

# Family medicine

## “Tobacco consumption”

Respiratory block Med438

**Red: important**

**Black: original content**

**Pink: Female's Slides**

**Blue: Male's Slides**

# Objectives:

- Epidemiology of smoking in Saudi Arabia.
- Risks of smoking (Morbidity and Mortality).
- Effect of passive smoking on pregnancy, children.
- How are you going to help the smoker to quit and how to overcome withdrawal symptoms.
- Update in pharmacological management, smoking cessation medication.
- Nicotine preparations, varenicline, bupropion.

# Prevalence

prevalence of Tobacco smoking among persons aged 15 years and above % (Male) – 2015 WHO “SA 27.9%”  
Saudi is the 34th in ranking of most cigarettes smoked by adult/year, at a rate of 1395.14 cigarettes/adult/year

In 2012, 21% of the global population aged 15 and above smoked tobacco. Men smoked at five times the rate of women. the average rates were 36% and 7% respectively. In

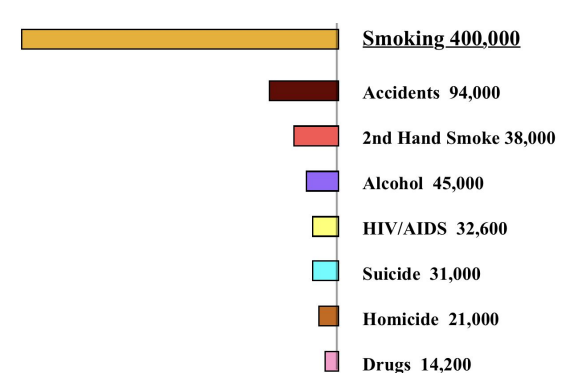
2010, WHO estimates that about 16% of Saudi Arabia's population smoked (3,092,300 persons). If  
tobacco control efforts continue at the same intensity, WHO projects that in **2025 around 24%** of the  
population (approximately 6,268,400 persons) will be smokers. 26% of men and about 3% of women smoked  
in Saudi Arabia.

The highest rate of smoking among men was seen in the age-group 25 – 39.

## Risks of Smoking (Morbidity and Mortality)

Cigarette smoking causes more than **400,000 deaths each year in the United States**, Smoking causes more deaths each year than all of these combined:

- Human immunodeficiency virus (HIV)
- Illegal drug use
- Alcohol use
- Motor vehicle injuries
- Firearm-related incidents



# Addiction of Smoking

**Nicotine** Found naturally in tobacco, which is addictive. tobacco dependence has been classified as a mental and behavioral disorder.

The dependence “addiction” make it hard to stay away from it and causes unpleasant withdrawal symptoms.

People who stop smoking before age 50 cut their risk of dying in the next 15 years in half. Ex-smokers enjoy a higher quality of life with fewer illnesses.

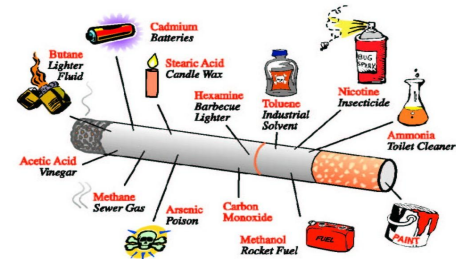
Smoking typically begins in adolescence if a person remains smoke-free throughout adolescence, it is highly unlikely that he or she will ever begin smoking thus intensive efforts be made to help young people stay smoke-free.



## Content of Cigarette

More than 4,000 substances, including:

- **Tar:** black sticky substance used to pave roads
- **Nicotine:** Insecticide
- **Carbon Monoxide:** Car exhaust
- **210 Polonium:** radio-active substance
- **Acetone:** Fingernail polish remover
- **Ammonia:** Toilet Cleaner
- **Cadmium:** used batteries
- **Ethanol:** Alcohol
- **Arsenic:** Rat poison
- **Butane:** Lighter Fluid



**Smoking** refers to the inhalation and exhalation of fumes from burning tobacco in cigars, cigarettes and pipes

## Types of smoking

Active (Conventional smoking)

Passive (second hand smoking)

### Cigarettes

are uniform in size and contain less than 1g of tobacco each.

### Cigar

are composed primarily of a single type of tobacco, and they have a tobacco wrapper. They contain between 1 gram and 20 grams of tobacco.

### Water-Pipe (Sheesha)

Not safer than regular tobacco smoke, Causes the same diseases but more Polycythemia (RBCs and Haemoglobin). Raises the risk of lip cancer, spreading infections like Tuberculosis. Users can inhale the same amount of smoke as from more than 100 cigarettes.

### Electronic Cigarette

is a battery-powered vaporizer which has a similar feel to tobacco smoking, but do not contain tobacco, although they do use nicotine from tobacco plants. They do not produce cigarette smoke but rather an aerosol, which is referred to as vapor.

# Smoking Effects



**Passive smoking (second hand):** breathing in other peoples tobacco smoke. 38% of children aged 2 months to 5 years are exposed to SHS. and they are particularly at risk because their bodies are still growing and they breathe at a faster rate than adult.

**Third hand smoking:** exposure to smoke components and their metabolic by-products from contact with surfaces that have adsorbed the toxin, through the skin or ingestion from contamination of the hands.

**Mainstream smoke** is Exhaled smoke from smoker

The smoke drifting from a lit cigarette is **sidestream Smoke (More toxic)**

The combination of both is the **second-hand smoke (SHS)**.

## Male's slides only

### Smoking during pregnancy can lead to:

- Premature delivery.
- Low birth weight
- Sudden infant death syndrome
- Limited mental ability
- trouble with learning.

The more cigarettes a mother-to-be smokes, the greater the danger to her baby causing 5 % of infant deaths and 10% of preterm births.

### Conditions have been linked to secondhand smoke exposure in children:

- Sudden infant death syndrome (SIDS)
- More respiratory infections (such as 436,000 episodes of bronchitis and 190,000 cases of pneumonia)
- More severe and frequent Asthma attacks, nearly 530,000 doctor visits.
- Up to 2,000,000 of ear infections each year.
- Chronic cough

## Consequences of Smoking:

- Health (short term, long term)
- Economic (individual, family, community)
- Social (family, community)
- Development (community)
- Religious (individual, community)
- Premature death

## Effect of Smoking on the body:

Wrinkles, capillaries and premature ageing and scarring.



Skin

- Overall poor oral health
- Stained teeth
- Gum inflammation
- Black hairy tongue
- Delayed healing of the gums



Oro- dental

- Birth defects
- Premature stillbirth
- Low birth weight
- Lowered immune capacity
- Proneness to Sudden Infant Death Syndrome (SIDS)



Fetal Smoking Syndrome

# Effect of Smoking on the body:

- Smoking causes **Coronary** heart disease.
- Atherosclerosis & Arteriosclerosis
- Thrombosis can also form and lead to ischemic heart disease, peripheral vascular disease, and **Stroke**.
- **Heart attack: are twice as likely as Nonsmokers**

Even people who smoke fewer than five cigarettes a day can have early signs of CV disease.

## Cardiovascular system

- Smoking can cause lung disease by damaging the airways and the alveoli e.g. **COPD** ( emphysema, chronic bronchitis)
- **In presence of asthma, tobacco smoke can trigger an attack or make an attack worse.**

Smokers are 12 to 13 times more likely to die from COPD than nonsmokers.

Cigarette smoking causes most cases of **lung cancer by 25 times**

## Respiratory system

Smoking can cause cancer almost anywhere in your body:

- Lung, Trachea, bronchus.
- Bladder (Urinary system)
- Esophagus (GIT system)
- Oral cancer
- Laryngeal cancer: **Persistent hoarseness Chronic sore throat, Painful swallowing, Pain in the ear, Lump in the neck.**

Over 80% of deaths from laryngeal cancer are linked to smoking.

## Cancers



## Female's slides only

### Why do people smoke?

- Parental influences
- Influence of peer
- Low socioeconomic status
- Social rewards
- Stress reliever
- Curiosity
- Weight control.
- Availability
- Media influence

### Why targeting youth?

The younger the age when smoking begins, the longer the smoking cycle. Young persons are also more vulnerable because they are likely to be less aware of the addictive nature of nicotine and the harmful effects of tobacco consumption.

## Prevention & Control:

### Globally:

WHO-MPOWER (first launched in 2008), Monitoring tobacco use, and prevention policies, Banning tobacco advertising, Increasing taxing on tobacco, and health education .

### Nationally:

- Tobacco Control Program; Ministry of Health
- Purity Organization; Ministry of Social Affairs

### Conceptually:

- Primary prevention = tobacco use [smoking] prevention
  - Secondary prevention = tobacco use [smoking] cessation (quitting smoking)
  - Tertiary prevention = dealing with its consequences Tobacco Use
  -
- Personal advice can help the patient to quit smoking.

# The model of 5 A's

(allowing physicians to incorporate smoking cessation counseling into busy clinical practices)

## Ask

All patients should be asked about tobacco use and assessed for motivation to quit at every clinical encounter.

## Advise

Advice to patients should be clear, strong, personalized.

## Assess

- Smoking history.
- Willingness to quit
- Patients should be asked about their timeline for quitting and about previous attempts.

## Assist

Offer support and help patients to anticipate difficulties (Nicotine withdrawal symptom, depression) and encourage them to prepare their social support systems.

Extra  
Explanation in  
slide 13 & 14

## Arrange

Follow-up plans should be set.

# The model of 5 R's

(when patient is not ready to quit)

## Relevance

Motivational information has a great impact when it is relevant to the patient

## Risks

Ask the patient to identify potential negative consequences associated with tobacco use.

## Rewards

Encourage the patient to identify potential benefits of quitting smoking and highlight those most relevant to the patient.

## Roadblocks

Invite the patient to identify barriers or impediments to quitting and suggest treatments

## Repetition

Repeat the motivational intervention every time an unmotivated patient visits the clinic setting.

### Immediate rewards of quitting smoking:

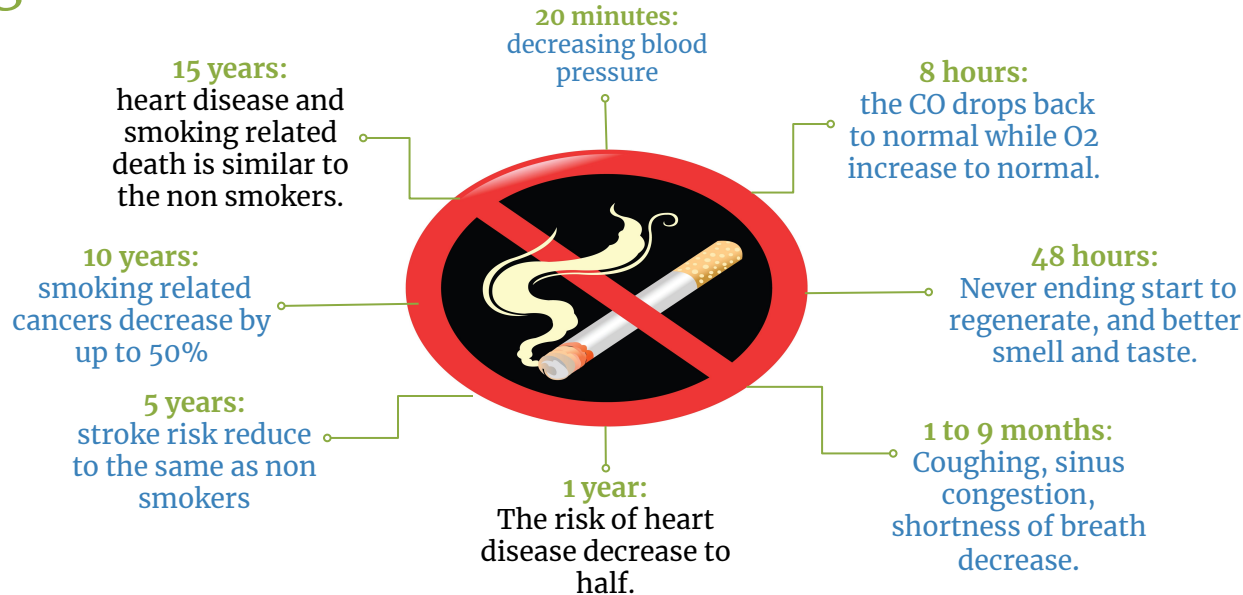
- Breath smells better, Bad smell in clothes and hair go away.
- Stained teeth get whiter, and Yellow fingernails disappear.
- Food tastes better.
- Sense of smell returns to normal.
- Everyday activities no longer leave them out of breath.
- Reduce the Cost
- Social acceptance

# Smoking cessation

Dramatically reduces the risk of most smoking-related diseases.

- Picking a quit date
- Keeping a record of why, when, where and with whom you smoke
- Getting support and encouragement from your family, friends, and health providers.
- Joining a quit group, counseling
- Quitting Clinics available.

## The healing timeline:



## Withdrawal symptoms

Symptoms peak in the first two weeks, where relapse is high.

- Dizziness (which may last 1 to 2 days after quitting).
- Feelings of frustration, impatience, and anger.
- Depression, Anxiety.
- Sleep disturbances and Restlessness.
- Trouble concentrating and headaches.
- Increased appetite and Weight gain.
- Constipation and gas.
- Cough, dry mouth, sore throat, and nasal drip.
- Chest tightness.

## Tips to overcome withdrawal

- **Avoid temptation:** Stay away from people and places that tempt you to smoke.
- **Change your habits:** Take a brisk walk instead of a smoke break.
- **Choose other things for your mouth:** Use substitutes such as sugarless gum.
- **Get active with your hands:** Do something to reduce your stress such as woodworking.
- **Breathe deeply:** imagine you breathed deeply as you inhaled the smoke.
- **Delay:** If you feel that you're about to light up, hold off. Tell yourself you must wait at least 10 minutes.
- **Reward yourself.**

# Pharmacotherapy

Nicotine Replacement therapy (NRT)

Bupropion

Varenicline

Nicotine Patch

Nicotine Gum

Nicotine nasal spray

Nicotine Inhaler  
(Deliver Nicotine Fast)

# Nicotine Replacement Therapy (NRT)

NRT provides nicotine without using tobacco to relieve withdrawal symptoms as the patient stops cigarette smoking, The initial dose is based on the number of cigarettes smoked/day.

- Simplest to use
- Long acting and slow onset, which provides constant relief over 24hrs
- High compliance
- It is available over the counter.
- How to use: Place patch over hairless site, changed the next morning.

Starting on the quit day, **patients who smoke >10 cigarettes/day:**

- use highest dose of patch (**21 mg/day**) for **4-6** weeks
- followed by **14 mg/day** for **2** weeks
- finish with **7 mg/day** for **2** weeks.

Smokers who weigh less than 45 kg or smoke  $\leq 10$  cigarettes per day are advised to begin with the **14 mg/day** strength for **6** weeks, followed by **7 mg/day** for **2** weeks.

## Transdermal nicotine patch

- very common
- short-acting NRT.
- Chewing the gum releases nicotine
- absorbed through the oral mucosa, peak of nicotine in blood within 20 min of chewing.

**4 mg** dose of gum is for smokers who smoke  $\geq 20$  cigarettes per day

**2 mg** dose is recommended for lighter smokers.

They can chew one piece of gum every 1 to 2 hours for six weeks.

gradual reduction over the second six weeks (total duration should be 3 months).

Acidic beverages (eg, coffee, carbonated drinks) should be avoided before and during gum use, as they lower the oral pH, causing nicotine to ionize and reducing nicotine absorption.

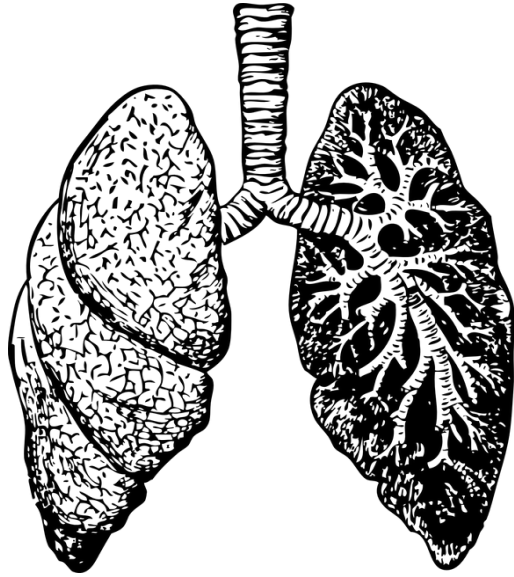
## Nicotine gum

## Bupropion

## Varenicline

	Bupropion	Varenicline
Mechanism of Action	inhibits the uptake of norepinephrine, serotonin, and dopamine reducing the urge of smoking.	It blocks the nicotine in tobacco smoke from binding to the receptor, thereby reducing the rewarding aspects of cigarette smoking, resulting in moderate levels of dopamine in the terminal synapse.  It reduces the withdrawal symptoms.
Features	The quit date should be set for one to two weeks after bupropion therapy is initiated.  And the therapy is usually continued for eight to 12 weeks after the patient has quit smoking	It increases the chances of a successful quit attempt 2-3 fold compared with non pharmacologic assistance.  Varenicline is superior to bupropion in promoting abstinence.
ADRs	-	increased risk of coronary events.
Contraindications	<ul style="list-style-type: none"> <li>- A history of seizure disorder.</li> <li>- The presence of eating disorders.</li> <li>- Uncontrolled hypertension</li> </ul>	-





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**“Medicine is a science of uncertainty, and an art of probability.”**

**–William Osler**