

BASIC SKILLS FOR TOBACCO CESSATION



Basic Skills For Smoking Cessation course

May 19- June 9

Knowledge Hub For Waterpipe Tobacco Smoking
American University of Beirut, Lebanon



BASIC SKILLS FOR TOBACCO CESSATION



Overview:

This online course is designed for health care workers and professionals who want to gain basic skills and knowledge to help tobacco users quit smoking.

It introduces the basic knowledge of tobacco use, nicotine products and dependence and provides you with the basic concepts of behavioral counseling therapy and motivational interviewing techniques in smoking cessation and finally it offers the most up-to-date evidence based tobacco cessation treatment pharmacology and strategies.

This course is a four-hour online program that will be conducted weekly between May 19 and June 9, 2021



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Title of the module and speaker	Date and time
<ul style="list-style-type: none"> - Tobacco use and nicotine products (25 min)-Dr. Maya Romani - Nicotine Dependence (25 min)-Dr. Farid Talih 	May 19 at 4 Pm
-Motivational interviewing in tobacco treatment (50 min)-Dr. Nour Alayan	May 26 at 4Pm
-Behavioral counseling therapy in tobacco treatment programs(50 min)-Mrs. Taline Demerjian	June 2 at 4 Pm
<ul style="list-style-type: none"> - Tobacco treatment pharmacotherapy(25 min)- Dr. Nadim Kanj - Tobacco treatment in special populations (pregnant, children, elderly)(25 min)-Dr. Maya Romani 	June 9 at 4 Pm

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Tobacco Use and Nicotine Products

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Tobacco Treatment and Lifestyle Medicine Specialist
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19-May-2021

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Objectives

At the end of the webinar, participants will be able to:

- 1- Recognize the different types of tobacco products
- 2- Identify the risks and harmful effects of tobacco use
- 3- Explain the waterpipe health risks
- 3- Describe E-cigarette components, health effects, and risks

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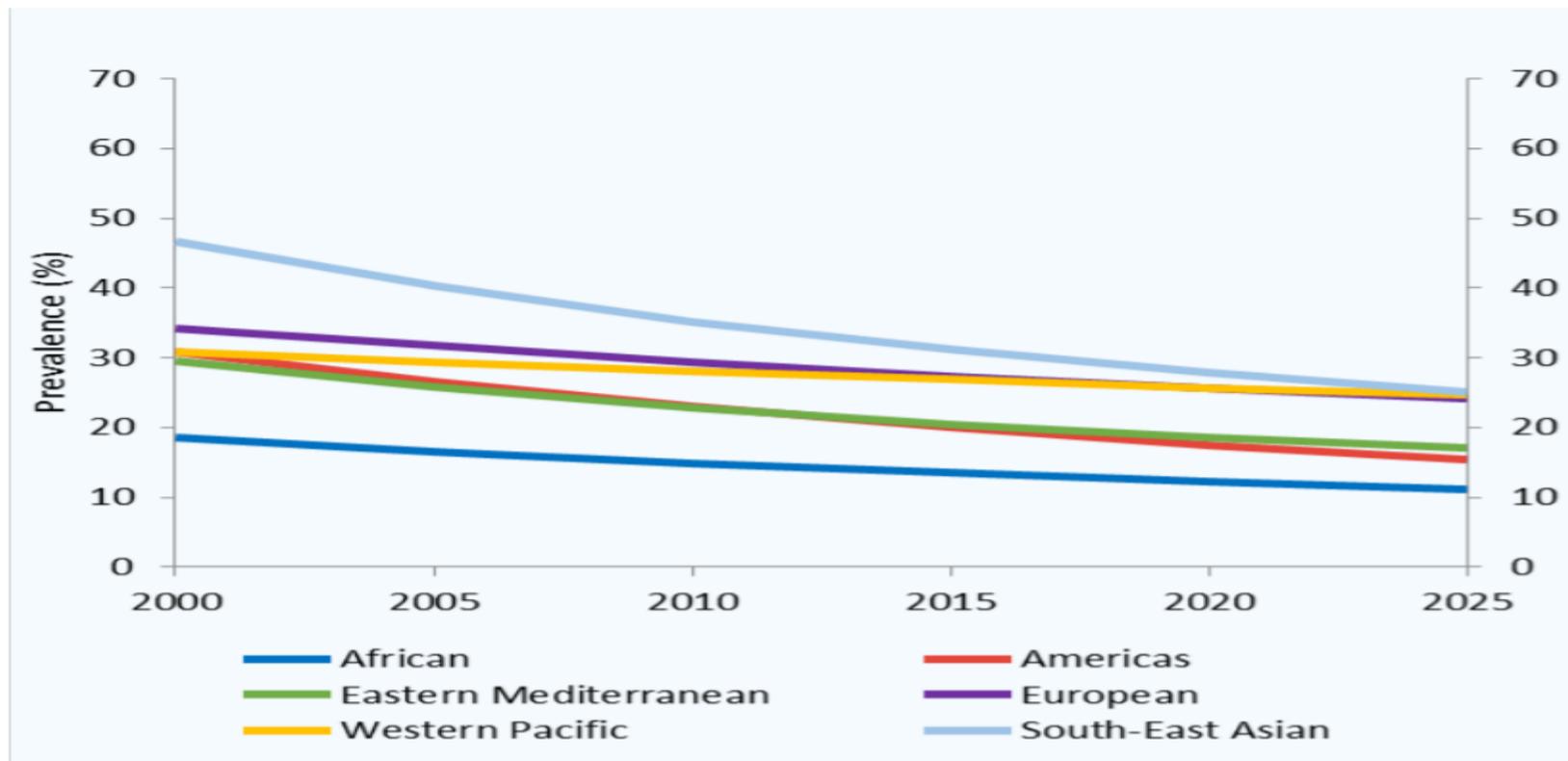
Tobacco use

- Tobacco kills up to half of its users
- It kills more than 8 million people each year
- More than 7 million of those deaths are the result of direct tobacco use
- 1.2 million are the result of non-smokers being exposed to second-hand smoke.
- 80% of the world's 1.3 billion tobacco users in low- and middle-income countries

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- Trends of current tobacco use among people >15 years



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Types of Tobacco Products



Cigarettes



Cigar



E-
cigarettes



Pipe



Waterpipe

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What's in a cigarette?



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Tobacco Health risks

This complex mixture of chemical compounds causes:

- Lung damage
- Cancer
- Vascular disease
- Inflammation

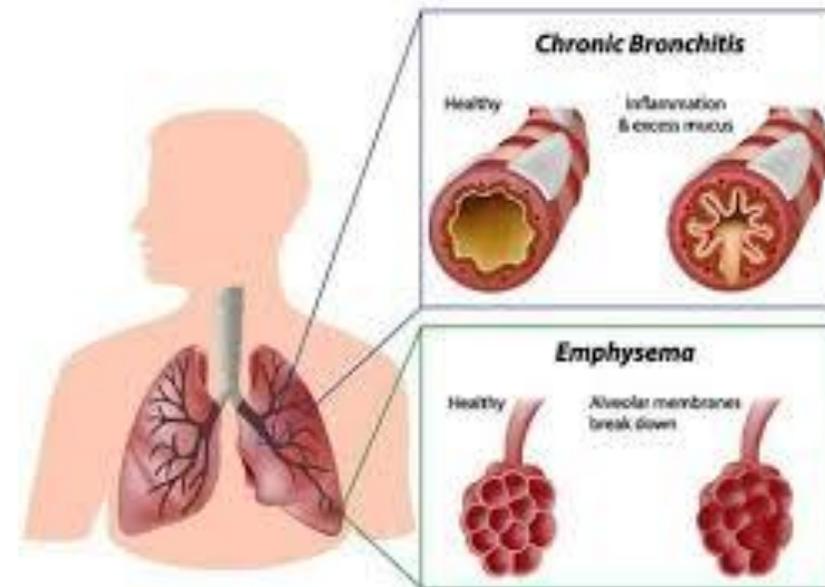
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Smoking and lungs

- Inflammation of the upper airways with mucus production causes chronic bronchitis
 - Increased production of protease causes emphysema
 - Inflammatory mediators result in fibroblast production and scar tissue
- Smoking slows down lung growth in youth affecting its function and causing high risk of COPD later in life

Chronic Obstructive Pulmonary Disease (COPD)



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Smoking and lungs

- Inhaled nicotine :concentration-dependent cough and airway obstruction
- Tobacco smoking accounts for as much as 90% of COPD risk
- People who smoke have an increased annual decline in FEV₁:the physiologic decline is 20-30 ml/y in COPD patients > 60 ml/y
- Triggers asthma



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Smoking and cancer

Smoking contains numerous carcinogens

Lung cancer is among the most common cancers worldwide

- Each cell in the lung undergoes one mutation for every 50 cigarettes
- Cigarettes smoking causes 87 % of lung cancer
- Secondhand smoke is also a significant cause

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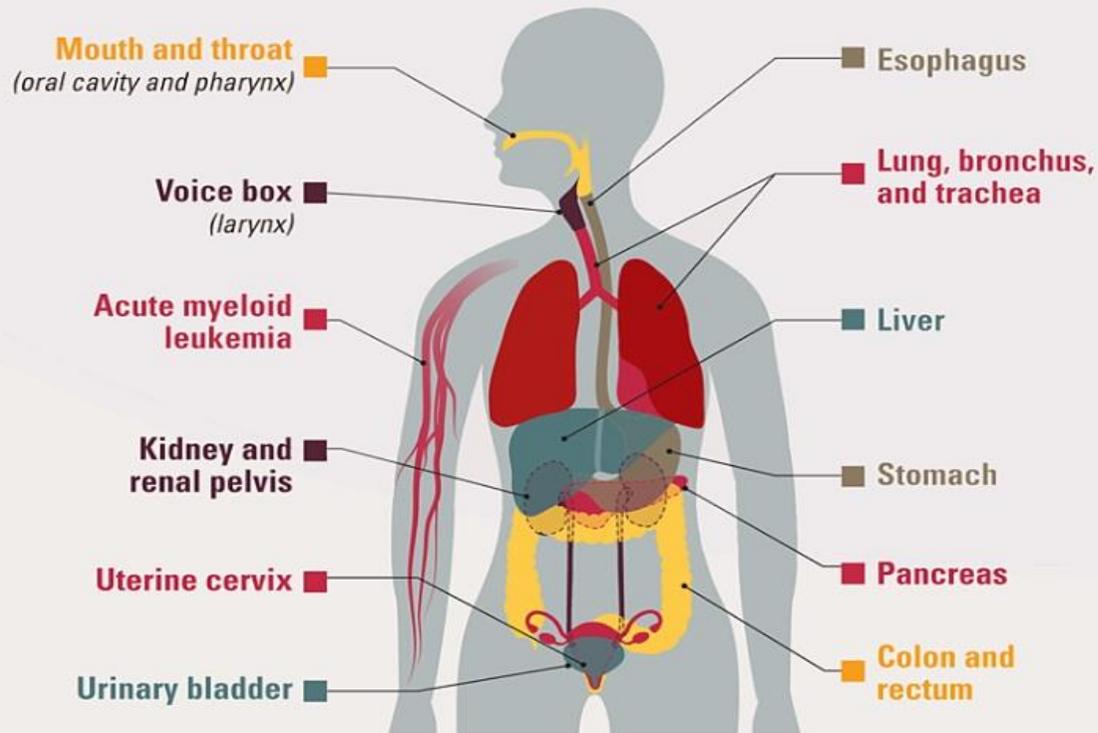


- Five major compounds in tobacco smoke that cause cancer:
 - Nitrosamines(cigarettes/cigars>snuff>E-cig)
 - Polycyclic Aromatic Hydrocarbons (lung, stomach, skin and bladder cancer)any tobacco products that's burned creates PAH
 - Heavy metals(cadmium, lead)delivered to body by combustion(waterpipe, cigarettes, cigar)
 - Aromatic amines(combustible tobacco products, causes cancer) found in second-hand smoke more than mainstream smoke
 - Heterocyclic Amines (combustible tobacco products, causes cancer)

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Tobacco use* causes cancer throughout the body.



* Tobacco use includes smoked (cigarettes and cigars) and smokeless (snuff and chewing tobacco) tobacco products that, to date, have been shown to cause cancer.

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Smoking and vascular diseases-1

1- Nicotine:

Sympathomimetic: Immediate cardiac consequences of nicotine:

- Acute increases in heart rate of up to 10–15 beats/min
- Increased blood pressures of 5–10 mmHg

Metabolic effects: increases lipolysis leading to high circulating free fatty acids and glycerol leading to increase in fat metabolism thus demanding more oxygen and coronary blood flow and myocardial oxygen uptake

Hemodynamic effect: endothelial damage and atherosclerosis

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Smoking and Vascular disease-2

2- Inhaled CO : binds to hemoglobin, reduces oxygen-carrying capacity and inhibits oxygen release from hemoglobin causing hypoxemia and ventricular arrhythmia

3- Oxidant gases:

Cigarette smoke is rich in oxidant chemicals (hydrogen peroxide, peroxynitrite and superoxide)

Oxidative stress:

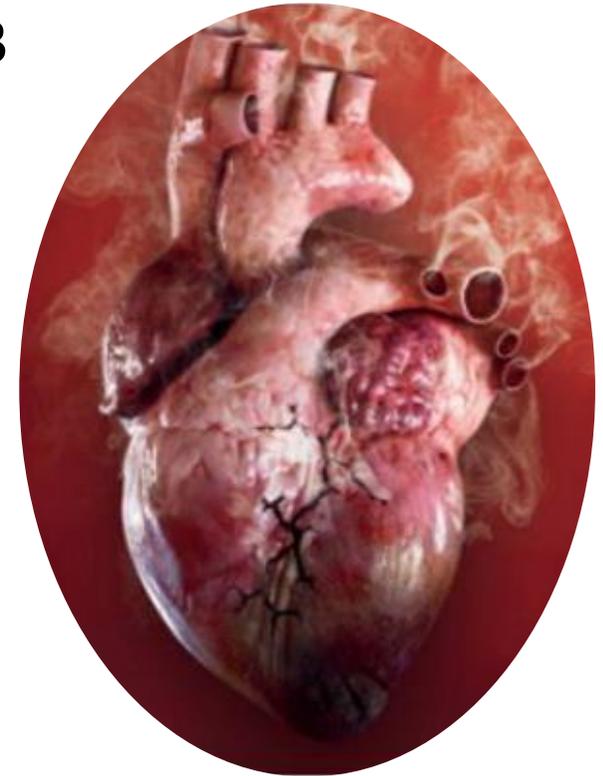
- leads to cellular damage, an essential factor in atherogenesis
- decrease NO release and bioavailability which is an endogenous protective antioxidants
- plays the central role in the development of both smoking-induced thrombosis and atherosclerosis

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Smoking and vascular diseases-3

- Smoking is a major independent risk factor for coronary heart disease, cerebrovascular disease and total atherosclerotic CV disease
- Increases the risks of myocardial infarction, sudden cardiac death, stroke, peripheral vascular disease and aortic aneurysm



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Smoking and inflammation

- Smoking leads to inflammation and immune dysfunction
- Higher incidence of sepsis, infection, poor wound healing
- High incidence if diabetes and poor blood pressure control
- Worse outcomes in HIV
- Cataract
- Dementia
- Teeth loss

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Smoking during pregnancy

- Miscarriage
- Low birth weight
- Premature labor
- Still birth
- Congenital malformations

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Smoking and other health risks

- Infertility in women and men
- Sexual dysfunction
- Osteoporosis

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Smokeless Tobacco Products

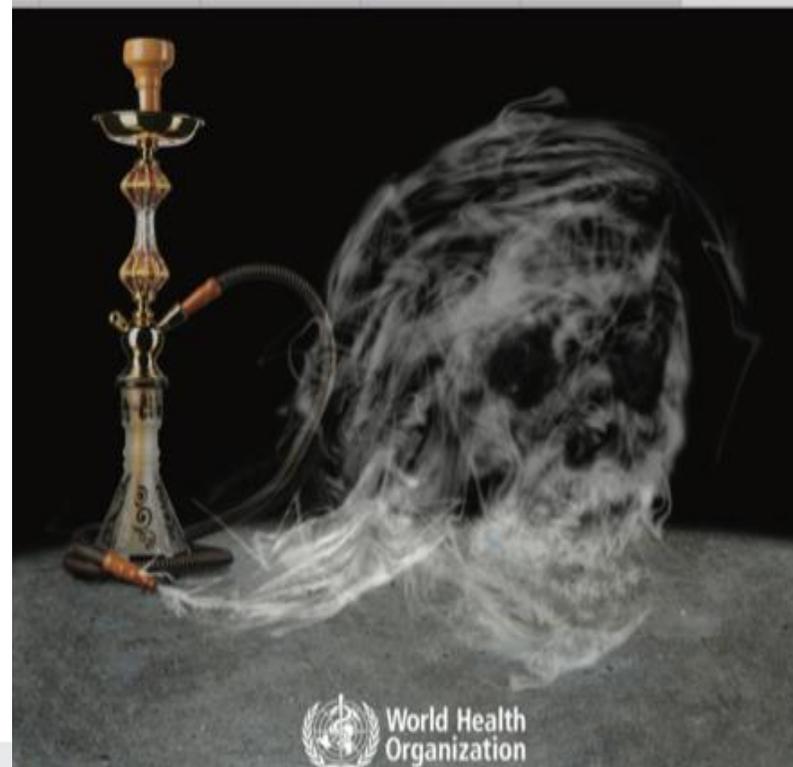
- Orally consumed tobacco
- Main forms: chewing tobacco (loose leaf, plug and twist) and snuff
- Sweden: Snus; Sudan: toombak, Africa: bidi
- Gutkha is a commercially-manufactured smokeless chewing tobacco that is a sweetened and flavoured dry mixture which is increasingly popular among young people and women in some countries.
- Contains high nicotine levels absorbed through the oral Mucosa
- Cancer, oral disease, vascular disease, addiction, reproductive and developmental risks



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What about waterpipe?



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Waterpipe Smoking

- Common in the Eastern Mediterranean Region
- Works by placing a tobacco product in a small bowl with holes in the bottom which is attached to a tube linked to a water container
- When the tobacco product is heated by hot charcoal placed on the tobacco it emits smoke that the user inhales by puffing on a hose connected to the water container
- This draws it through the water and into their lungs



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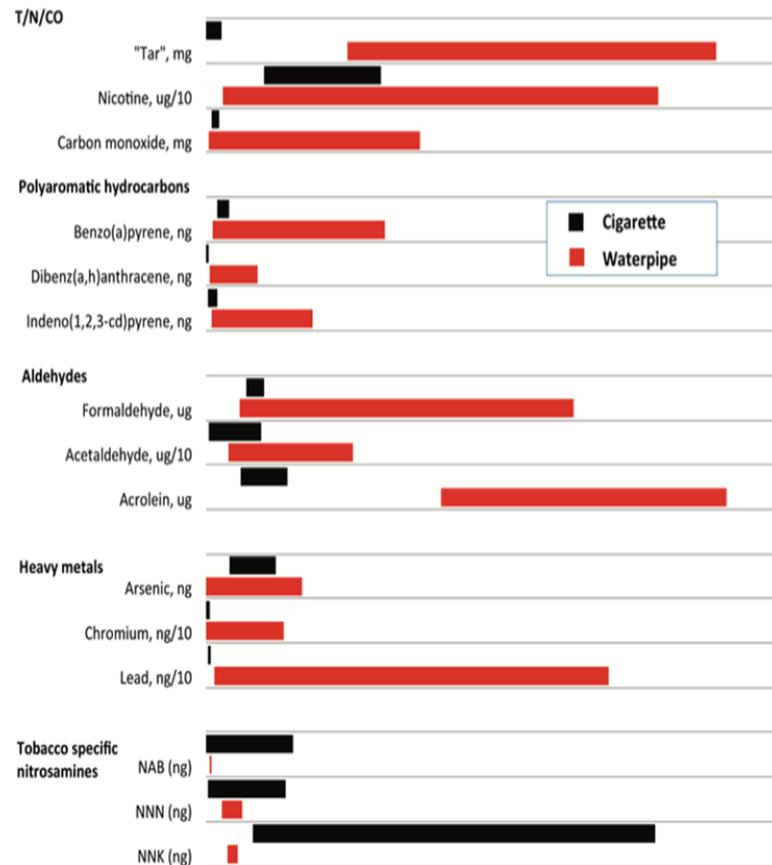
Waterpipe Smoking

- Mo3assal and Tanbak
- One head of unflavoured tobacco has the nicotine equivalent of 70 cigarettes/Flavored 6.5 cigarettes
- A typical 1-hour long waterpipe smoking session involves inhaling 100–200 times the volume of smoke inhaled with a single cigarette

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Toxicants produced during a single 1-h session of waterpipe use (red) and from a single cigarette (black)

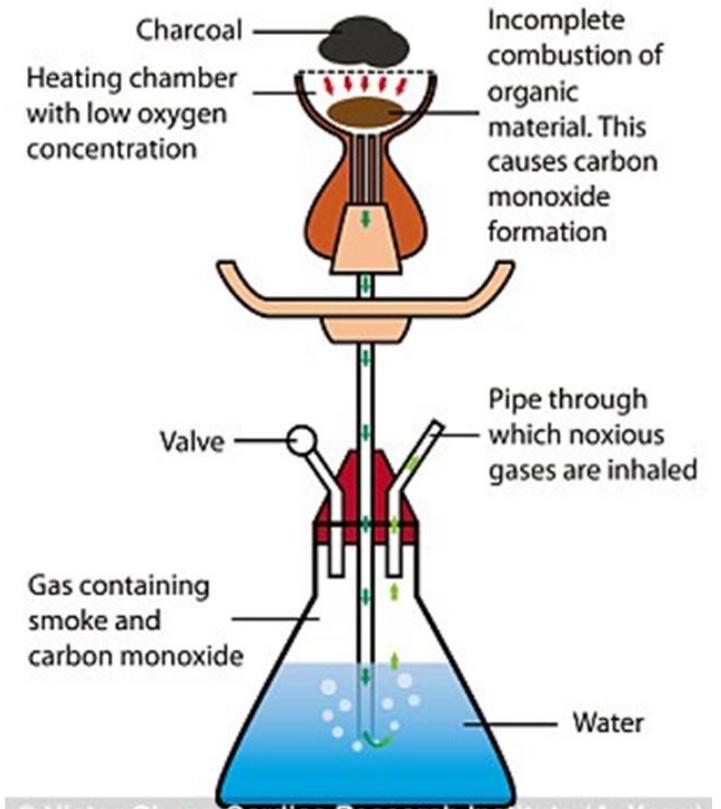


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Toxins of waterpipe smoke

- Charcoal: CO and carcinogen polycyclic aromatic hydrocarbons
- Tobacco-specific:
 - Nitrosamines
 - Polycyclic aromatic hydrocarbons
 - Volatile aldehydes (e.g. formaldehyde, acetaldehyde, acrolein)
 - Benzene
 - Nitric oxide
 - Heavy metals (arsenic, chromium, lead)



© Victor Chang Cardiac Research Institute (A. Yang)

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Waterpipe health effects

Evidence of association	Little or no evidence
Low birth weight	Esophageal, bladder and prostate cancer
Oral Cancer	Gastric carcinoma
Respiratory diseases (COPD, bronchitis)	Hepatitis C infection
Lung Cancer	Periodontal disease
Cardiovascular disease	Nasopharyngeal carcinoma
Metabolic syndrome	Infertility
Mental health	Worse quality of life scores

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Pipe Smoking

Increased risk of death as compared to non smokers from:

- Lung, oropharyngeal, colon, esophageal, pancreatic, laryngeal cancer
- Coronary artery diseases
- COPD

Many pipe smokers don't believe that it is harmful



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Cigar Smoking

- Types: Large, cigarillo, little cigar
- Amount of tobacco in one large cigar is equivalent to the amount in a pack of cigarettes
- Health effects similar to cigarettes



Cigar Images Courtesy of Legacy®

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Second-hand smoking

Mixture of the smoke that comes from the burning end of a cigarette/arghileh and the smoke breathed out by the smoker

Health effects:

1. Asthma and ear infections in children
2. Heart disease and lung cancer in adults who have never smoked
3. Even low levels can be harmful
4. Nocturnal chest tightness and shortness of breath and increased bronchial responsiveness
5. Increases the risk of lung cancer by **20-30%**

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Third hand smoking

- Residual tobacco smoke pollutants adhere to the clothing and hair of smokers, furniture, and dust
- They are reemitted into the gas phase or react with oxidants to form toxicants

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Heated Tobacco Products

- Tobacco product
- Heat not burn
- Toxic and contain carcinogens
- HTPs produce aerosols containing nicotine and toxic chemicals upon heating of the tobacco, or activation of a device containing the tobacco
- Contain the highly addictive substance nicotine, non-tobacco additives and are often flavoured.
- Examples : iQOS, Ploom, glo and PAX vaporizers

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I-QOS

- Not safer than cigarettes
- Vascular endothelial function is impaired by aerosol from a single IQOS HeatStick to the same extent as by cigarette smoke
- Similar to cigarette smoke and eCigs, IQOS has the potential to increase oxidative stress and inflammation, infections, airway remodelling and initiate EMT-related changes in the airways of users of these devices
- Same damage to lungs
- Causes cancer



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Are light cigarettes safer?

- Low-tar cigarettes
 - To maintain same nicotine levels, smokers inhale deeply
 - This blocks the holes in the filter and produces more carcinogens that reaches deeper parts of the lungs
- More cancer



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Cigarette filters

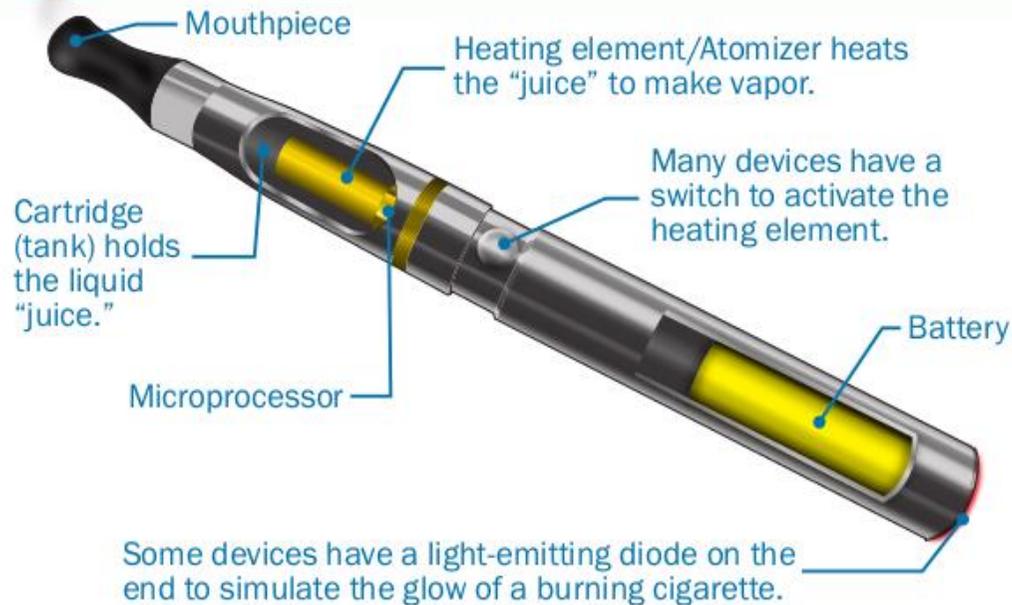
- Intended to reduce the amount of tar
- Same material as camera film (cellulose acetate)
- Thousands of tiny fibers inhaled into lungs
- It feels milder on the throat, making it easier to take bigger and deeper puffs
- More toxic cancer-causing chemicals inhaled deeply into the lungs

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E-cigarettes

Parts of an Electronic Cigarette



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E-cigarettes generation

1st generation: cig-a-like

2nd generation: Vape pens

3rd generation: Mods

1ST GENERATION



'cig-a-like'
Cartridge, atomiser and battery

2ND GENERATION



'Vape pens'
Tank and battery
Refillable

3RD GENERATION



Mechanical 'mods'
Variable power options

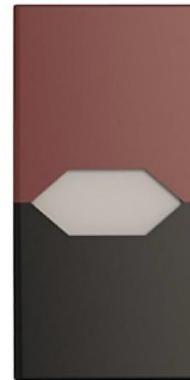
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4th generation: pods (JUUL)



The Amount of Nicotine in
1 Juul Pod = 1 Pack of Cigarettes



1 pack contains 25 cigarettes.

www.wmpeds.com

Westwood Office
541 High Street
Westwood, MA 02090
(781) 326-7700

Mansfield Office
454 Chauncy Street
Mansfield, MA 02048
(508) 339-9444

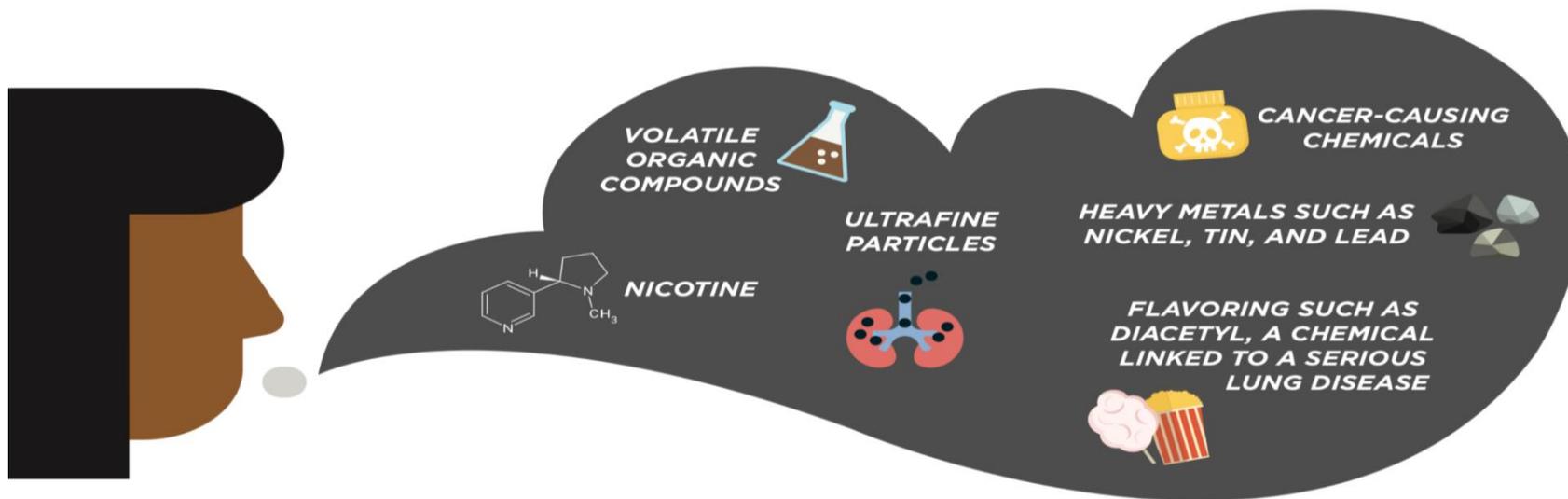
Easton Office
115 Main Street
Easton, MA 02356
(508) 535-5535

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Beyond Nicotine

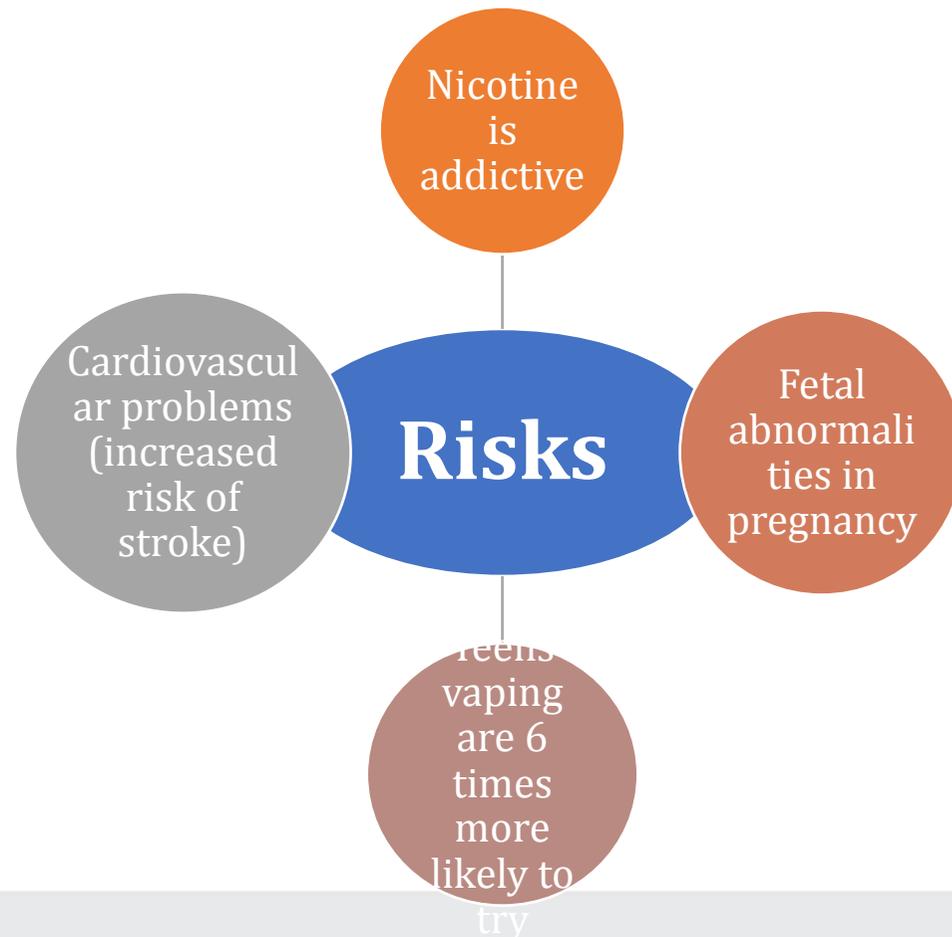


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E-cigarettes health risks

- Should not be promoted as cessation aid

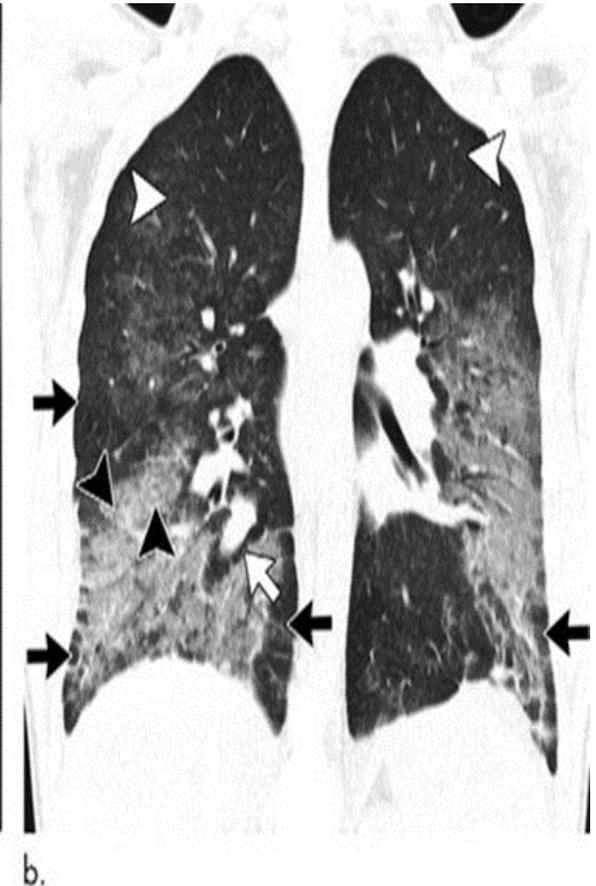
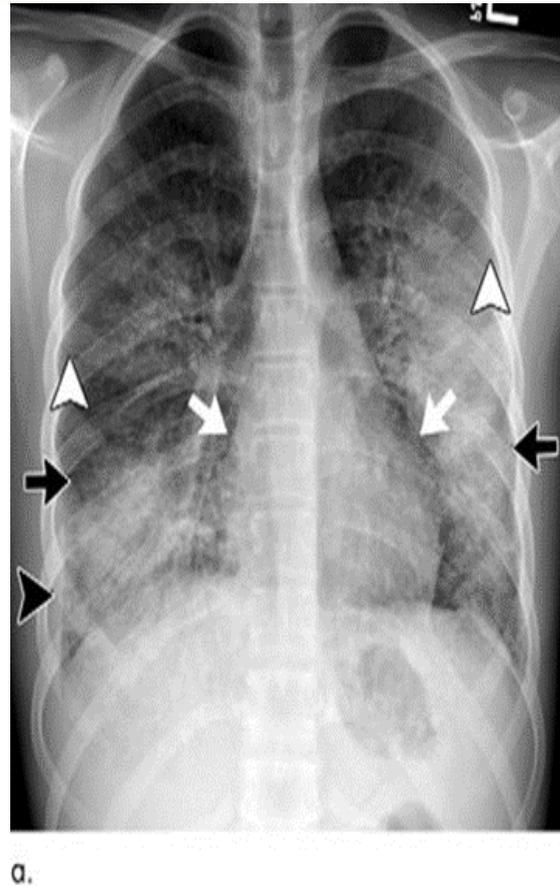


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E-cigarettes or vaping Associated lung injury

- Acute or subacute respiratory illness
Severe, life threatening
>2000 cases
- Pathogenesis unknown
- Dyspnea, cough, chest pain, hemoptysis
- 30% require mechanical ventilator



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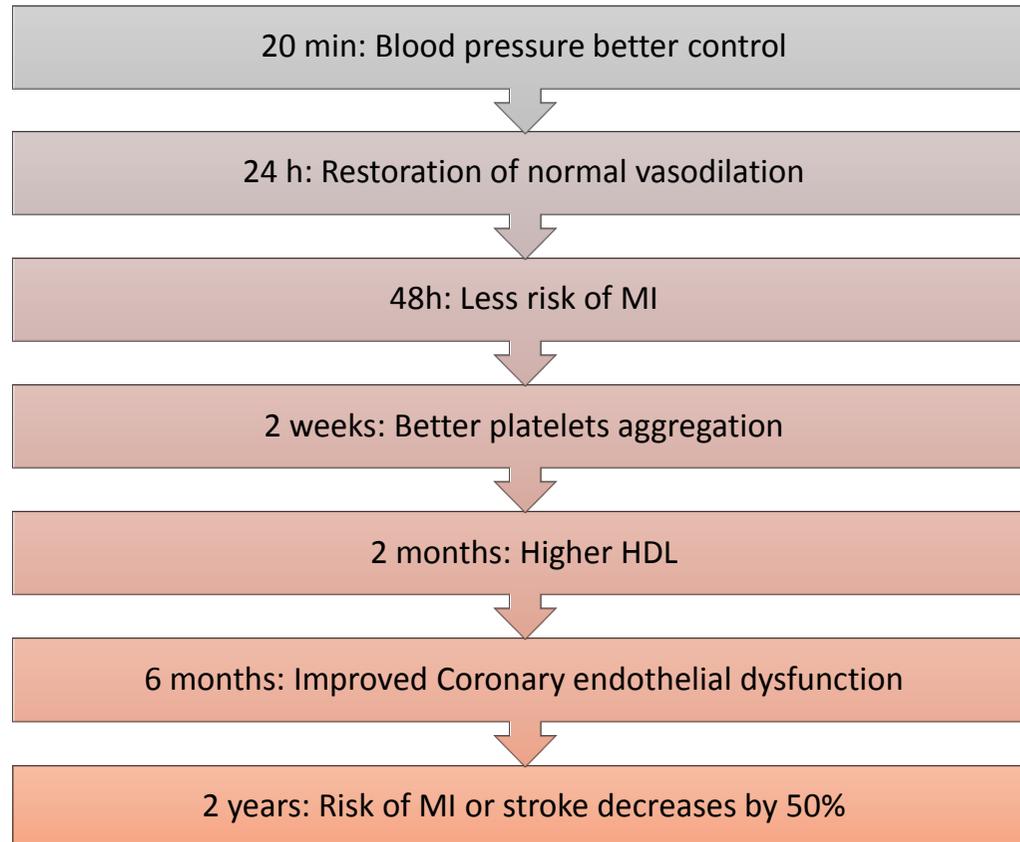


Smoking Cessation benefits

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Cardiac benefits



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Pulmonary benefits

8 hours: CO by half

72 hours: Bronchial tubes relax

3-9 months: better lung capacity, less cough and wheezing

10 years: Risk of lung cancer same as non smoker, less risk of oral, esophageal, laryngeal cancer

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Up	Up to 3 years at age 60
Up	Up to 6 years at age 50
Up	Up to 9 years at age 40
Up	Up to 10 years at age 30

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Thank you



Questions