



MED437  
KING SAUD UNIVERSITY

# Family medicine

أحلامك الحقيقة ليست تلك التي تراها في نومك بل تلك التي لا تجعلك تنام

# OBJECTIVES

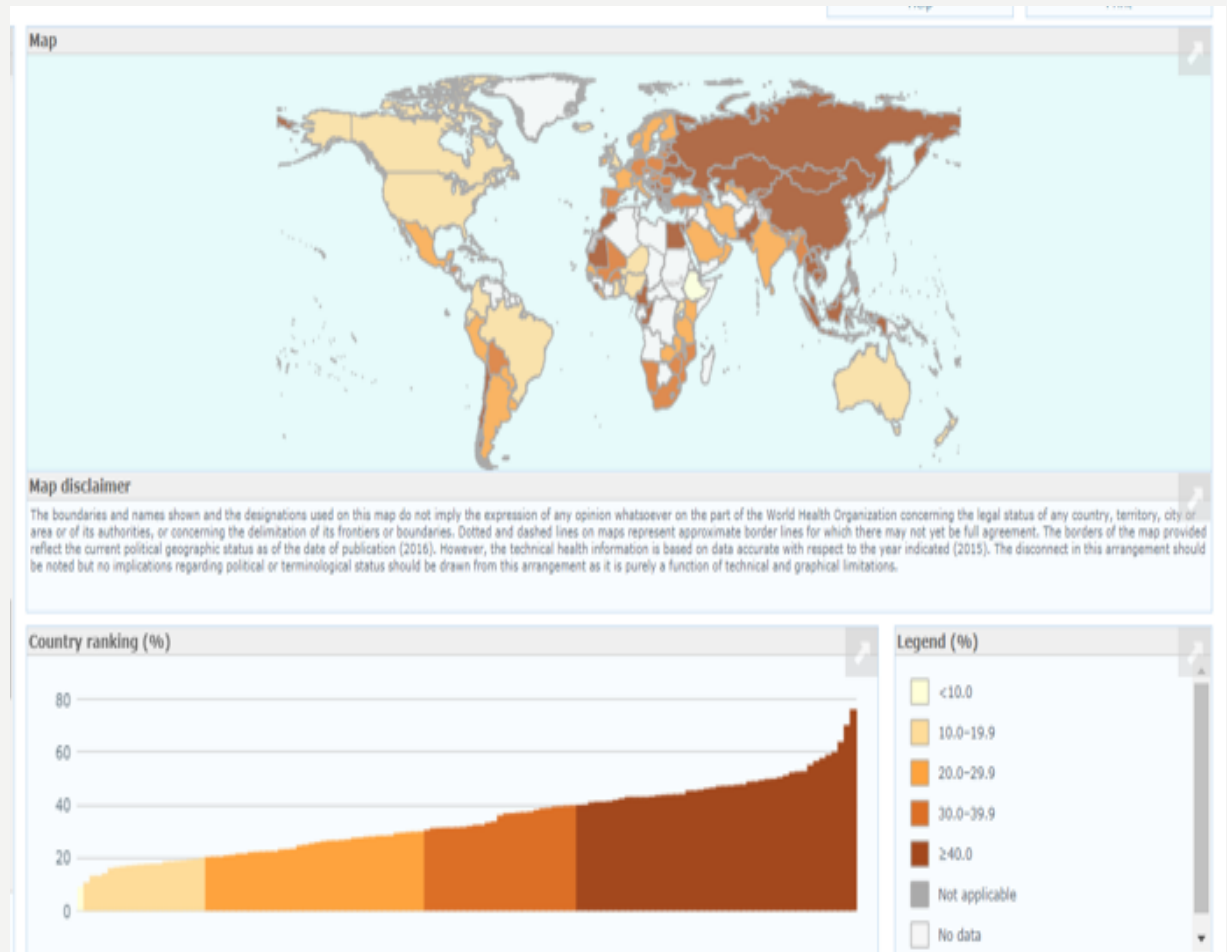
- **Epidemiology of smoking in Saudi Arabia.**
- **Risks of smoking (Morbidity and Mortality).**
- **Effect of passive smoking on pregnancy, children ...**
- **How are you going to help the smoker to quit and how to overcome withdrawal symptoms.**
- **Update in pharmacological management, smoking cessation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

# Content of cigarette



# Prevalence of tobacco smoking among persons aged 15 years and above % (male) – 2015

## WHO “SA 27.9%”



# Prevalence

## Prevalence of smoking among secondary school male students in Jeddah, Saudi Arabia: a survey study

- **Among students of age 16–22 years.**
  - ❖ A total of 695 students responded to the questionnaires with an **87.4%** response rate.
  - ❖ Two hundred fifty-eight (**37%**) of the study group were current smokers.
  - ❖ The most common reasons given for smoking were:
    - **Personal choice (50.8%)**
    - **Peer pressure from smoker friends (32.8%).**
- ❑ Many students researched the smoking hazards (**68.1%**), but only **47.6%** knew about the bad effects of passive smoking.
- ❑ Two thirds of the smoking students wanted to quit smoking (**63.2%**), especially if suitable help was available, and **75.1%** tried to quit.
- ❑ A third of the smoking students (**36.8%**) found it difficult to stop smoking in no-smoking areas.

# Risks of smoking (morbidity and mortality)

- Cigarette smoking causes more than **480,000 deaths each year in the United States.**
  - This is about **one in five deaths.**
  - 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**
- 
- Smokers are more likely than nonsmokers to develop:
    - Heart disease**
    - Stroke**
    - Lung cancer**
  - Smoking is estimated to increase the risk of:
    - Coronary heart disease by 2 to 4 times**
    - Stroke by 2 to 4 times**
    - Lung cancer by 25 times**

## Smoking and cardiovascular system

- Smoking causes **stroke** and **coronary heart disease** —the leading causes of death in the United States.
- Smoking damages **blood vessels**.
- **Walls of Arteries** are thicken and lumen grow narrower (Atherosclerosis)
- **The heart beat faster and blood pressure goes up.**
- **Thrombosis can also form and lead to; IHD, PVD and Stroke.**
- **Even people who smoke fewer than five cigarettes a day can have early signs of cardiovascular disease.**

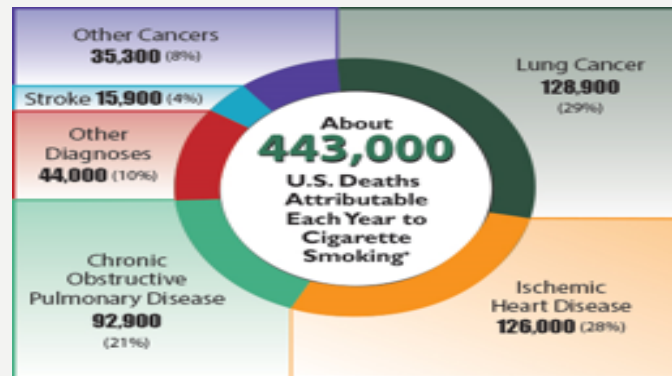
## Smoking and respiratory system

- Lung diseases caused by smoking include:
- **COPD, which includes emphysema and chronic bronchitis.**
- Smoking can cause lung disease by damaging the airways and the alveoli.
- 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**.

# Smoking and cancer

➤ Smoking can cause cancer almost anywhere in your body:

- ❑ Trachea, bronchus, and lung
- ❑ Bladder
- ❑ Esophagus
- ❑ Larynx
- ❑ Oropharynx (includes parts of the throat, tongue, soft palate, and the tonsils)\*

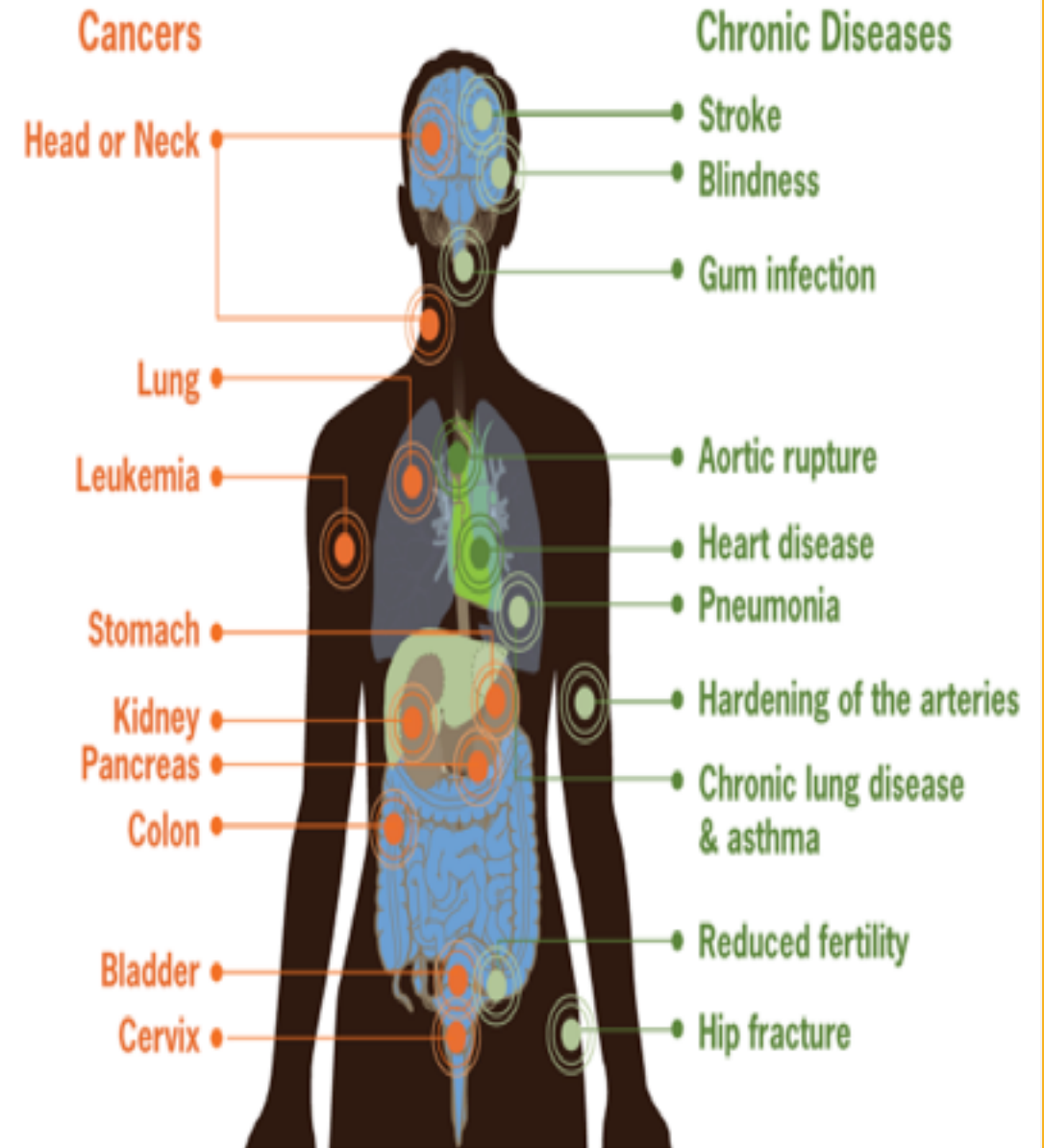


Average annual number of deaths USA 2000–2004

\*The oropharynx affected by the water pipe not the cigarette because of the acidity of the cigarette it's not observe by the oropharynx .

# Risks from Smoking

Smoking can damage every part of the body



# Types of smoking

Conventional smoking

Passive ( second hand) smoking (**important**)

## • Effect of passive smoking

### What is passive smoking?

Passive smoking means breathing in other people's tobacco smoke.

Exhaled smoke is called exhaled mainstream smoke.

The smoke drifting from a lit cigarette is called **sidestream smoke**.

The combination of mainstream and sidestream smoke is called second-hand smoke (SHS).

## • Effect of passive smoking on pregnancy and children

➤ Kids are particularly at risk for the effects of secondhand smoke because their bodies are still growing and they breathe at a faster rate than adults.

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

- Sudden infant death syndrome (SIDS)
- More respiratory infections (such as bronchitis and pneumonia)
- More severe and frequent Asthma attacks
- Ear infections
- Chronic cough

➤ Smoking during pregnancy can lead to:

- Premature delivery,
- **Low birth weight**,
- SIDS,
- 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.



# Children & Secondhand Smoke



38% of children aged 2 months to 5 years are exposed to **SHS** in the home.



Up to 2,000,000 **ear infections** each year



Nearly 530,000 doctor visits for **asthma**



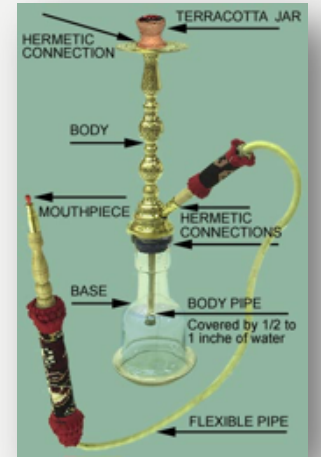
Up to 436,000 episodes of **bronchitis** in children under five



Up to 190,000 cases of **pneumonia** in children under five

# Water-Pipe: Sheesha

- Not safer than regular tobacco smoke.
- Causes the same diseases but more (secondary) **Polycythemia** ( RBCs and Haemoglobin).
- Raises the risk of **lip cancer**, spreading infections like **Tuberculosis**.
- Users ingest about 100 times more lead from hookah (نرجيلة) smoke than from a cigarette.



**How are you going to help the smoker to Quit  
and how to overcome withdrawal symptoms?**



# Management of smoking cessation

## Control measures

- **Surveillance is the key**
- **Taxes**
- **Health education**
- **Picture warnings**
- **Tobacco users need help to quit**

## Assess the Dependence first (important)

- **The time of the first cigarette at morning.**
- **The number of cigarettes per day**

## Why is it so hard to quit smoking?

### Nicotine

Found naturally in tobacco, which is as **addictive** as heroin or cocaine.

Over time, a person becomes **physically dependent** on and **emotionally addicted(more)** to nicotine.

- The physical dependence causes unpleasant withdrawal symptoms when you try to quit.
- The mental dependence (addiction) make it hard to stay away from nicotine after quit.

## Why quit smoking now?

- No matter how old or how long a person's smoked, quitting can help live longer and be healthier.
- People who stop smoking before **age 50** cut their risk of dying in the **next 15 years** in **half** compared with those who keep smoking.
- **Ex-smokers** enjoy a higher quality of life – they have fewer illnesses

## Immediate rewards of quitting smoking:

- ❖ Breath smells better
- ❖ Stained teeth get whiter
- ❖ Bad smell in clothes and hair go away
- ❖ Yellow fingers and fingernails disappear
- ❖ Food tastes better
- ❖ Sense of smell returns to normal
- ❖ Everyday activities (such as climbing stairs or light housework) no longer leave them out of breath
- ❖ They can be in smoke-free buildings without having to go outside to smoke.
- ❖ Reduce the Cost
- ❖ Social acceptance

# Getting help with the mental and physical addiction

Some people are able to quit on their own, without the help of others or the use of medicines. But for many smokers, it can be hard to break the social and emotional ties to smoking while getting over nicotine withdrawal symptoms at the same time.

## Quit-smoking programs:

- Tobacco Control Program; Ministry of Health (<http://www.sa-tcp.com>)
- Purity Organization; Ministry of Social Affairs (<http://naqa.org.sa/>)

## ➤ Support of family and friends:

- Increase rate of quitting

**Withdrawal symptoms can include any of the following:  
(peak: first to second week where the relapse rate is high)**

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

## Dealing with smoking withdrawal

- If someone's been smoking for any length of time, smoking has become linked with a lot of the things in daily life – waking up in the morning, eating, reading, watching TV, and drinking coffee, for example.

## Tips to overcome withdrawal symptoms

- **Avoid temptation.** Stay away from people and places that tempt you to smoke.
- **Change your habits.** Switch to juices or water instead of coffee. Take a brisk walk instead of a smoke break.
- **Choose other things for your mouth:** Use substitutes you can put in your mouth such as sugarless gum or hard candy, raw vegetables such as carrot sticks.
- **Get active with your hands:** Do something to reduce your stress. Exercise or do something that keeps your hands busy, such as needlework or woodworking.
- **Breathe deeply:** When you were smoking, 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.** What you're doing isn't easy, and you deserve a reward. Put the money you would have spent on tobacco in a jar every day and then buy yourself a weekly treat

# If patient is not ready to quit “the model of 5 rs”

- **Relevance** – Motivational information has the greatest impact if it is personally relevant to the patient’s circumstances.
- **Risks** – Ask the patient to identify potential negative consequences associated with tobacco use, including:
  - **Acute health Risks** – shortness of breath, harm to pregnancy
  - **Long-term Risks** – heart attacks and stroke, lung, and other cancers
  - **Environmental Risks** – Increased risk of lung cancer in partners, respiratory infections in children of smokers.
- **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.

# The Healing Time Line

A realistic look at how long it takes for your body to recover after your last puff



● Twenty minutes after quitting, your blood pressure decreases.

● Eight hours: The amount of carbon monoxide in your blood drops back to normal while oxygen increases to normal.

● Forty-eight hours: Your nerve endings start to regenerate, and you can smell and taste things better.

● One to nine months: Coughing, sinus congestion, fatigue, and shortness of breath decrease.

● One year: The added risk of heart disease declines to half of that of a smoker.

● Five years: Your stroke risk may be reduced to that of someone who never smoked.

● Ten years: Your risk of all smoking-related cancers such as lung, mouth, and throat decreases by up to 50 percent.

● Fifteen years: Your risk of heart disease and smoking-related death is now similar to that of someone who never smoked.



# ELECTRONIC CIGARETTE

An **electronic cigarette** or **electronic Nicotine delivery system (ENDS)** is a battery-powered vaporizer which has a similar feel to tobacco smoking.

Electronic cigarettes do not contain tobacco, although they do use nicotine from tobacco plants. They do not produce cigarette smoke but rather an aerosol, which is frequently but inaccurately referred to as vapor.

## E-cig in smoking cessation

- As of 2014, research on the safety and efficacy of e-cigarette use for smoking cessation is limited.
- Their benefit in helping people quit smoking is uncertain.
- A 2014 Cochrane review found that **e-cigarettes** can help people quit, but was based on a small number of studies.
- Two 2014 reviews found **no evidence** that e-cigarettes are more effective than existing nicotine replacement treatments for smoking cessation.



# Nicotine replacement therapy (NRT)

- Nicotine Patch
- Nicotine Gum
- Nicotine Inhaler  
(Deliver Nicotine Fast)
- Nicotine Nasal Spray



- The goal of nicotine replacement therapy (NRT) is to provide nicotine to a smoker without using tobacco, thereby relieving nicotine withdrawal symptoms as the smoker breaks the behavior of cigarette smoking.
- The initial dosing of most NRT products is based on the number of cigarettes smoked daily.

- Starting on the quit day, patients who smoke **>10 cigarettes/day** (one-half pack) use the highest dose of the nicotine patch (**21 mg/day**) for four to six weeks,
- followed by **14 mg/day** for two weeks,
- and finish with **7 mg/day** for two weeks.
- Smokers who weigh **less than 45 kg** or smoke **≤10 cigarettes** per day are advised to begin with the 14 mg/day strength for six weeks, followed by 7 mg/day for two weeks.
- To use the nicotine patch, the smoker applies one patch each morning to any non-hairy skin site. It is removed and replaced with a new patch the next morning.

# Nicotine replacement therapy (NRT)

## Transdermal nicotine patch:

- The nicotine patch is the simplest NRT product for a smoker to use and provides the most continuous nicotine delivery of all NRT products.
- The patch has a long-acting, slow-onset pattern of nicotine delivery, producing relatively constant withdrawal relief over **24 hours**.
- Compliance with the patch is high.
- The patch is available over the counter.

## Nicotine gum:

- Nicotine gum is one of the most commonly used **short-acting NRT**.
- Chewing the gum releases nicotine that is absorbed through the oral mucosa, resulting in a peak of blood nicotine levels 20 minutes after starting to chew.
- The **4 mg** dose of **gum is recommended for smokers who smoke  $\geq 20$  cigarettes per day**, whereas the **2 mg** dose is recommended for lighter smokers.
- They can chew one piece of gum every **1 to 2** hours for six weeks, with a gradual reduction over a second six weeks, for a total duration of three months.
- Acidic beverages (eg, coffee, carbonated drinks) should be avoided before and during gum use, as acidic beverages **lowers oral pH**, causing nicotine to ionize and reducing nicotine absorption.

# Bupropion

Anti-depression

- **Bupropion** inhibits the uptake of norepinephrine, serotonin, and dopamine → reduce the urge of smoking.
- The quit date should be set for one to two weeks after bupropion therapy is initiated.
- Bupropion therapy is usually continued for **eight to 12 weeks** after the patient has quit smoking.

## ➤ Contraindications:

- A history of seizure disorder
- The presence of eating disorders.
- Uncontrolled hypertension

# Varenicline

- **Varenicline:**
  - It blocks the nicotine in tobacco smoke from binding to the receptor, thereby reducing the rewarding aspects of cigarette smoking.
  - It results in moderate levels of dopamine in the terminal synapse.
  - It reduces the withdrawal symptoms.
- It increases the chances of a successful quit attempt **two- to three fold** compared with non pharmacologic assistance.
- Varenicline is **superior** to bupropion in promoting abstinence.
- There is increased risk of **coronary events** with varenicline

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