoking cessation programmes must become an essential component of all patients’ treatment that tend to have this dependence. Presently medicals possess large number of these dependence correction methods, and the most effective of those are educational interventions and nicotine replacement therapy.

All smoking cessation programmes, even the simplest ones, are cost-effective. Ceasing smoking, induced by physician’s counseling, bears incomparably larger positive effect on individual health, than any other possible medical intervention. Hence, to assist any patient in his cessation attempts is the best physician can do as a medical. Even two-minute unstructured patient counseling doubles yearly number of smoking cessation cases, that totally makes 2.5%. As a results of a simple two-minute conversation 1 smoker will avoid preliminary death of 100 patients counseled. Totally of those 100 5 patients will stop smoking during a year, whereas half of them as self-initiated incentive and another half as doctor-initiated. Accordingly, 1 avoided preliminary death case will add from 15 to 20 years of extra-life for a patient. Such an outstanding result has been achieved through 3 hours and 20 minutes counseling time (2 minutes for each of 100 patients). No one other existing physician’s inter-

vention can result in 15-20 years of life increase, when only 3 hours and 20 minutes are spent for that.

Diagnostic criteria of nicotine dependence and abstinence syndrome

Despite mortality of smoking is mainly made for such cigarette smoke components as cancerogenes, tar, carbon monoxide and other gases, addiction to smoking is formed through nicotine. Nicotine is one of the most spread drug substances. The addiction to nicotine occurs due to nicotine ability to interact with acetylcholine receptors with stimulation. On fig. 1 addiction curves of several addictive substances are described, and it demonstrates nicotine can be that powerful to cause predilection as morphine, cocaine and amphetamine:

International classification of diseases (10th revision) separates in class V (mental and behavioural disorders) subgroup **F17**. - «Mental and behavioural disorders, caused by tobacco use». In regards to nicotine dependence, as well as for disorders, caused by alcohol, opioids, cannabinoids, cocaine, sedative and soporific medications, and hallucinogens use, the fourth index is added:

.0 Acute intoxication. This is a status with consciousness, cognitive ability, perception, emotions, behaviour and other psychophysiological functions and reactions disturbances. These disturbances are directly linked with acute pharmacological influence of the substance and fully disappear in certain period of time.

.1 Pernicious use. The way of psychoactive substance use is the reason for health burden. This burden itself can be physical or mental.

.2 Dependence syndrome. This is a complex of behavioural, cognitive and physiological symptoms that arise when the substance has been used

repeatedly, and usually this syndrome includes strong desire to take it; difficulties to control its use; persistent use in spite of the pernicious consequences; preference to use the psychoactive substance to the detriment of other activities and obligations fulfillment; increase in admissible use limitations and sometimes abstinence status.

.3 Abstinence. A group of symptoms of various severity and features, that arise when complete or partial elimination of psychoactive substance from human organism occurs after its constant use. Discontinuation or reduction in nicotine use causes at least 5 of the listed symptoms within 24-hours period:

- inadequate reality perception or depression;
- insomnia;
- irritability, feeling of disappointment or aggression;
- anxiety;
- poor concentration;
- recklessness;
- decreased heart rate;
- weight and appetite gain;

The listed symptoms cause disturbances of human body functions of various severities.

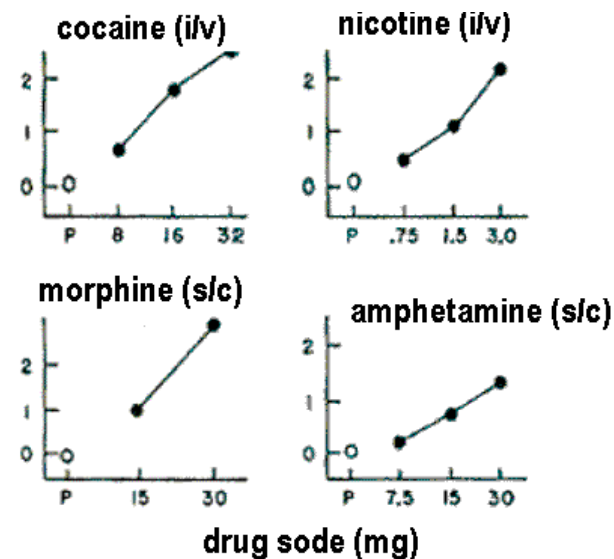


Fig. 1. Euforiant scale

WHO recommends defining smokers as follows:

A: Smokers

- Daily smokers
- Occasional smokers
 - reducers
 - continuing occasional
 - experimenters

B: Non-smokers

- Ex-smokers
- Ex-occasional smokers
- Never smoker

C: Ever smokers

A **smoker** is someone who, at the time of the survey, smokes any tobacco product either daily or occasionally. A **smoker** may be further classified into two categories: **daily smoker** (someone who smokes any tobacco product at least once a day, with the exception that people who smoke every day, but not on days of religious fasting, are still classified as daily smokers) and an **occasional smoker** (someone who smokes, but not every day). **Occasional smokers** include: (1) **Reducers** – those who used to smoke daily but at the time of the survey do not smoke every day; (2) **Continuing occasional** – those who have never smoked daily, but who have smoked 100 or more cigarettes (or the equivalent amount of tobacco), and at the time of the survey smoke occasionally; (3) **Experimenters** – those who have smoked less than 100 cigarettes (or the equivalent amount of tobacco), and smoke occasionally at the time of the survey.

A **non-smoker** is someone, who, at the time of the survey, does not smoke at all. Non-smokers can be classified into three categories: (1) **Ex-smokers** (those who were formerly daily smokers, but are not smoking at all at the time of the survey); (2) **Ex-occasional smokers** (those who were formerly occasional smokers, but were never daily smokers and who smoked 100 or more cigarettes (or the equivalent amount of tobacco) in their lifetime); (3) **Never smokers** – those who either (i) have never smoked at all or (ii) have never been daily smokers and have smoked less than 100 cigarettes (or the equivalent amount of tobacco) in their lifetime.

Basic principals of tobacco dependence treatment

Smoking cessation should be set as an objective due to the following:

- Smoking cessation has major and immediate health benefits for people of all ages, with or without smoking-related diseases
- Former smokers live longer than continuing smokers
- Women who quit before pregnancy or within the first 4 months reduce their risk of having a low birth weight baby

Tobacco dependence treatment is based on evidence-based medicine statements:

1. Tobacco dependence is a chronic condition that frequently demands repeated intervention. The majority of current smokers will be able to eventually quit smoking only after several treatment courses.
2. Physician should assess degree of dependence along with the risk of smoking-related diseases, that must be followed with documenting smoker's status and ability to offer every smoking patient treatment, relevant to degree of his tobacco dependence:
 - For the patients with high motivation to stop smoking – treatment course aiming to entirely get rid of the habit:
 - For the patients unwilling to stop smoking with reluctant attitude to discussion – programme aiming to raise motivation to quit or to reduce smoking intensity.
3. Intensive physician counseling offered to patient must be obligatory component of every treatment course.
4. Treatment programme must, if needed, comprise pharmacotherapy with the use of nicotine medications (NRT): nicotine chewing gum, nicotine patch and upon indications, antidepressant of norepinephrine, serotonin and dopamine reuptake inhibitors group – bupropion (Zyban).
5. Treatment programme of every smoking patient should reserve the possibility to detect and adequately treat chronic smoker's bronchitis.

Meta-analytic conclusions on total intervention efficacy programmes are compiled in fig. 1.

Meta-analysis of various interventions efficacy on 6 months follow-up

Self-initiated help	3-8%
Physician's advice to stop	10%
Physician's advice and brief discussion (3 min.)	13%
Telephone counseling and follow-up	13%
Group counseling	14%
Individual counseling (several sessions)	17%
Behavioral support	11-20%
NRT (chewing gum)	24%
NRT (patch)	18%
NRT (nasal spray)	30%
NRT (inhaler)	23%
Combined NRT (2 medications)	29%
Nortryptiline	30%
Bupropion	30%

US Department of Health and Social Services, 2000

Fig. 1. Efficacy of various interventions used for tobacco dependence treatment

Smoker's status assessment

As many trials demonstrate, more than 70% of patients applying for medical assistance on any reason are willing to stop smoking. Many of those have undertaken at least one attempt to do so on their own,

however, abstinence symptoms to arise and interfere with successful result, lead to failure. Many researchers conclude majority of current smokers estimate physician's advice to give up smoking as an important one to mold motivation for complete abstinence. Besides, with the origination of affordable nicotine medications it has been made possible to conduct short-term treatment courses that many unwilling to stop smoking patients can painlessly stand. These medications are capable of reducing smoking intensity with no abstinence syndrome.

Thus, medicals are in a unique position to be able to reveal and treat tobacco users. Unfortunately, very few physicians can claim their high involvement in treating people smoking or using tobacco. More than one third of daily smokers note physicians have never questioned them on their harmful habit, nor have they advised to stop smoking.

The first step towards successful quit is smokers detection. To succeed with this, every physician working with any profile patient must set up conversation on smoking in the following order:

1. Have you ever smoked tobacco? If a patient answers «NO», you can see never smoker in front of you.
2. Should a patient reply «YES», you must go on questioning with «Do you continue to smoke now (these days)?». In case he says «NO», this patient is a former smoker. Otherwise you talk to current smoker.
3. Then you must ask the next core question: «Do you smoke every day or occasionally once in several days?». If he says «Daily», you deal with daily smoker, otherwise – occasional smoker (WHO definition).

Then working with daily or occasional smokers you are supposed to record or register their smoker's status that usually consists of the following points:

1. Assessment of smoking-related diseases risk.
2. Assessment of degree of nicotine dependence.
3. Assessment of motivation to stop smoking.
4. Assessment of motivation to smoke.
5. Assessment of psychological and social triggers of smoking and nicotine dependence.

The information received enables to divide patients into 3 groups for further intervention:

1. Current smokers with a firm desire to top smoking.
2. Current smokers with low of zero motivation to stop smoking presently or in the nearest future.
3. Occasional smokers.

1. Assessment of smoking-related diseases risk.

Assessment of smoking-related diseases risk is the leading factor in smoker's status and bears an important role in motivating patients to give up smoking. Smoker's index (SI) is being used for that that can be easily calculated with the by means of the formula:

$$SI = (\text{number of daily cigarettes}) \cdot 12$$

SI > 140 indicates the risk of chronic smoking-related diseases, first of all chronic obstructive pulmonary disease, is very high.

SI calculation must be done for every smoking patient applying for any kind of medical assistance, either out- or inpatient care. The latter should be registered as a part of patient's profile in his case and then presented for patient's information and further discussion.

2. Assessment of degree of nicotine dependence

This is better done with Fagerstrom test for nicotine dependence.

<i>Question</i>	<i>Answer</i>	<i>Your answ.</i>	<i>P.</i>
1. How soon after you wake up do you smoke your first cigarette?	Within 5 minutes		3
	5-30 minutes		2
	30-60 minutes		1
	More than 60 min		0
2. Do you find it difficult to refrain from smoking in places where it is forbidden, e.g. in church, at the library, in cinema etc?	Yes		1
	No		0
3. Which cigarette would you hate most to give up?	The first one in the morning		1
	All others		0

4. How many cigarettes/day do you smoke?	10 or less		0
	11 – 20		1
	21 – 30		2
	31 or more		3
5. Do you smoke more frequently during the first hours after waking than during the rest of the day?	Yes		1
	No		0
6. Do you smoke if you are so ill that you are in bed most of the day?	Yes		1
	No		0

Table 2. Fagerstrom test for Nicotine Dependence (FTND)

Total sum should be calculated to distinguish between various degrees of dependence:

1. 0-2 – Very weak dependence.
2. 3-4 – Weak dependence.
3. 5 – Average dependence.
4. 6-7 – Severe dependence.
5. 8-10 – Very severe dependence.

3. Assessment of motivation to stop smoking

Readiness to stop smoking, which is motivation to do so, can be easily determined with the use of motivation to stop smoking test (table 3).

<i>Question</i>	<i>Answer</i>	<i>Your answ.</i>	<i>P.</i>
1. Would you quit if it were easy?	Definitely no		0
	Probably no		1
	Probably yes		2
	Most probably yes		3
	Definitely yes		4
2. How strong is your desire to stop smoking?	No desire		0
	Weak desire		1
	Average desire		2

	Strong desire		3
	Very strong desire		4

Table 3. Motivation to stop smoking test.

Points sum on both questions reflects readiness to stop smoking now. The test result ranges from 0 (no motivation) to 8 (high motivation). The more total points sum is, the higher is patients' motivation not to smoke. The motivation to stop degree can be evaluated according to the scale:

1. Total sum exceeding 6 points is typical for patients with high motivation to stop, and the patient is ready for long-term treatment programme aiming to entirely give up smoking.
2. Test result from 4 to 6 usually reflects weak motivation, and working with the patient you can offer short-term programme of smoking reduction or motivational programme.
3. Test result below 3 points means patient has no motivation to stop, and this patient needs intensive motivational programme.

Medical professionals must always consider they would never attain 100% success within 1 year of intervention even in regards to highly motivated patients. This phenomenon can be explained by the fact of severe nicotine dependence development, and this dependence can demand repeated and persistent courses of treatment.

4. Assessment of motivation to smoke

Motivation to smoke can be analyzed when the following test is applied (table 4).

	Always	Fre- quently	Occa- sionally	Seldom	Never	Answer
1. I smoke cigarettes to keep myself from slowing down.	5	4	3	2	1	
2. Handling a cigarette is part of the enjoyment of smoking it.	5	4	3	2	1	
3. Smoking cigarettes is pleasant and relaxing.	5	4	3	2	1	

4. I light up a cigarette when I feel angry about something.	5	4	3	2	1	
5. When I have run out of cigarettes, I find it almost unbearable until I can get them.	5	4	3	2	1	
6. I smoke cigarettes automatically, without even being aware of it.	5	4	3	2	1	
7. I smoke cigarettes for stimulation, to perk myself up.	5	4	3	2	1	
8. Part of the enjoyment of smoking a cigarette comes from the steps I take to light up.	5	4	3	2	1	
9. I find cigarettes pleasurable.	5	4	3	2	1	
10. When I feel uncomfortable or upset about something, I light up a cigarette.	5	4	3	2	1	
11. I am very much aware of the fact when I am not smoking a cigarette.	5	4	3	2	1	
12. I light up a cigarette without realizing I still have one burning in the ashtray.	5	4	3	2	1	
13. I smoke cigarettes to give myself a "lift".	5	4	3	2	1	
14. When I smoke a cigarette, part of the enjoyment is watching the smoke as I exhale.	5	4	3	2	1	
15. I want a cigarette most when I am comfortable and relaxed.	5	4	3	2	1	
16. When I feel "blue" or want to take my mind of cares and worries, I smoke a cigarette.	5	4	3	2	1	
17. I get a real gnawing hunger for a cigarette when I haven't smoked for a while.	5	4	3	2	1	
18. I've found a cigarette in my	5	4	3	2	1	

mouth and didn't remember putting it there.						
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Table 4. Motivation to smoke test.

Six various resulting scales of the test can be computed adding points of the question sets:

1. Stimulation: 1 + 7 + 13.
2. Handling a cigarette: 2 + 8 + 14.
3. Pleasurable relaxation: 3 + 9 + 15.
4. Crutch: Tension reduction: 4 + 10 + 16.
5. Craving: Psychological addiction: 5 + 11 + 17.
6. Habit: 6 + 12 + 18.

Total scales may result from 3 to 15:

1. Weak motivation – less than 7.
2. Moderate motivation – 7-11.
3. Strong motivation – more than 11.

It is so reasonable to do that in healthcare practice because answers analysis will enable physician along with his patient to point out certain factors that mostly predispose smoker to smoke, that will eventually help them both clarify particular reasons to smoke, and also mark the possible means to avoid those when undertaking quit attempt. Patient must be informed in advance quitting smoking to revolve his lifestyle and the basic motto for the earliest abstinence should be «Learn to live new life!».

The results of tests available must be immediately put into case history or outpatient card.

5. Assessment of psychological and social triggers of smoking and nicotine dependence

Psychological and social smoking triggers estimation bears secondary importance in diagnostics, although they both are ultimately essential to plan future intervention programme. Meanwhile, they can help medical to draw patient's attention to the aspects of his life, needing to be altered within quit attempt. These changes will build up behavioural therapy or behaviour changes strategy.

Patient needs to answer the following questions:

1. Does patient's environment predispose him to continue smoking?
2. Is smoking allowed on a workplace?
3. Is smoking allowed at home and in a vehicle?
4. What is a number of smoking friends?
5. Does a spouse smoke? Do close relatives feel free to smoke?
6. Does patient drink alcoholic beverages, use marijuana or other drugs?

The presence of another smoking person in a family, alcohol and other addictive substances abuse are the most significant factors to be impediments for successful quit attempts. It is strongly recommended for smoking spouse or close relative to be equally involved in nicotine dependence treatment. Affective disorders, especially depressions, are very frequently comorbidities of nicotine dependence, that is why smokers often have high incidence of anamnestic severe depression attacks. Hence, abstinence can go along with depressive attack that, in turn, can bring smoker for smoking again, and even more than prior to quit attempt.

Physician's strategy on the first visit

- Claim fact of smoking in case history, along with number of smoked cigarettes, FTND score and motivation to stop smoking test.
- Set up plan of counseling and visits for highly motivated smokers (4 times a month during the first month and once or twice a month after).
- Set up the second counseling session for low motivated patients.

Physician's strategy of the second and subsequent visits

A. Treatment programme for patients ready to stop smoking (motivated smokers)

Long-term treatment programme is aimed at patients with a firm stated desire to stop smoking. (motivation to stop test result exceeds 6). Programme duration is 6 months to 1 year and it is made out of regular meetings of physicians with smokers (the so-called structured counseling), which must be more frequent within the first quit month, as well as of nicotine replacement therapy (NRT) intake. The medication treatment is conducted on an individual basis and is firstly defined upon patient's degree of nicotine dependence. Starting from the first days of quit attempt patient is strongly recommended to change his behaviour to finally get rid of the smoking habit as a habit. Thus, long-term treatment course consists of three components: counseling, patient's behaviour and nicotine replacement therapy. The fourth mandatory component of treatment is detection and management of chronic bronchitis, which must be supported by adequate prevention of its exacerbation within the first two weeks of abstaining from smoking.

1. Structured counseling

Every patient's visit should be accomplished with physician's conversation that is a good remedy to explain necessity to stop smoking for a patient, and to encourage and ensure patient's desire to start fighting the habit. Kottke et al. reported the results of their 39 controlled trials meta-analysis, where at the end of 6-months observation after active intervention the principal predicting factors of smoking cessation programmes were the number of patient's visits to medical, programme duration, personal peculiarities of a patient and the form of their interaction or contact (the most successful is «face-to-face» counseling). While at the end of 12 months the most important was programme duration. Authors concluded nothing could be more important in these kinds of interventions as firm, persistent and repeated patients reassuring.

Physician should let his patient feel he will be with the patient for the whole treatment course, support him, thoroughly estimate his status and adjust treatment regimen. The conversation should be held in a clear, supportive manner to let patient know it is entirely targeted to him.

The following list of issues that must be addressed within counseling is the core list of items to discuss when counseling is structured:

- Expression of support, congratulations with the choice to launch giving up smoking and sincere wish to succeed
- Preparation – realization smoking as a habit, clarification of smoking triggers and maintaining factors
- Making a list of all possible reasons that must be individually meaningful for a patient to stop smoking with simultaneous stress on those
- Setting up quit date with a patient
- Molding negative attitude to smoking – making this habit not pleasurable and not enjoyable behaviour
- Application for spouse and friends for support
- Explanation of matter and contents of abstinence syndrome making a list of symptoms
- Explanation of recovery mechanism in time
- Useful advices to change behaviour (behavioural therapy)
- Explanation of matter of NRT providing detailed information on indications, contraindications, intake regimens, and preparations available
- Conversation on individual experience of NRT and other pharmacotherapies intake during previous quit attempts

When subsequent visits, medical must assist patient in managing problems and obstacles caused by abstinence, that is abstinence syndrome as it is, as well as motivate unsuccessful quitters to repeat quit attempt.

2. Patient's behaviour

Every patient must be fully aware of his behaviour strategy, individually made for him. The desire and ability to adjust one's behaviour aiming to entirely exclude smoking of individual life is one of the most important factors of successful treatment of tobacco dependence. Estimation of motivation to give up smoking is the basis to establish a plan

of future behaviour. This means a patient is recommended to plan his behaviour so that to avoid facing factors usually leading to smoking, and to be powerful to find adequate substitute for cigarettes when quitting.

1. Physician must help patient to build up a plan to stop smoking.
2. Physician must encourage patient to set up quit date.
3. Patient is recommended to warn and inform his family, usual smoking partners and friends of his attempt to stop smoking with request for understanding and support.
4. Patient must prepare himself for the possibility of abstinence syndrome, which is more noticeable during the first weeks of quit attempt, although accurate administration of nicotine medications is supposed to exclude them at all or to maximally diminish them. One symptom – desire to smoke – will persist for a long time, recurrent from time to time and the patient must be ready for that.
5. All cigarettes and other tobacco products must be immediately removed from their usual locations. Patient must request his family members along with colleagues not to leave cigarettes on the places he could easily notice them, and abstain from smoking when he is present, when possible. This is very important, especially during the first 3 weeks of hard time.
6. When quitting, a patient must not do even a puff. Should this happen, the present attempt must be considered unsuccessful, and the new preparation procedures must be launched. Physician is the one to support patient this time and the one also to convince patient not to give up and repeat quit attempt.
7. If a patient recollects his previous quit attempt, physician along with a patient must analyze the reasons for it to have been unsuccessful with the optimal use of previous experience to master future quit attempt.
8. As far as alcohol intake tends to frequently be causative agent for unsuccessful quit attempt, patient must be persistently encouraged to reduce consumption or to abstain from its use, especially within the first weeks of changes.

3. Nicotine replacement therapy (NRT)

The aim of nicotine replacement therapy is to diminish or maximally reduce the abstinence syndrome. NRT should be obligatory treat-

ment component of patient whose nicotine dependence, measured with FTND, result is 4 or more.

NRT usually consists of two components:

1. Basic therapy for regular use. Its goal is to sustain constant blood nicotine concentration at its usual habitual level for 1-2 weeks to eliminate possibility for abstinence syndrome. Then basic therapy medications dose must be gradually reduced down to their discontinuation that will eventually result in zero nicotine blood concentration.
2. Additional nicotine medication intake in case abstinence symptoms arise or grow. Also, it should be considered when the typical intensive smoking situation makes a patient wish to smoke more than ever.

Basic therapy is a constant intake of nicotine patch or nicotine chewing gum, and the choice here depends on the patient's preferences and previous quit attempts efficacy. However, NRT does not completely imitate blood nicotine concentrations alterations during smoking or the use of any other possible tobacco product (fig. 2).

All smokers are recommended to use nicotine patch, even if its previous use was low effective. When the treatment starts, higher doses are prescribed, which are subsequently reduced, and the rate of this dose reduction depends of the degree of correction. The general rules of nicotine patch dosage are listed in the table:

1. If daily dose of patient's smoking does not exceed 15 cigarettes, inception nicotine patch dose is usually 7-14 mg/day of 24-hours patch (NICOTINELL) or 5-10 mg/day of 16-hours patch (NICORETTE), additionally you can prescribe nicotine chewing gum on demand. In this case even no NRT treatment regimen is applicable.
2. If daily dose ranges from 15 to 20 cigarettes, initial patch dose is 15-21 mg/day (10-15 mg/day).
3. If daily dose ranges from 20 to 40 cigarettes, initial patch dose will make 21-35 mg/day (15-25 mg/day).
4. If daily dose exceeds 40 cigarettes, initial patch dose must be equal to 42 mg/day (30 mg/day).

When chewing gum is being used for therapy, initial dose is 4 mg every 2 hours, whether degree of nicotine addiction with FTND is 7-8 points, otherwise 2 mg every 2 hours (degree of addiction 4-6).

The first administration of basic nicotine replacement therapy must consider maximal tolerable doses of nicotine medications, and those recommended for certain degree of addiction. Many authors reported half of unsuccessful quit attempts occurred due to insufficient NRT doses. After the second counseling you can alter (reduce the dose) basic therapy, that will depend on the severity of abstinence syndrome as the way patient reports to feel. For instance, patient can leave the use of 4 mg chewing gum for morning and first half of a day only, if he/she states he has smoked mainly in the morning, after meals and in the evening, in the meantime the resting chewing gum dose should be made equal to 2 mg. Basic therapy with the maximal dose of medications lasts at least 2-3 weeks, and then you should gradually reduce the dose and eventually discontinue medications use when constant abstinence symptoms vanish. So the leading reason to reduce the dose and discontinue basic therapy is the feeling of a patient.

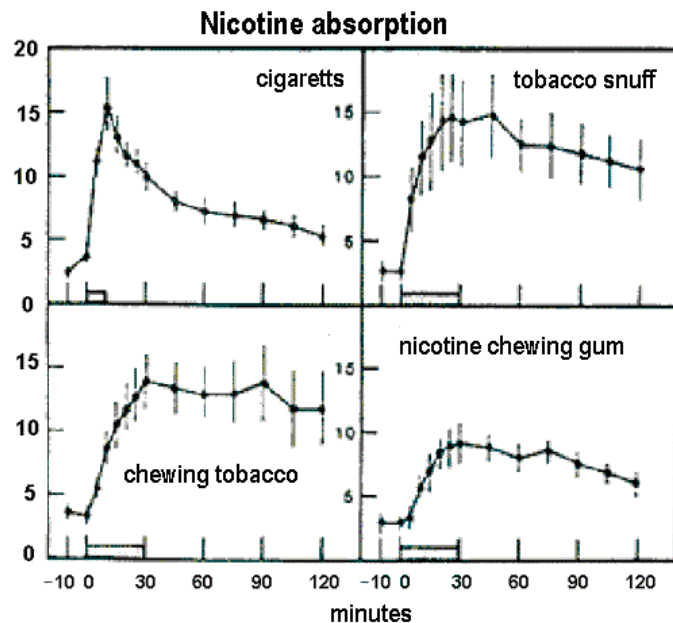


Fig. 2. Comparative nicotine blood concentration profiles with various ways of nicotine delivery.

Physician should advise a patient on the additional intake of NRT, and the latter is definitely needed in the following cases:

1. Approach of any abstinence symptom.
2. Patient finds himself surrounded by smoking friends.
3. Typical situation for smoking (excitation, irritation, heavy meals, party, etc.).

Additional NRT administration may last longer than basic one, however it may last pretty long and that is defined upon patient's preferences.

Abstinence symptoms should be necessarily fixed or registered, and the patient must do so daily within the first month of quitting attempt. This will enable to accurately adjust NRT dose and basic therapy duration.

Abstinence syndrome may comprise any of the following symptoms:

- Strong craving for smoking
- Excitation
- Anxiety
- Poor concentration
- Irritability
- Bad temper
- Anger
- Depression
- Somnolence
- Headache
- Insomnia
- Tremor
- Sweatiness
- Appetite growth
- Weight gain
- Cough
- Expectorator deterioration
- Stuffy chest
- Increased heart rate
- Recklessness or impatience

The symptoms listed are the most vivid during morning time when nicotine blood concentration is remarkably depressed compared to regular one, which is usually attained with smoking through daily active behaviour.

Weight gain can be seen in mainly all patients. Some of those may have unnoticeable weight increase; other may be very upset about it. On average during 2–3 months of abstaining from smoking 3–4 kg can be gained by smoker. The greater part of smokers will lose this supplement within a year. Physician's obligation is to deliberately inform patient of this possibility in advance, and in case this information is of greatest importance for patient when pondering over possible quitting, physician is strongly recommended to work out individual plan for the patient on the methods to correct it, for example diet if applicable, and this mainly behaviour alteration must be started prior to quit attempt.

5. Treatment programme for patients not willing to stop smoking

Short-term treatment programme is mainly targeted for patients that do not express desire to give up smoking, but may think of this possible incentive in future (motivation to stop – 4–6). Besides, the programme can be offered to patients wishing to reduce smoking. Its duration is 1-3 months. Usually such a treatment during one-month leads to 1.5 times smoking reduction on average; while 3 months course – 2–3 times. Some patients may feel comfortable even to reduce smoking down to few cigarettes a week.

The supreme goal of this programme is to maximally convince patient in necessity to complete smoking cessation. Structured counseling along with behavioural therapy are the only ways to effectively increase patient's motivation to stop smoking.

1. Counseling

Physician is supposed to talk and converse with patient unwilling to stop, in order to raise his readiness to give up smoking and to support possible patient's idea to reduce smoking intensity.

Probably, insufficient motivation to stop smoking of a certain patient is explained by unawareness on the harmful aspects of smoking and influence of tobacco in particular, and impact of people to surround smoker. One of the possible reasons is fear for withdrawal symptoms, regarding misunderstand of giving up smoking can result in tremendous harm for the human organism on the one hand, or severe abstinence symptoms on the other, and those symptoms have placed negative impact in the memory during previous quit attempt. On every visit physician should clarify the reasons and be persuasive, but not aggressive, to reassure patient:

1. It is essential to get to know if patient is aware of the harm of tobacco product and smoking to his individual health, social environment, and their possible connection with development of detected diseases, and for close people, firstly, children and relatives.
2. Physician should inform patient of the harm smoking produces upon his organism, and warn him the use of cigarettes or any other tobacco product (cigar, pipe) with low tar or nicotine contents does not reduce the risk of smoking-related diseases:
 - ◆ Short-term consequences – chronic bronchitis, hazardous effect of smoking on fetus during pregnancy, erectile dysfunction, infertility, blood carbon monoxide concentration increase.
 - ◆ Long-term consequences – lung cancer and other malignant neoplasm (nose, throat, gullet, pancreas, bladder), coronary artery disease, chronic obstructive pulmonary disease, that all together result in prolonged disability and general activity restriction that will afterwards demand serious and very costly treatment.
 - ◆ Consequences for the surrounding people – lung cancer and heart disease risk increase with spouse, increase of low birth weight risk, increased predisposition to bronchial asthma when children are exposed to secondary smoke, as well as otitis media, respiratory infections and infantile maturity lag, and finally increased risk of smoking in adulthood with children.

3. Along with patient physician is obliged to determine potential positive consequences of abstaining from smoking and ask a patient to write down a list of reasons to imply, that are meaningful to give up smoking:
 - ◆ General health improvement.
 - ◆ Better smells and tastes.
 - ◆ Money saving.
 - ◆ Physical activity and feeling improvement.
 - ◆ Elimination of everywhere to be repugnant tobacco smoke smell.
 - ◆ Excellent example for children and spouse.
 - ◆ Children and spouse's general health improvement when they escape from secondary tobacco smoke exposure environment.
 - ◆ Getting rid of tense situations when smoking is prohibited and there is a strong craving for it.
 - ◆ Face colour improvement and wrinkle disappearance.
 - ◆ Ability to enjoy life and to watch life is so beautiful and the way his or her beloved child is growing instead of wasting time standing on a balcony with a cigarette.
4. Physician should find out the reasons that interfere patient with successful quitting:
 - ◆ Probable abstinence syndrome.
 - ◆ Fear to fail.
 - ◆ Weight gain.
 - ◆ Insufficient awareness on possible treatment.
 - ◆ Fear to be depressed.
 - ◆ Smoking is generally pleasurable.

Motivational conversations must take place on every patient's visit. Within these discussions physician should support patient's decision to reduce smoking and persuade him to stop smoking as it is extremely important for his health. Special attention should be paid to patients with previous history of unsuccessful quit attempts, when it has been that unfortunate due to severe abstinence syndrome. It is physician's obligation to give explanation that majority of smokers require several quit attempts to stop smoking, and nicotine replacement therapy has been made to maximally decrease or expel this hard to bear abstinence.

The visits frequency when short-term programme does not differ from the long-term programme. This short-term intervention usually lasts for a month, and then it will depend on patient's preferences. Very often its discontinuation is in line with the end of basic therapy. Short-term treatment programme reaches its maximal efficacy when applied in treatment inpatient hospitals, sanatoria, preventive facilities and a part of rehabilitation programmes.

2. Patient's behaviour

When changing for the new life along with physician, patient is supposed to avoid factors that trigger desire to light up a cigarette and smoke as well as to find some adequate substitute for cigarettes.

Nicotine medications

As it has been reported, nicotine medications are aimed to deliver nicotine to smokers' body in the time of abstinence to eliminate abstinence syndrome. Nicotine medications widely differ in their pharmacokinetic properties, and neither of those is capable of such a rapid increase of nicotine blood concentration compared to cigarette smoking (fig. 3).

Currently there are many nicotine medications available in the world. There are 6 main nicotine medications in use: transdermal transport system (patch), chewing gum, sublingual tablet, inhaler, nasal and oral sprays. The choice of medication is basically determined upon patient's preferences. You should also take into consideration the previous experience of NRT use. Thus, if a patient has repeatedly used nicotine chewing gum that eventually resulted in low or no success in smoking cessation, the use of this particular form is not expedient at all in future.

In this case it is reasonable to administer nicotine patch or nicotine oral spray.

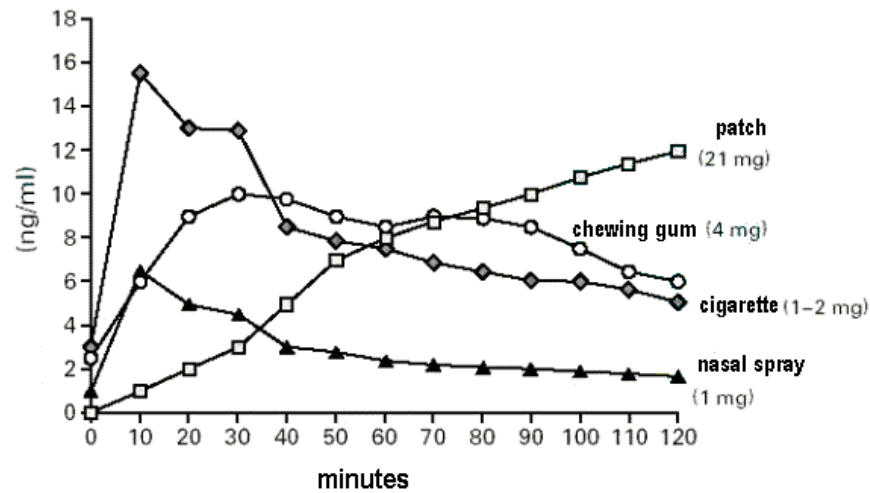


Fig. 3. Comparative nicotine absorption rate with various delivery ways.

Comparative data of different nicotine medications are placed in table 5.

Table. 5. Comparative presentation of current nicotine delivery systems/medications.

Formulations	Cigarette	Patch	Chewing gum
<i>Time to onset</i>	10	50	30
<i>Blood level (ng/ml)</i>	40	20	20
<i>Description</i>	Well-known	Applied to normal, nonhairy area of skin, rotate applications	It must be chewed to release nicotine; release rate parallels chewing rate; swallowing prevents effective absorption; pieces/day can be

			individualized; general range is 5-30 pieces/day
<i>Advantages</i>	Elevated mood, aids concentration	Constant administration, simple to administer, overnight use can reduce intensity of cravings and withdrawal symptoms on awakening	Can individualize dose and regimen; quick onset of action
<i>Disadvantages</i>	Major health hazard	Local skin irritation, administration at night associated with sleep disturbance and intense dreaming	Local problems may result from chewing, such as jaw pain or difficulties with dentures, swallowing the nicotine can cause hiccups or gastrointestinal distress

The listed formulations of nicotine medications are recommended for use (table 6).

Table. 6. Recommended nicotine medications.

<i>Medication</i>	<i>Dose and administration regimen</i>
Transdermal patches	
NICORETTE	5 mg/16 hours for 2 weeks, then 10 mg/16 hours for 2-4 weeks, then 15 mg/16 hours for 4-6 weeks
NICOTINELL	TTS 10: 7 mg/24 hours for 2 weeks, then TTS 20: 14 mg/24 hours for 2 weeks, then TTS 30: 21 mg/24 hours for 6 weeks

Chewing gum

NICORETTE

Available as 2 and 4 mg gum. The daily dose must not exceed 24 pieces/day.

Various NRT formulations are relatively safe and well tolerated. The side effects of this kind of therapy largely depend on dose, and this list includes nausea, increase heart rate, dizziness, headache and excessive sweatiness. NRT in any formulation is contraindicated when a patient tends to have the following:

1. Early period after myocardium infarction (2-4 weeks);
2. Progressive angina pectoris;
3. Unstable angina pectoris;
4. Pheochromocytoma;
5. Life-threatening cardiac arrhythmias;
6. Burger disease;
7. Increased sensitivity to nicotine;
8. Pregnancy, including probable;
9. Breastfeeding.

There has been much attention paid to the safety of NRT use with patients having coronary artery disease. It turned out real NRT indirectly could improve myocardium functioning. When NRT medications are used, blood carbon monoxide level is lower than in patients continuing to smoke cigarettes. This eventually results in much better blood supply for myocardium. That is why coronary artery disease is not a contraindication for NRT use.

Nicorette – chewing gum. This medication is available in 2 and 4 mg nicotine doses. Nicorette 2 mg is basically indicated for patients with number of smoked cigarettes less than 25 a day, while 4 mg formulation is aimed for heavier smokers. Usually there is a need to use chewing gum for 3 months period (no more than 24 pieces a day). During the initial quit attempt period (first days) no less than 1 piece a day must be used. It is very important to follow correct chewing technique: a gum is placed into mouth cavity and chewed several times, unless specific taste appears (bitter or mint-flavoured, that depends on gum type. After this taste is reached, chewing must be discontinued and gum should be placed in

mucous membrane pocket between cheek and gum. On taste disappearance (end of nicotine absorption) chewing must be continued, and then stopped again. Thus, a gum should be chewed intermittently for 30 minutes until its taste disappears completely.

Acid beverages (coffee and juices) promote reduction in nicotine absorption, that is why it is not recommended to eat or drink anything, except for water, 15 minutes prior to and during Nicorette chewing procedure.

Nicorette – transdermal transport system (patch)

This is a 16-hours (day-time) patch, that needs to be removed for nighttime. It is applied once daily at a certain time of the day. Usually this patch is applied on healthy, not covered with hair areas of skin. The most optimal places to apply patch are external (lateral) shoulder surface, posterior back surface, and internal hip surface skin. Area of patch application is better to change from time to time. Small hyperemia is not an indication for treatment course discontinuation. Patients must not use their patches for a period of more than 1 day.

Annex 1.

Non-nicotine medications and other treatment options

Bupropion

Antidepressant bupropion with a Zyban trademark is an outstanding supplementary opportunity for successful tobacco dependence treatment. Its mechanism of action is not fully clear for the time. It has been accepted to think it acts as a modifier of neurotransmitters of human brain, in particular it is capable of elevating dopamine level in the CNS, and it can produce influence on noradrenergic neurons. Dopaminergic and noradrenergic systems are well known as the ones involved in withdrawal syndromes and addiction formation. Bupropion has shown

its high potential in several controlled trials. Thus, monotherapy with Zyban in 300 mg a day dose was 46% compared to placebo (20%) and monotherapy with nicotine transdermal system in 21 mg a day dose (32%). Meanwhile, combined Zyban and transdermal system use efficacy was 51%. The impact of treatment regimens in these trials was assessed on 10-week point after intervention.

Initially, this medication has been used as an antidepressant and its was known with a brand Wellbutrine for these purposes. Its high potential to treat nicotine dependence was revealed after that. However, its ability to cause convulsions largely depends on its dose, that is why it is forbidden to use Zyban along with Wellbutrine due to their fact that both medications contain the same active substance.

To treat tobacco dependence this medication is used in average daily dose equal to 150 mg, while after 3 days of course daily dose must be elevated to 150 mg twice a day. 300 mg is the highest daily dose of the drug. Medication efficacy is significantly increased when used with any NRT formulation. Total treatment duration is 7-12 weeks.

The medication may be causative for insomnia, mouth dryness, dizziness, rhinitis and anxiety. You may not administer the treatment when a patient has convulsion syndrome presently and as a history, as well as its use with MAO inhibitors, and when a patient has bulimia and anorexia is banned.

Nortryptilline

Efficacy of Nortryptilline was shown in two trials of addiction treatment when the medication was used in 75 and 100 mg/day doses for 3 months, at that the drug is recommended to administer 10-28 days prior to quit attempt. This medicine is available in the form of tablets. Mouth dryness, sedation and dizziness are the adverse effects of it. Generally, when this medicine is in use, adverse effects are pretty frequent, and you must be cautious to prescribe it for a patient with coronary artery disease.

Clonidine

Clonidine is well known central stimulator of α_2 -adrenergic receptors, which has been widely used in our country to treat arterial hypertension for decades. Its ability to reduce somatovegetative signs of

opiate and alcohol addictions have also been noticed many years ago, although it has been relatively recently demonstrated that clonidine (clofeline) is effective in tobacco dependence treatment as well as in reducing withdrawal symptoms. However, this drug can cause adverse effects too often. For these purposes this medication is used twice a day, and one-time dose is 0.1-0.3 mg for 3-10 weeks. Also we should mention this medication, as similar with nortryptilline, are the second line drugs to treat tobacco dependence.

Other options

Hypnosis and acupuncture have been offered to manage tobacco dependence. There has been insufficient number of controlled trials on hypnosis, while acupuncture failed to prove its efficacy in randomized trials.

Annex 2.

Internet resources for medicals and patients

1. www.smokefree.to.kg
2. www.sigarets.ru
3. www.nosmoking.ru
4. www.adic.org.ua
5. www.chat.ru/~nosmoke/index.html

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