

# Smoking and Substance Abuse

## Objectives:

- Describe the **Epidemiology** of smoking in Saudi Arabia
- Recognize **Risks** of smoking (Morbidity and Mortality)
- Appreciate the Effect of **passive smoking** on pregnancy, children...
- Be able to help the smoker to quit with **smoking cessation** aids and overcoming nicotine withdrawal symptoms
- Appreciate the **Role of PHC** physician in smoking cessation clinic
- Discuss the smoking cessation **medication**, Nicotine preparations, Varenicline, Bupropion, ...
- Recognize Factors that lead to **substance abuse**
- List **types** of substance abuse
- Appreciate **Method** to approach subjects with substance abuse

## Epidemiology:

- Every year, more than 7000 of Saudi Arabia people are killed by tobacco-caused disease.
- It is the **second** leading risk factor for death worldwide.
- **Prevalence** of cigarette smoking In 2018 in Saudi Arabia is **21.4%**

## Risk of smoking:

- Recent research has found that smoking just **one cigarette a day** has nearly half the risk of coronary heart disease and stroke compared to a 20-cigs-a-day smoker.

## Smoking and Cancer:

- There are thousands of chemicals in cigarette smoke, including around 70 known cancer-causing chemicals called **carcinogens**.
- Causes cancer of the lung, mouth, throat, voice box, oesophagus, pancreas, bladder, kidney, liver, cervix, ureter, nose, nasal sinuses, stomach and bowel.
- Smoking causes **acute myeloid leukaemia** and increases **breast cancer** risk.
- **Lung cancer** is the leading cause of cancer **death**, and is one of the hardest cancers to treat.

## Smoking and Cardiovascular Problems:

- Smoking tobacco **damages heart and blood vessels** increasing risk of heart disease and stroke.
- It's a major cause of coronary heart disease, which can lead to a heart attack.
- Smoking causes **high blood pressure**, lowers ability to exercise, and makes blood more likely to clot.
- **Decreases HDL** (good) cholesterol levels in the blood.
- Smoking is a major risk factor for **peripheral arterial disease** (PAD)

## Smoking and Respiratory Problems:

- Chronic obstructive pulmonary disease (COPD) is one of the leading causes of death in the world.

- 45% of all deaths from COPD are attributed to tobacco use.
- Types of (COPD) that smoking can lead to:
  1. **Chronic bronchitis**
  2. **Emphysema**

## **Passive Smoking:**

Inhaling Smoke that comes from burning tobacco products. Or exhaled smoke plus the “sidestream”. It results in several adverse health effects on respiratory and cardiac systems as the unfiltered smoke has 4000 irritants.

## **Passive Smoking in Pregnancy:**

- Low birth weight
- Poor lung function
- Ear infections
- Asthma
- Sudden infant death syndrome
- Abnormal or delayed growth and development

## **Passive Smoking in children:**

- Children exposed to smoke are at risk of respiratory diseases such as asthma and infections.
- Meningitis and ear infections are increased with passive smoking
- Particularly vulnerable in cars.

## **Smoking Cessation:**

### **NRT (Nicotine Replacement Therapy):**

It helps reduce nicotine withdrawal symptoms and urges to smoke. No need to talk to the health care provider before using.

NRT comes in variety of forms that used in different ways:

#### **1- Nicotine Patch:**

Placed on the skin to supply the small controlled amount of nicotine to the body.

#### **Side effects:**

- Nausea and vomiting

- Headache
- Increased blood pressure
- Acne

## 2- Nicotine Gum:

Chewed to release nicotine that gets absorbed through tissue inside the mouth.

### Side effects:

- Nausea/vomiting/Diarrhea
- Mouth/tooth or jaw problems
- Dizziness
- Weakness
- Rash
- Contraindicated in active temporomandibular joint disease.

## 3- Nicotine Lozenge:

Looks like hard candy; placed in the mouth where it slowly dissolves, releasing nicotine. available over the counter.

### Side effects:

- Increased blood pressure
- Nausea/vomiting
- Tachycardia
- Dizziness

## 4- Nicotine Inhaler:

Delivers a specific amount of nicotine to the user with each puff.

It works much more quickly than the nicotine gum. Available only from your doctor.

### Side effects:

- Mouth/throat irritation
- Nausea/vomiting
- Cough
- Headache
- Rhinitis
- Dyspepsia

**Disadvantages:** It is more expensive than nicotine gum.

## 5- Nicotine Nasal spray:

Pump bottle inserted into the nose and sprayed to deliver specific amount of nicotine. It gets rid of the symptoms faster than any medication.

**Side effects:**

- Local irritation
- Fatigue
- Weight gain
- CNS & psychological manifestation

**Summary of NRT types:**

NRT Types	How to Get Them	How to Use Them
Patch	Over the Counter	Place on the skin Gives a small and steady amount of nicotine
Gum	Over the Counter	Chew to release nicotine Chew until you get a tingling feeling, then place between cheek and gums
Lozenge	Over the Counter	Place in the mouth like hard candy Releases nicotine as it slowly dissolves in the mouth
Inhaler	Prescription	Cartridge attached to a mouthpiece Inhaling through the mouthpiece gives a specific amount of nicotine
Nasal Spray	Prescription	Pump bottle containing nicotine Put into nose and spray

**Smoking cessation medication:**

- Nicotine replacement therapy (NRT)
- Non-nicotine replacement therapy: (Varenicline-Bupropion)

**Varenicline:**

The drug competitively inhibits the ability of nicotine to bind to and activate the **alpha-4 beta-2 receptor**.

- Patients should be treated with **varenicline** for **12 weeks**
- Initiate regimen **1 week before quit smoking date**
- Days 1-3: 0.5 mg PO qd (once daily )
- Days 4-7: 0.5 mg PO BID (twice daily)
- Day 8 to end of treatment: 1 mg PO BID

If quitting is successful after 12 weeks, continue another 12 weeks at 1 mg q12hr

#### Side effects:

- Neuropsychiatric Adverse Events including Suicidality
- Seizures
- Interaction with alcohol
- Cardiovascular events
- Serious skin reactions

#### Contraindications:

- pregnancy/ breast feeding
- Age under 18

#### Bupropion:

It is a **norepinephrine/dopamine-reuptake inhibitor (NDRI)**

most commonly for the management of major depressive disorder (MDD), seasonal affective disorder (SAD), and for **smoking cessation**.

Weakly inhibiting the enzymes involved in the uptake of norepinephrine and dopamine from the synaptic cleft, therefore prolonging their duration of action.

bupropion has anti-craving and anti-withdrawal effects

Bupropion should be continued for **7 to 12 weeks**, Initiate bupropion therapy 1 to 2 weeks before the patient's target smoking "quit day"

150 mg PO **once** daily for the first 3 days

150 mg PO **twice** daily for the remainder of the treatment period

#### Side effects:

- dry mouth, stuffy nose
- sleep problems (insomnia)
- tremors, sweating, feeling anxious or nervous

- confusion, agitation

### Contraindications:

- Epilepsy
- Alcohol / benzodiazepines user
- Active brain tumors.
- Pregnancy/breast feeding
- Age under 18

Most patients relapse within the first **6 to 12** months of a smoking cessation attempt.

## Types of Substance Abuse:

### 1- Alcohol:

A colorless liquid produced by the natural fermentation of sugars.

**Side effects:** Slurred speech, Drowsiness, Vomiting, Upset stomach, decreased perception and coordination, Unconsciousness.

### 2- Central Nervous System Depressants:

Medications that slow brain activity, which makes them useful for treating anxiety and sleep problems. (Barbiturates, Benzodiazepines)

**Side effects:** Drowsiness, slurred speech, poor concentration, confusion, problems with movement and memory, lowered blood pressure, slowed breathing.

### 3- Cocaine:

A powerfully addictive stimulant drug made from the leaves of the coca plant.

**Side effects:** Euphoria, increased energy, violent behavior, enlarged pupils, increased body temperature, nausea, anxiety, panic attacks, paranoia, psychosis, heart attack, stroke, seizure, coma.

### 4- Heroin:

An opioid drug made from morphine, a natural substance extracted from seed pod of opium poppy plants.

**Side effects:** Analgesia, euphoria, dry mouth, itching, nausea, slowed breathing and heart rate.

### **5- Marijuana (Cannabis):**

Made from Cannabis sativa. The main psychoactive (mind-altering) chemical is delta-9-tetrahydrocannabinol, or THC.

**Side effects:** Enhanced sensory perception and euphoria followed by drowsiness/relaxation, problems with balance and coordination, increased heart rate.

### **6- Opioids:**

Pain relievers with an origin similar to that of heroin. Opioids can cause euphoria and are often used nonmedically, leading to overdose deaths.

**Side effects:** Analgesia, euphoria, drowsiness, nausea, constipation, slowed breathing, death.

### **7- Inhalants:**

Solvents, aerosols, and gases found in household products such as spray paints, markers, glues, and cleaning fluids; also nitrites (e.g., amyl nitrite), which are prescription medications for chest pain.

**Side effects:** Confusion, nausea, slurred speech, lack of coordination, euphoria, dizziness, lightheadedness, hallucinations/delusions, headaches, death from asphyxiation, suffocation, convulsions or seizures, coma, or choking.

### **8- Amphetamine:**

It is a stimulant that affects nerves that contribute to hyperactivity and impulse control. It is used to treat attention deficit hyperactivity disorder (ADHD).

**Side effects:** Agitation, delusion, false sense of well-being, anxiety, bladder pain, bloody urine, mental depression, etc.

## **Methods to Approach Substance Abuser:**

### **Substance misuse screening:**

Single question screen: “How many times in the past year have you used an illegal drug or used a prescription medication for nonmedical reasons?”

### **Substance abuse:**

It is the development of consequences from substance use.



### **Motivational interviewing:**

Principles and techniques derived from motivational interviewing can be used to manage resistance and increase readiness to change.

For patients with substance abuse, experts recommend advising abstinence.

The aim of motivational interviewing is to empower and motivate individuals to take responsibility and change their substance use behavior.

**Stage 1: Understanding why they need to change**

**Stage 2: Planning and making the changes**

**Stage 3: Maintaining the change**

### **Harm reduction strategies:**

For patients who are not committed to abstinence, harm reduction strategies is an appropriate alternative. It reduces the negative health consequences of substance use, for example:

- providing clean needles to persons who continue to inject drugs
- Avoid driving while intoxicated

### **Substance dependence:**

It is a chronic relapsing and remitting illness, patients require chronic care approach that can include:

- Pharmacotherapy
- Referral to specialty treatment
- Mutual help meetings
- Ongoing counseling and care coordination.
- Engage family members in the treatment plan as family support is important in the recovery process.

### **Factors Lead to Substance Abuse:**

#### **1- Environment:**

- Peer pressure
- Stress (Trauma, exposure to physical, sexual, or emotional abuse, ...)
- Low education level

#### **2- Illness:**

- Mental health disorder
- Previous usage for medical purpose

3- Early use → longer time of usage → more addiction

4- Taking a highly addictive drug

## Role of PHC physician in (smoking cessation clinic):

### 1- Ask about:

- Can you tell me what **type you are using** ?
- **How many** cigarettes do you smoke in a day ?
- for **how long** u ve been smoking ?
- How **soon after waking up** do you smoke your first cigarette?
- do you use any **other substance** / alcohol / ..?
- Do you have any **medical diseases** ?
- **Past surgery** ?
- **Medication** ?
- **family history** ?
- Other members around you smoke ? example friend

### 2- Ask about Quitting:

- Have you **tried to quit** smoking in the past?
- Can you tell me each time **what happens? when? therapy used?**

### 3- Motivational:

- Why do you smoke ?
- Why do you want to quit?
- From 1-10 how confirmed do you want to quit?

### 4- Consultation:

- Impact of smoking (smoking affect on him/her)
- Asses **Risk factors**: friend, dealing with stress, new good habit, eliminate coffee to 50%
- Discussed **nicotine withdrawal symptoms**? how to decrease it?
- Therapy that could help him quit? nicotine patch/gums, varacilline,
- Dose and side effects of the therapies
- Set quitting day
- Ask about Questions/concerns?
- follow up