

Smoking



Dr HUSSEIN SAAD

ASSISTANT PROFESSOR AND CONSULTANT, MRCP(UK)

FAMILY AND COMMUNITY MEDICINE

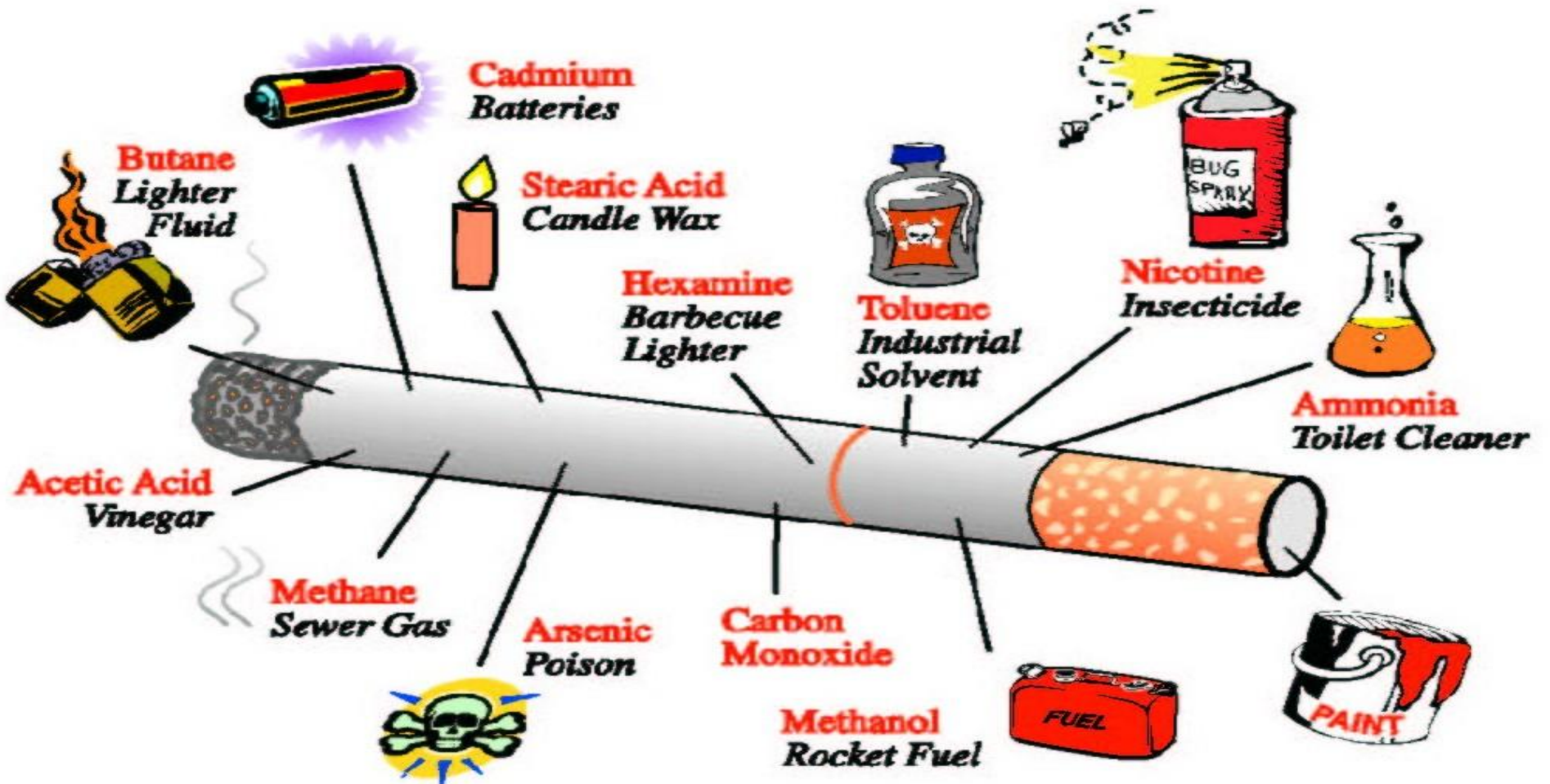
COLLEGE OF MEDICINE

KING SAUD UNIVERSITY

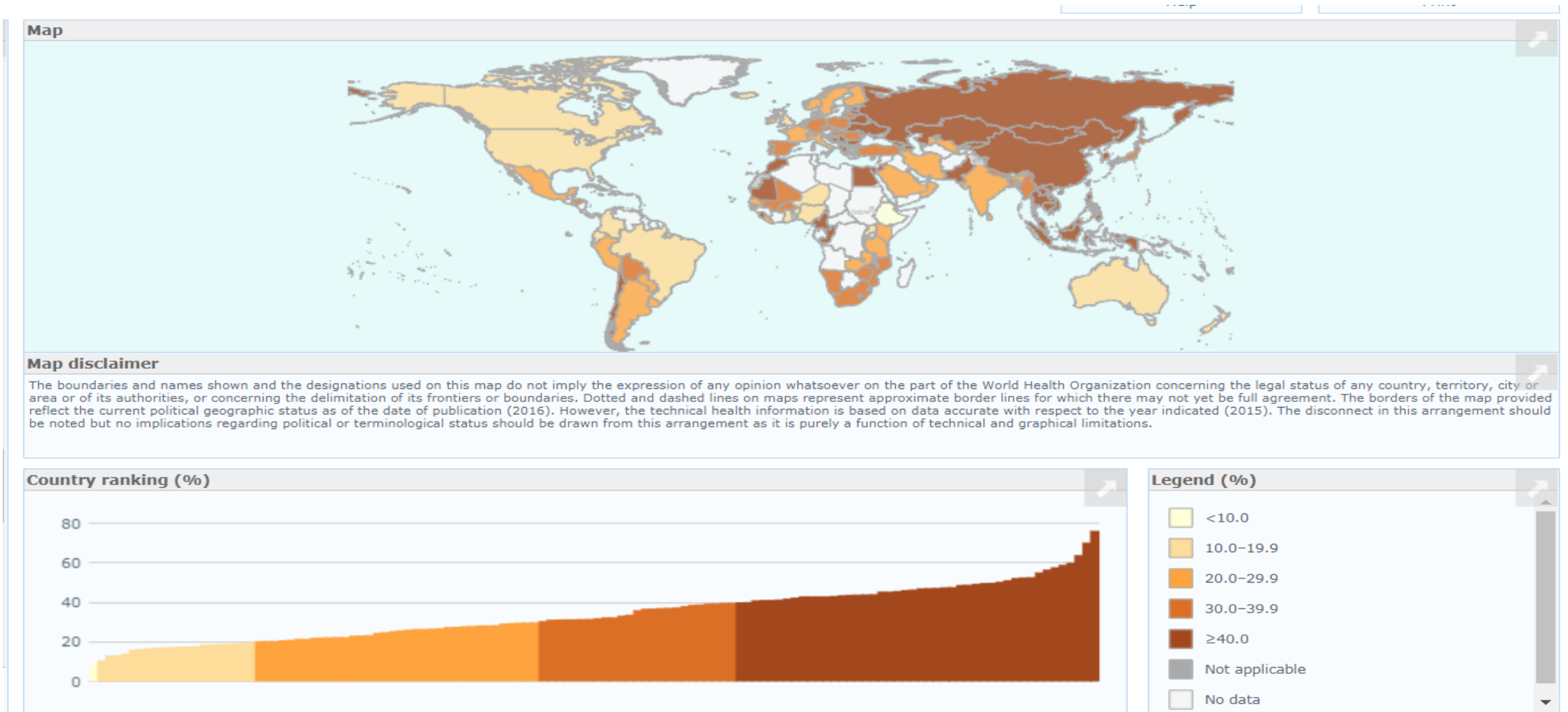
Objectives

- **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 of Tobacco Product Consumption and Exposure among Healthcare Students in King Saud University in Riyadh, Saudi Arabia (2017)

- A total of **1207** healthcare students, (College of Medicine, College of Dentistry, College of Pharmacy, College of Nursing and College of Medical Applied Science)
- The prevalence of tobacco product smoking was **13.5%**.
- The highest in the college of nursery **19.23%**, and lowest in the college of pharmacy **10.11%**.
- The age group of 18-21 years old, the prevalence was only **9.54%**, while the age group of 22-25 was **19.25%**, and for 26 years old students or more was **33.33%**.
- The prevalence of smoking water pipe came to be **12.1%** and of small-pipe (Midwakh) **5.6%**.
- The prevalence of students with direct home exposure was **31.48%** and environment exposure such as hanging out with friends was **40.93%**.

Amin HS, Alomair ANA, Alhammad AHA, Altwijri FAA, Altaweel AAA, et al. (2017) Prevalence of Tobacco Product Consumption and Exposure among Healthcare Students in King Saud University in Riyadh, Saudi Arabia. J Community Med Health Educ 7: 567

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**

Risks of smoking (Morbidity and Mortality)

**Smokers are more likely than nonsmokers to develop:
Heart disease, Stroke, and 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, Peripheral Vascular Disease 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)**

➤ **If nobody smoked, one of every three cancer deaths in the United States would not happen.**



Risks from Smoking

Smoking can damage every part of the body

Cancers

Head or Neck

Lung

Leukemia

Stomach

Kidney

Pancreas

Colon

Bladder

Cervix

Chronic Diseases

Stroke

Blindness

Gum infection

Aortic rupture

Heart disease

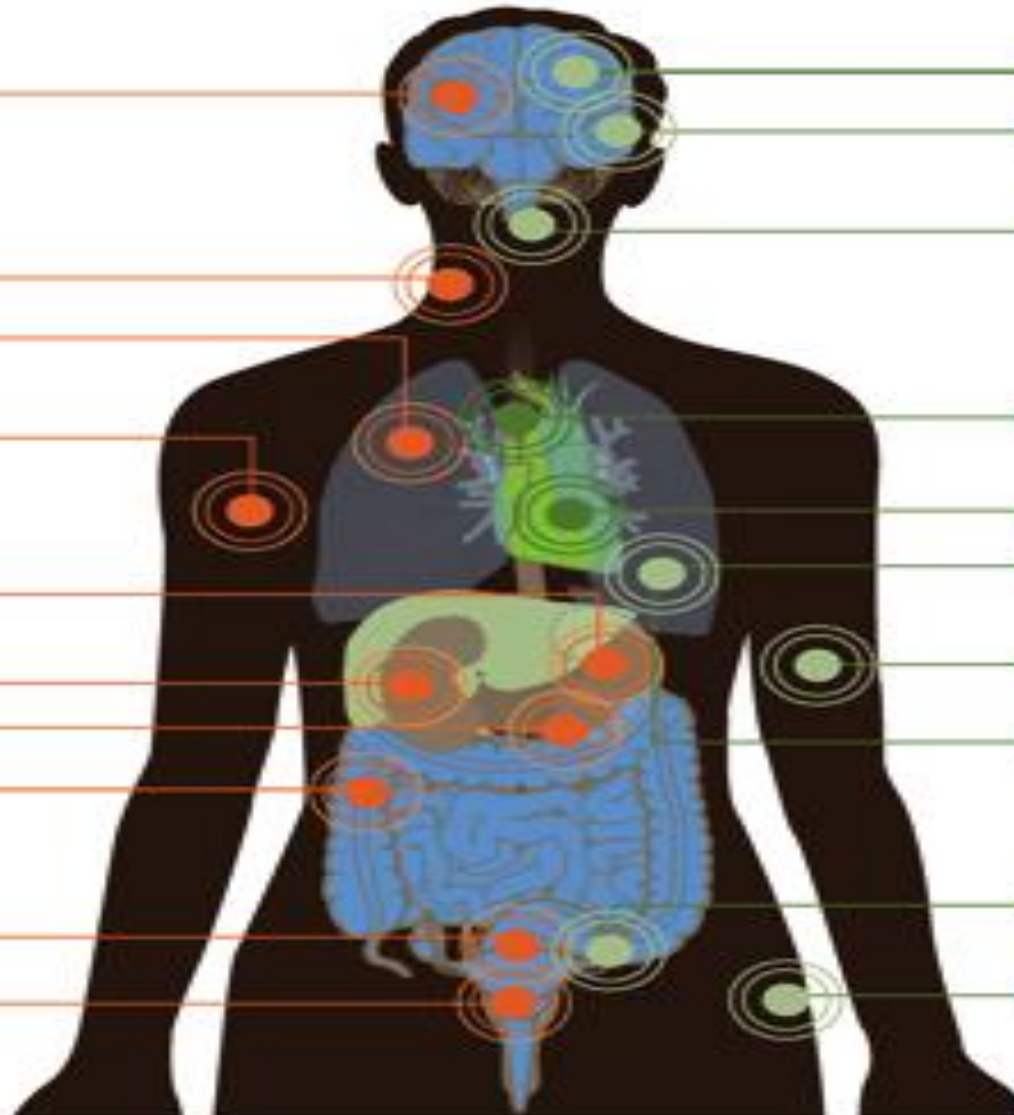
Pneumonia

Hardening of the arteries

Chronic lung disease & asthma

Reduced fertility

Hip fracture



Types of Smoking

Conventional smoking



Passive (secondhand) smoking



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



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

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

Effect of Passive Smoking on Pregnancy and Children

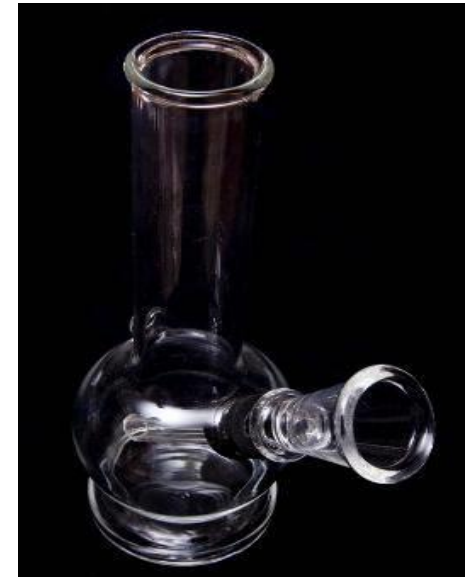
- **Smoking during pregnancy can lead to:**
 - ❑ **Premature delivery,**
 - ❑ **Low birth weight,**
 - ❑ **Sudden Infant Death Syndrome (SIDS),**
 - ❑ **Limited mental ability, trouble with learning.**



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.**

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 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:

- 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** 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.

Why quit smoking now?

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

Smoking Cessation Clinic in KSU Monday and Wednesday Morning



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 instead of coffee. Take a brisk walk instead.

Choose other things for your mouth: such as sugarless gum or hard candy, raw vegetables such as carrot.

Get active with your hands: Do something to reduce your stress like Exercise or keeps your hands busy.

Tips to overcome withdrawal symptoms

Breathe 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. Put the money you would have spent on tobacco in a jar every day and then buy yourself a gift.

Five Major Steps to Quit (The "5 A's")

Ask - about tobacco use for every patient at every visit.

Advise - every tobacco user to quit.

Assess - are you willing to quit smoking.

Assist - use counseling and pharmacotherapy to help him or her quit.

Arrange - Schedule follow up contact after the quit date.

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



Nicotine Replacement Therapy (NRT)

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.

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 Replacement Therapy (NRT)



- ❑ Starting on the quit day, patients who smoke **>10 cigarettes/day** use the highest dose of the nicotine patch (**21 mg/day**) for 4 to 6 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)

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 ≥ 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 (e.g, coffee) should be avoided before and during gum use, as acidic beverages **lowers oral pH**, causing reducing nicotine absorption.



Bupropion

Bupropion inhibits the uptake of norepinephrine, serotonin, and dopamine → reduce the urge of smoking and improve the mood so good in cases of depression.

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 (Champix / Chantix)

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



References

1-http://who.int/tobacco/surveillance/policy/country_profile/sau.pdf?ua=1

2-http://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/

3- [http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Passive smoking](http://www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Passive_smoking)

4-<http://www.cancer.org/%20healthy/stayawayfromtobacco/guidetoquittingsmoking/index>

5-
[http://www.uptodate.com/contents/image?imageKey=PC%2F74402&topicKey=PC%2F6920&source=see link&utdPopup=true](http://www.uptodate.com/contents/image?imageKey=PC%2F74402&topicKey=PC%2F6920&source=see_link&utdPopup=true)

6-<http://www.uptodate.com/contents/behavioral-approaches-to-smoking-cessation#H335652334>

7-
http://www.aafp.org/dam/AAFP/documents/patient_care/tobacco/AAFPStopSmokeGuide2012.pdf

8-http://www.medscape.com/viewarticle/559955_3

THANK YOU