NICOLAUS COPERNICUS
UNIVERSITY
IN TORUŃ
Faculty of Medicine
Collegium Medicum in Bydgoszcz

Smoking cessation

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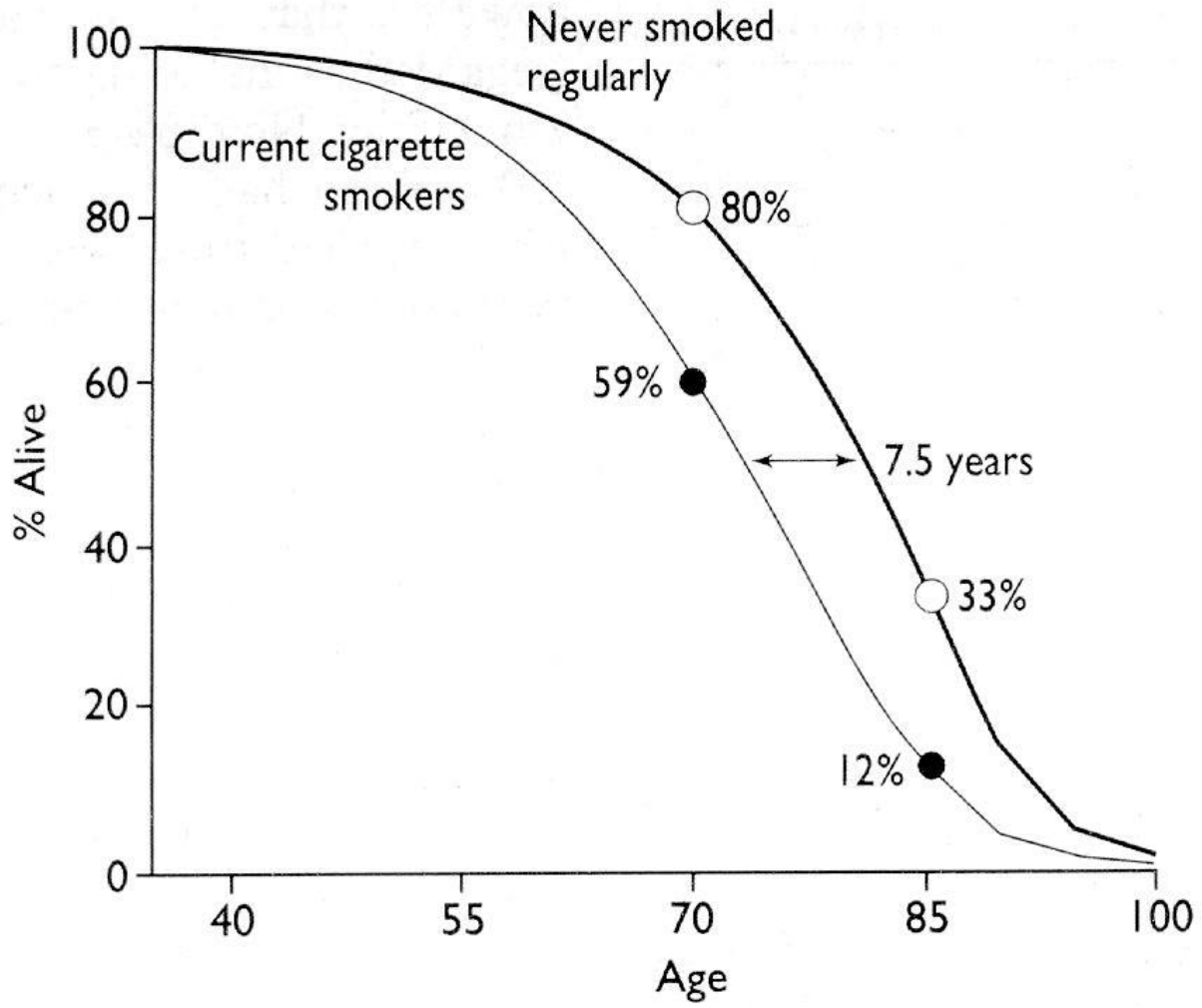
Overview

- Tobacco use is the leading cause of death in the world.
- Smokers die an average of 13 or 14 years earlier than nonsmokers, and 50% of continuing smokers will die of a tobacco-related disease.
- Smoking is responsible for 40% of all deaths from cancer and 21% of deaths from cardiovascular disease.
- Almost 10% of deaths attributable to smoking occur in nonsmokers exposed to secondhand smoke.
- Toxins from cigarette smoke cause disease in most organs of the body.

FIG 1 - Overall survival after age 35 among cigarette smokers and non- smokers: life table estimates, based on age specific death rates for the entire 40 year period. (Note that, at 1990 British death rates, 97% of male infants would survive from birth to 35 years of age)



Doll, R et al. BMJ 1994;309:901-911

Health Risks Associated with Smoking

- Atherosclerosis- abdominal aortic aneurysm, subclinical atherosclerosis, stroke (cerebrovascular accident), coronary heart disease
- Cancer of the bladder, cervix, esophagus, kidney, larynx, lung, oral cavity, pharynx, pancreas, stomach
- Chronic obstructive pulmonary disease (COPD) acute respiratory infections, including pneumonia

Health Risks Associated with Smoking

- Fetal growth restriction and low birth weight
- Preterm delivery and shortened gestation
- Sudden infant death syndrome (SIDS)
- Reduced lung function in infants
- Impaired lung growth during childhood and adolescence
- Respiratory symptoms in children and adolescents, including cough, phlegm, wheezing, and dyspnea
- Asthma-related symptoms (e.g., wheezing) in childhood and adolescence

Health Risks Associated with Smoking

- Low bone density in postmenopausal women
- Hip fractures
- Macular degeneration (AMD)
- Cataracts

Myths

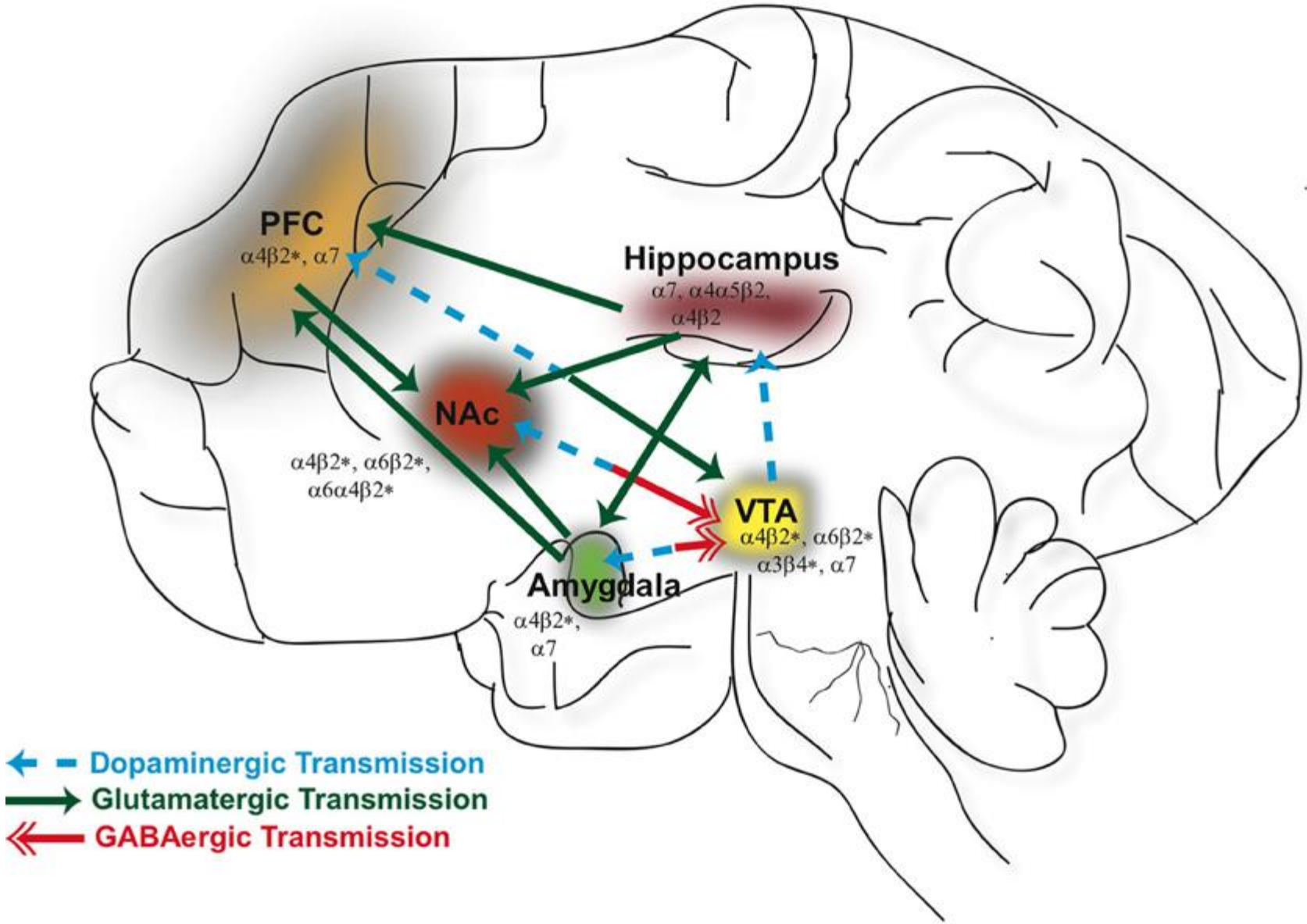
- Cigarettes with reduced yields of nicotine (“light” cigarettes) and CO (“low-tar”) are not safer.
- Cigars are not a safe alternative to cigarettes, causing both cancer and heart disease. Cigar-related health risks are related to number smoked and depth of inhalation.

Myths

- Snuff users (smokeless tobacco) have a 50-fold increased risk of cancer of the cheek and gum
- Electronic cigarettes (e-cigarettes) may contain known carcinogens and toxic chemicals. Some professional organizations have called for e-cigarettes to be illegal

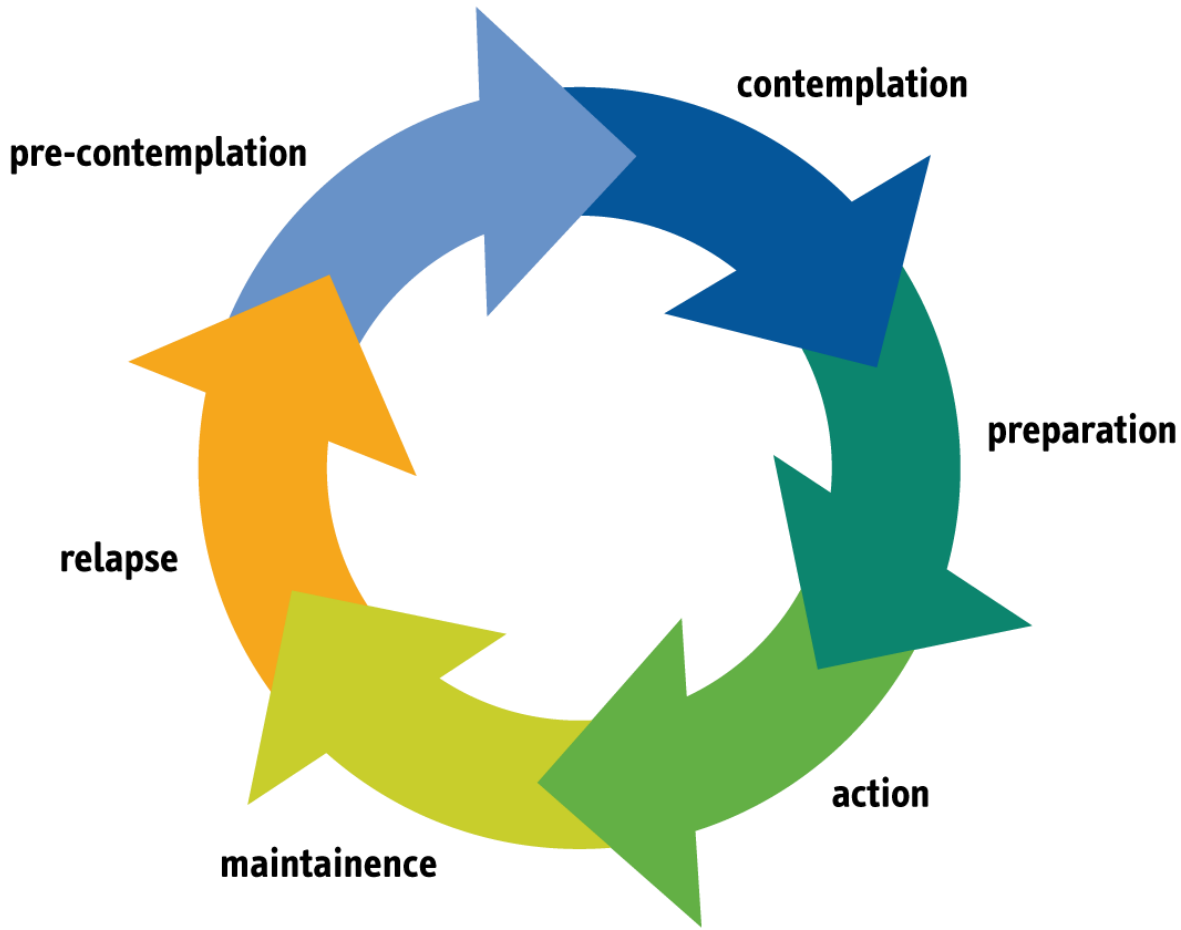
Passive (Involuntary) Smoking

- Secondhand smoke contains 4000 different chemicals, of which more than 60 are carcinogenic.
- About one third of lung cancers occur in nonsmokers who live with a smoker or work in a smoky environment.
- Passive smoking is the third leading preventable cause of death, after alcohol and smoking itself.
- Passive smoking increases the risk of SIDS in infants and otitis media, cancer, and respiratory disease in older children, in direct proportion to smoke exposure.


PFC
α4β2*, α7
Hippocampus
α7, α4α5β2,
α4β2
NAc
α4β2*, α6β2*,
α6α4β2*
VTA
α4β2*, α6β2*
α3β4*, α7
Amygdala
α4β2*,
α7
Dopaminergic Transmission
Glutamatergic Transmission
GABAergic Transmission

Smoking Cessation

- Patients who smoke should receive advice and encouragement to stop at every visit.
- Take advantage of the teachable moment, when a patient who smokes is being treated for any medical condition.
- Multiple strategies and persistence are usually needed for successful cessation because tobacco dependence is a chronic disease.
- Brief counseling, usually lasting less than 3 minutes, is an effective way to begin intervention.



Transtheoretical Model of Change
Prochaska & DiClemente

Stages of Change

- *Precontemplation:* Patient is not interested in quitting smoking in the near future (within 6 months).
- *Contemplation:* Patient is thinking about quitting within the next few months, but has taken no action.
- *Preparation:* Patient is planning to quit in the next 30 days.
- *Action:* Patient is in the process of quitting, or has quit during the last 6 months.
- *Maintenance:* Patient has abstained for more than 3 months.

Five As for Tobacco Users Willing to Quit

- ***A***sk about tobacco use at every visit
- ***A***dvise to quit through clear personalized messages
- ***A***ssess willingness to quit
- ***A***ssist efforts to quit
- ***A***rrange follow-up and support

Table 1. Behavioral and Pharmacotherapy Interventions for Tobacco Smoking Cessation in Adults, Including Pregnant Women: Clinical Summary of the USPSTF Recommendation

Population	Nonpregnant adults age ≥ 18 years	Pregnant adults age ≥ 18 years	Pregnant adults age ≥ 18 years	All adults age ≥ 18 years
Recommendation	Provide pharmacotherapy and behavioral interventions for cessation. Grade: A	Provide behavioral interventions for cessation. Grade: A	Pharmacotherapy interventions: no recommendation. Grade: I statement	ENDS: no recommendation. Grade: I statement
Assessment	The 5 A's framework is a useful strategy for engaging patients in smoking cessation discussions. The "5 A's" include: 1) Asking every patient about tobacco use, 2) Advising them to quit, 3) Assessing their willingness to quit, 4) Assisting them with quitting, and 5) Arranging follow-up.			
Behavioral counseling interventions	Behavioral interventions alone (in-person behavioral support and counseling, telephone counseling, and self-help materials) or combined with pharmacotherapy substantially improve achievement of tobacco cessation.	Behavioral interventions substantially improve achievement of tobacco smoking abstinence, increase infant birth weight, and reduce risk for preterm birth.	—	—
Pharmacotherapy interventions	Pharmacotherapy interventions, including NRT, bupropion SR, and varenicline—with or without behavioral counseling interventions—substantially improve achievement of tobacco cessation.	—	There is inadequate or no evidence on the benefits of NRT, bupropion SR, or varenicline to achieve tobacco cessation in pregnant women or improve perinatal outcomes in infants.	There is inadequate evidence on the benefit of ENDS to achieve tobacco cessation in adults or improve perinatal outcomes in infants.
Balance of benefits and harms	The USPSTF concludes with high certainty that the net benefit of behavioral interventions and U.S. Food and Drug Administration–approved pharmacotherapy for tobacco cessation, alone or in combination, is substantial.	The USPSTF concludes with high certainty that the net benefit of behavioral interventions for tobacco cessation on perinatal outcomes and smoking abstinence is substantial.	The USPSTF concludes that the evidence on pharmacotherapy interventions for tobacco cessation is insufficient because of a lack of studies, and the balance of benefits and harms cannot be determined.	The USPSTF concludes that the evidence on the use of ENDS for tobacco cessation is insufficient, and the balance of benefits and harms cannot be determined.
Other relevant USPSTF recommendations	The USPSTF recommends that primary care clinicians provide interventions, including education or brief counseling, to prevent the initiation of tobacco use in school-aged children and adolescents. This recommendation is available on the USPSTF Web site (http://www.uspreventiveservicestaskforce.org).			

NOTE: *For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, go to http://www.uspreventiveservicestaskforce.org/.*

ENDS = electronic nicotine delivery systems; NRT = nicotine replacement therapy; USPSTF = U.S. Preventive Services Task Force.

AMERICAN ACADEMY OF FAMILY PHYSICIANS

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Pharmacotherapy

- Nicotine replacement therapies (NRTs) (transdermal patch, gum, nasal spray, lozenges, vapor inhaler)
- Bupropion
- Varenicline
- Cytisine