



International
Pharmaceutical
Students' Federation
Eastern Mediterranean Regional Office



Lebanese Pharmacy
Students' Association
Leading by Serving
Achieving through Passion

Choose Health

Empowering Lifestyle for
Better Disease Prevention
and Management





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01 Introduction

Our awareness campaign, "Choose Health," aims to highlight the critical role of lifestyle choices in the prevalence and prognosis of various diseases. By promoting healthier habits and behaviors, we empower individuals to take control of their health and improve their overall well-being.

Lifestyle diseases are ailments whose occurrence is primarily linked to the day-to-day life habits of an individual. If an individual's daily habits are improper, they might lead one to follow a sedentary lifestyle daily. Such a lifestyle can further lead to several chronic non-communicable diseases, which can have near-life-threatening consequences.

Each year, chronic diseases cause 7 of 10 deaths among Americans. Heart disease, cancer, and stroke account for more than 50% of all deaths each year.

Today, chronic diseases are a major public health problem worldwide. In 2005, the World Health Organization (WHO) estimated that 61 percent of all deaths -- 35 million -- and 49 percent of the global burden of disease were attributable to chronic diseases.

By 2030, the proportion of total global deaths due to chronic diseases is expected to increase to 70 percent and the global burden of disease to 56 percent. The greatest increase is anticipated in the African and Eastern Mediterranean regions.

02 Type 2 Diabetes Mellitus

Diabetes mellitus (DM) is a chronic metabolic condition defined by persistent hyperglycemia. It could be related to decreased insulin secretion, insulin resistance in the peripheral tissues, or both.

Type 2 diabetes affects an estimated 462 million people worldwide. More than 1 million deaths were attributable to this illness in 2017, making it the tenth greatest cause of death. Even though it affects people later in life, type 2 diabetes is the seventh biggest cause of disability and years of life lost (DALYs).

How does lifestyle play a role in this?

- Plant foods are connected with a lower risk of type 2 diabetes than meat, low energy density foods are thought to be more protective than high energy density foods.
- Fermented dairy products may be more helpful than non-fermented ones.
- Processed carbohydrates and sugar-sweetened beverages are regularly linked to an increased risk of obesity and diabetes.
- Consuming a handful of nuts on a daily basis may provide some protection against T2D, despite the fact that nuts are a high energy density food.
- People who are more active have a 30% lower chance of getting diabetes compared to those who are less active.
- Replacing just 30 minutes of sitting with moderate-intensity exercise can significantly improve insulin sensitivity by 15%.



02 Type 2 Diabetes Mellitus

Asymptomatic Adults Testing Criteria

Overweight or Obese Adults (BMI ≥ 25 kg/m² or ≥ 23 kg/m² in Asian Americans) with Risk Factors:

- Family history of diabetes, high-risk ethnicity, history of CVD, hypertension, low HDL or high triglycerides, polycystic ovary syndrome, physical inactivity, and conditions linked to insulin resistance.

Specific Groups:

- Prediabetes (A1C $\geq 5.7\%$, IGT, or IFG): Test yearly.
- Women with Gestational Diabetes Mellitus (GDM): Lifelong testing at least every 3 years.
- General Population: Begin testing at age 45. Repeat at least every 3 years if normal, more frequently if risk factors are present.

Youth Screening

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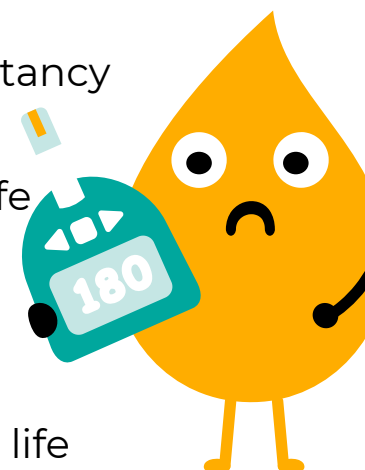
02 Type 2 Diabetes Mellitus

Diagnostic Criteria for Diabetes

- Fasting Plasma Glucose (**FPG**): **≥ 126 mg/dL (7.0 mmol/L)**.
- 2-Hour Plasma Glucose (2-h PG) during **OGTT**: **≥ 200 mg/dL** (11.1 mmol/L).
- **A1C**: **$\geq 6.5\%$** .
- Random Plasma Glucose: **≥ 200 mg/dL** in patients with hyperglycemia symptoms.
- **Diagnosis requires two abnormal test results from the same or separate samples.**

Prognosis

- Vascular complications, especially coronary heart disease, are the leading cause of death among diabetics.
- High blood sugar levels increase the risk of heart disease, stroke, blindness, kidney issues, poor leg circulation, infections, and sexual dysfunction.
- Achieving more risk factor targets reduces mortality in Type 2 diabetes patients.
- Lowering A1C from 9.9% to 7.7% can extend life expectancy by 3.4 years.
- Reducing BMI from 41.4 to 24.3 can add 3.9 years to life expectancy.
- Lowering systolic blood pressure from 160 to 114 can increase life expectancy by 1.9 years.
- Lowering LDL cholesterol from 146 to 59 can improve life expectancy by 0.9 years.



03 Hypertension

Did you know that nearly 1 in 3 adults across the Middle East have high blood pressure, also known as hypertension?

That's a worrying statistic, but the good news is that the things we do in our daily lives can significantly impact our risk!



Definition

Hypertension is a condition where the force of blood pushing against your artery walls is consistently too high. Over time, this can damage your heart, arteries, kidneys, and other organs, leading to serious health problems.

How Your Lifestyle Makes a Difference:

- **Hidden Salt Danger:** While we all need some salt, a diet high in sodium is a major contributor. Processed foods, restaurant meals, and even seemingly healthy snacks can be loaded with hidden sodium. Be mindful of food labels and opt for fresh ingredients whenever possible.



03 Hypertension

How Your Lifestyle Makes a Difference:

- **Get Active and Get Healthy:** A sedentary lifestyle increases your risk of hypertension. Aim for at least 150 minutes of moderate-intensity exercise per week. This could be brisk walking, swimming, cycling, or dancing – find activities you enjoy and make them part of your routine!
- **Stress Less, Live More:** Chronic stress can lead to unhealthy coping mechanisms like unhealthy eating or smoking, both of which raise blood pressure. Find healthy ways to manage stress, such as meditation, yoga, or spending time in nature.

Hypertension Myths Debunked:



Only older adults need to worry about high blood pressure

While age is a risk factor, hypertension can affect anyone, regardless of age. Regular blood pressure monitoring is crucial for everyone.



I can stop taking my medication once my blood pressure is under control.

Hypertension requires ongoing management, including medication if prescribed by a healthcare professional. Suddenly stopping medication can lead to a dangerous spike in blood pressure.



Hypertension is only caused by stress

While stress can contribute to hypertension, it's not the sole culprit. Factors like diet, lack of exercise, and genetics also play significant roles.

04 Chronic Obstructive Pulmonary Disorder (COPD)

What is COPD?

Chronic obstructive pulmonary disease (COPD) is a chronic inflammatory lung disease characterized by obstructed airflow from the lungs, leading to lung damage or mucus congestion.

Symptoms include coughing, breathing difficulties, wheezing, and fatigue. The primary causes are smoking and air pollution, with the condition being more prevalent among current and ex-smokers, particularly as they age.



Causes and Lifestyle Factors

COPD develops gradually over time due to a combination of risk factors:

- **Tobacco smoking** is the most significant, responsible for over 70% of cases in high-income countries and 30-40% in low- and middle-income countries, where **household air pollution** is also a major factor.
- Additional causes include **genetic factors**, **occupational exposure** to dust and chemicals, **childhood respiratory infections**, and **asthma**.

04 Chronic Obstructive Pulmonary Disorder (COPD)

Lifestyle changes can significantly improve COPD symptoms.

- **Quitting smoking or vaping** is crucial, as even long-term smokers benefit from cessation.
- **Avoiding secondhand smoke** and indoor cooking fires is essential.
- **Maintaining physical activity** and protecting oneself from lung infections through annual flu **vaccinations**, pneumonia vaccines, and COVID-19 vaccines and boosters are also important.

Prevalence



COPD-caused deaths globally in 2019.



Leading cause of death globally in 2019.

Nearly 90% of COPD deaths under the age of 70 occur in low- and middle-income countries. COPD is the seventh major contributor to global health issues, as measured by disability-adjusted life years.

04 Chronic Obstructive Pulmonary Disorder (COPD)

Risk Factors

Genetic Factors: One notable genetic factor is a deficiency in α_1 antitrypsin, found in 1-3% of COPD patients. Low levels of this enzyme, combined with smoking or other exposures, significantly increase the risk of developing panlobular emphysema.

Tobacco Smoke: Tobacco smoke is the leading cause of COPD. In high-income countries, 73% of COPD-related deaths are linked to smoking, compared to 40% in low- and middle-income countries. Smoking during pregnancy can harm fetal lung development, and secondhand smoke exposure also contributes to COPD.

Occupational Exposure: Exposure to dust, chemicals, vapors, and fumes at work is a significant risk factor for COPD.

Indoor Air Pollutants: Biomass fuels (e.g., coal, straw, animal dung, crop residues, wood) used for heating and cooking in poorly ventilated homes are major COPD risk factors, particularly in low- and middle-income countries. Indoor smoke exposure accounts for 35% of COPD cases and 36% of lower respiratory disease deaths in these regions.

Outdoor Air Pollutants: Urban air pollution contributes to 1% of COPD cases in high-income countries and 2% in low- and middle-income nations. It is also linked to lower respiratory infections and acute cardiopulmonary events, which can exacerbate COPD.

04 Chronic Obstructive Pulmonary Disorder (COPD)

Aging: COPD prevalence, morbidity, and mortality increase with age due to the natural decline in lung function starting in the third and fourth decades of life. Older individuals with higher lung function tend to have better longevity.

Infections: Infections are critical in COPD development and progression. Early life exposure to infections can lead to bronchiectasis and changes in airway responsiveness. Most COPD exacerbations are associated with bacterial or viral infections.

Asthma: Asthma, especially when coupled with smoking, increases the likelihood of developing COPD.

Gender: Historically, COPD was more common in men due to higher smoking rates and occupational exposures. However, COPD rates are now leveling between genders in high-income countries with similar smoking habits.

Prognosis

1

Stage 1 (Mild COPD)

Symptoms include increased coughing and mucus production. Smoking cessation and lifestyle changes are crucial.

2

Stage 2 (Moderate COPD)

Persistent cough, mucus production, and difficulty breathing are common. Medications and breathing techniques are recommended.

04 Chronic Obstructive Pulmonary Disorder (COPD)

3

Stage 3 (Severe COPD)

Lung function deteriorates further, with more severe symptoms. Medications and oxygen therapy may be necessary.

4

Stage 4 (Very Severe COPD)

Severe breathing difficulties even with minimal activity. Oxygen levels can drop dangerously, requiring hospital visits. Surgical interventions or lung transplants may be considered.

Life expectancy decreases with disease progression, particularly in stages two and three, typically by five to seven years. Avoiding smoking and engaging in regular exercise can improve prognosis.

Diagnosis

Diagnosis involves a **comprehensive health history** and **physical examination**, focusing on smoking habits, exposure to pollutants, childhood respiratory infections, and family history of lung disease. Symptoms such as shortness of breath, chronic cough, and mucus production are assessed, along with the impact on daily life.

Tests

Breathing tests (spirometry), alpha-1 antitrypsin blood tests, chest X-rays, CT scans, and oxygen level measurements (oximetry or ABC) are used to diagnose and assess COPD. Spirometry is the most common lung function test, measuring air exhalation to evaluate lung function.

05 Obesity

Definition

The term '**overweight**' refers to excess body fat accumulation, which can progress to obesity if not managed properly. **Obesity** is described as a chronic disease characterized by excessive body fat, posing serious health risks such as type 2 diabetes, heart disease, cancer, and negative impacts on bone health and fertility.

Additionally, it can significantly affect quality of life, including sleep and movement. Understanding these implications underscores the importance of addressing obesity for overall health.

Prevalence

101 studies were conducted with a total of 698,905 participants from the Middle East. The pooled estimates revealed a prevalence of:

21%

Obese



33%

Overweight

Both obesity and overweight were found to increase with age, particularly among individuals over 40.

05 Obesity

Causes

Obesity is a multifaceted condition influenced by various lifestyle factors:

- **Energy imbalance**, caused by consuming more calories than the body uses, is a primary contributor.
- **Sedentary lifestyles** and **poor sleep quality** exacerbate this imbalance.
- **Unhealthy eating habits**, such as excessive consumption of calories, saturated fats, and added sugars, also contribute.
- **Certain health conditions** like metabolic syndrome and polycystic ovary syndrome, as well as **genetic predispositions**.
- **Medications** like antidepressants and antipsychotics may disrupt hunger signals, contributing to weight gain.



However, lifestyle changes can mitigate genetic risks and manage medication-induced weight gain. It's crucial for individuals to adopt healthy behaviors, including regular physical activity, balanced diets, and adequate sleep, to prevent and manage obesity.

05 Obesity

Health Risks Associated with Obesity

Obesity is associated with various serious health risks including:



Additionally, individuals with obesity have a higher likelihood of mortality from any cause. The prognosis related to obesity may also vary based on race.

Diagnosis

Accurate diagnosis of obesity is crucial for effective treatment and prevention of related health issues. Various methods are used, each with advantages and drawbacks.

1. **Body Mass Index (BMI)** is commonly used but doesn't differentiate between fat and lean mass or consider fat distribution.

05 Obesity

2. **Waist Circumference (WC)** estimates abdominal obesity but may not be suitable for all body types.
3. **Dual-Energy X-ray Absorptiometry (DXA)** is precise but costly and exposes individuals to radiation.
4. **Bioelectrical Impedance Analysis (BIA)** is portable and non-invasive but can be affected by factors like hydration.
5. **Waist-to-Hip Ratio (WHR)** indicates body fat distribution but doesn't measure total fat mass.
6. **Advanced imaging techniques** like MRI and CT scans provide detailed insights but are expensive and require specialized equipment.

Healthy Lifestyle Changes:

To achieve and maintain a healthy weight, healthcare providers emphasize lifelong healthy lifestyle changes, with even modest weight loss of 5% to 10% significantly improving health and quality of life.



Healthy Diet

Focus on heart-healthy foods and gradual reduction of total daily calories, with tools like the DASH Eating Plan to guide calorie needs and goals.



Regular Physical Activity

It is essential for weight management, with personalized recommendations from healthcare providers.

05 Obesity



Good-quality Sleep

A total of 7-8 hours per night for adults, is vital for overall health, as lack of sleep has been linked to obesity.



Behavioral Weight-loss Programs

Led by trained professionals, offering customized plans involving reduced-calorie diets, physical activity goals, and behavioral strategies to facilitate and maintain lifestyle changes.

Medical Treatment

When lifestyle changes prove insufficient, healthcare providers may prescribe **FDA-approved medications** for weight loss or management. These medications target various body parts, such as the brain, gastrointestinal tract, and pancreas, to reduce appetite, block fat absorption, or regulate insulin release.

For individuals who don't respond to lifestyle changes or medication, **FDA-approved weight-loss devices** offer another option, with about half of users experiencing at least a 5% reduction in body weight.

In cases where BMI is 30 or higher and there are risks of obesity-related complications, **weight-loss surgery** may be recommended.

Surgery options include gastrectomy, gastric banding, and gastric bypass, but all surgeries carry potential risks, underscoring the importance of discussing benefits and risks with a healthcare provider.

06 Dyslipidemia

Introduction

Dyslipidemia is the imbalance of lipids such as **cholesterol, low-density lipoprotein cholesterol, (LDL-C), triglycerides, and high-density lipoprotein (HDL)**. A fasting blood test that checks for LDL, HDL, and triglycerides will reveal whether their levels are high, low, or in a healthy range. Also, getting a lipid profile done every five years is recommended for people over 20. Common imbalances are hypertriglyceridemia, hypercholesteremia (high LDL), and low HDL levels.

Prevalence and Related Statistics

In a study conducted in Saudi Arabia that included a total of **244 participants**.

20.1%

of the participants
had been
diagnosed with
dyslipidemia

83.2%

of the participants
have never been
smokers

51.6%


had a BMI
greater than 25

20.9%

of participants
reported having a
family history of
dyslipidemia or
hypercholesterol-
emia

61%

of the sample
reported never
checking their
lipid profile



The dyslipidemia risk assessment among those who were not diagnosed with dyslipidemia indicated a high prevalence of physical inactivity and a high level of consumption of food items with high lipid content, and nearly half of the undiagnosed subjects were either overweight or obese.

06 Dyslipidemia

Prevalence and Related Statistics



High total cholesterol in the United States:

- Between 2017 and 2020, **10% of adults age 20 or older** had total cholesterol levels above 240 mg/dL and about 17% had high-density lipoprotein (HDL, or “good”) cholesterol levels below 40 mg/dL.
- Slightly more than half of U.S. adults (54.5%, or 47 million people) who could benefit from cholesterol medicine are currently taking it.
- About **86 million U.S. adults age 20 or older** have total cholesterol levels above 200 mg/dL. Nearly 25 million adults in the United States have total cholesterol levels above 240 mg/dL.
- About **7% of U.S. children and adolescents** ages 6 to 19 have high total cholesterol.

Causes

Primary causes include genetic disorders such as Familial Hypercholesterolemia (FH), where mutations in the LDL receptor gene lead to high LDL cholesterol, and Familial Combined Hyperlipidemia (FCHL), which involves multiple genetic variants affecting lipid metabolism. Polygenic Hypercholesterolemia, resulting from small-effect polymorphisms in several genes, also contributes to elevated cholesterol levels.

06 Dyslipidemia

Causes

Secondary causes encompass lifestyle factors such as diet, physical inactivity, excessive alcohol consumption, and smoking. Diets high in saturated fats, trans fats, and cholesterol, combined with a sedentary lifestyle, can elevate LDL and triglyceride levels while reducing HDL cholesterol. Chronic heavy drinking increases triglycerides, and smoking lowers HDL while raising triglycerides.

Risk factors

1

Age

with lipid metabolism changes increasing risk as people grow older

2

Gender

with men generally at higher risk at younger ages and women's risk increasing post-menopause due to hormonal changes

3

Genetics and Family History

as a family history of dyslipidemia or cardiovascular disease predisposes individuals to similar conditions

4

Ethnicity

with certain ethnic groups, such as South Asians, showing higher prevalence rates





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