بسم الله الرحمن الرحيم

- الحمد لله رب العالمين والصلاة والسلام علي سيدنا محمد الصادق الوعد الأمين ، اللهم أخرجنا من ظلمات الجهل والوهم ، إلى نور المعرفة والعلم..
- 3rd lecture for dr. samar
- Edited by : Mohammad aboshaban

Global Burden of CVD

- لا تحفظو أرقام بهاي السلايد
- CVDs are the 1st cause of Death Globally.
- An estimated CVD Deaths of 17.3 million people in 2008(30% of all global deaths).
- 7.3 million deaths were due to CAD.
- 6.2 million deaths were due to stroke.
- By 2030 about 25 million people will die from CVDs.

More developed countries have higher percentage of NCD prevalence → because life expectancy is higher ^-^

WHO: World Health Organization.

The burden Noncommunicable diseases In Jordan

- The burden of Noncommunicable diseases is responsible for **75.6%** of all deaths; **cardiovascular** diseases account for 34.7%, **cancers** 14.6%, **respiratory** diseases 3.4% and **diabetes mellitus** 6.7% of all deaths.
- 20% of adults between the ages of 30 and 70 years are expected to die from one of the four main Noncommunicable diseases.
- The prevalence of insufficient physical activity in adolescents is **85.2%.**

The four main NCD (in blue)

Global health estimates 2014

- **Raised blood pressure affects 18.9% of adults above 18 years.**
- **obesity affects 30% of the population (24.0% males and 36.4% females).**
- **25.2% of youth** (13–15 years of age, 34.8% boys, 17.8% girls) **have ever smoked cigarettes**, **while more than half (53.6%) of youth have been affected by passive smoking** .
- Adult per capita consumption of alcohol is 0.7 liters of pure alcohol.

Don't memorize boys and girls numbers, just know that females are higher

Major Modifiable Risk Factors: -High Blood Pressure. -Abnormal Blood Lipids. -Tobacco Use. -Physical Inactivity. -Obesity. -Un healthy Diet(low fiber & vegetable intake, high Salt consumption). -Diabetes.	**Other Modifiable Risk Factors:** -Low Socioeconomic Status. -Mental ill Health(Depression). -Psychosocial Stress. -Heavy Alcohol Use. **See the next slide, Although this slide is very important.**
Non Modifiable Risk Factors: -Age. -Heredity or Family Hx. -Gender. -Ethnicity or race.	Novel Risk Factors: -Excess homocycteine in the blood. -Inflammatory Markers(C Reactive Protein). -Abnormal blood coagulation(elevated blood Fibrinogen). CDC – Work Sheet

This slide was added by me for clarification

- **Modifiable** : we can change it (life style)
- **Non Modifiable** : we can’t change it (mostly genetics related).
- **How is diabetes modifiable ?**
- -> we can’t treat it but we can control it ^_^.
- **Cardiovascular → hypertension .**

Heart Disease Leading Cause of Death in Jordan

- Heart disease has become a leading threat to the health of the Jordanian population, with **41.5** percent of deaths last year found to be related with heart ailments .

East Mediterranean

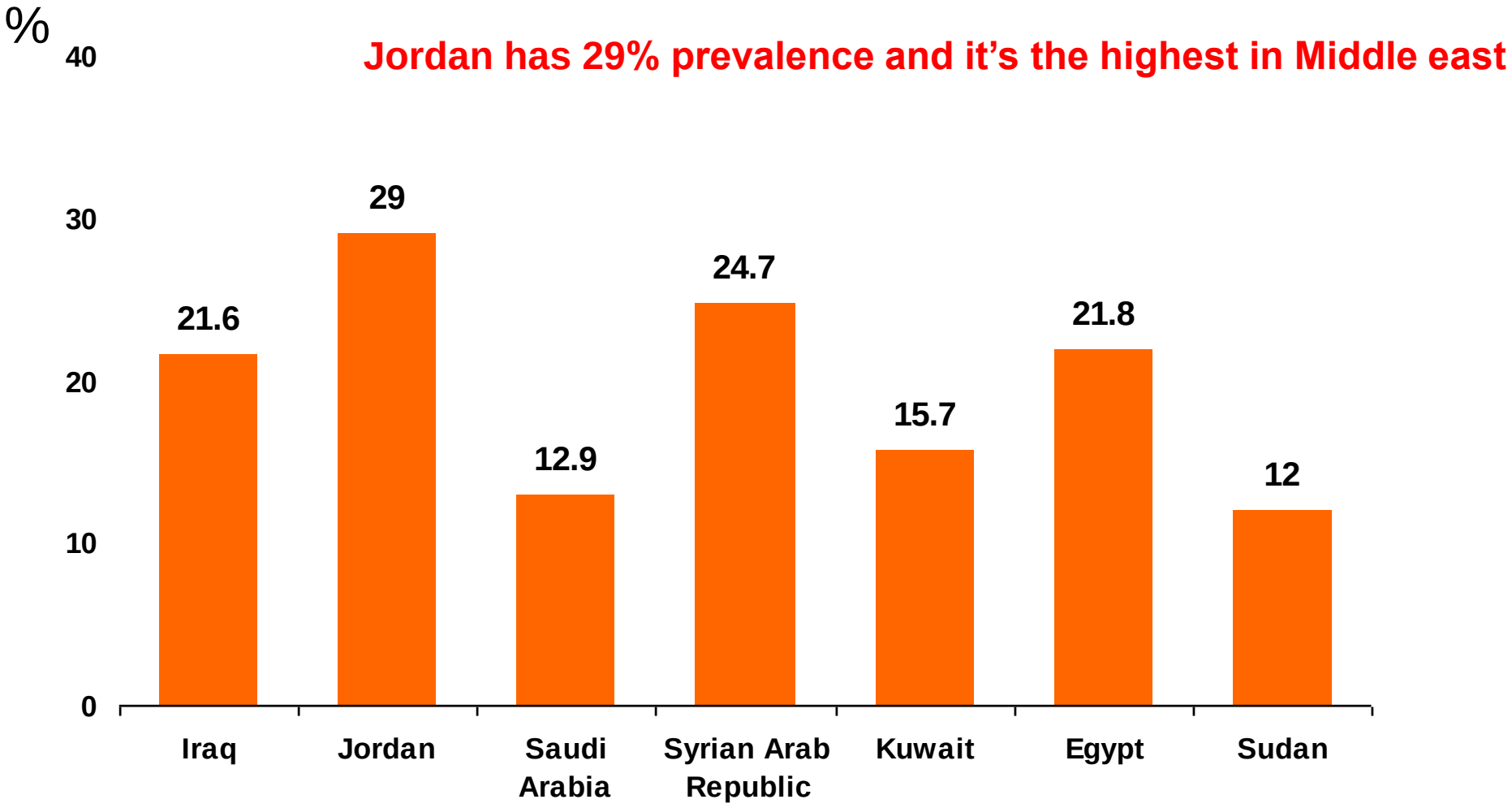
EMR/NCD RISK FACTORS

• Smoking	16-65%
• Hypertension	12-35%
• Diabetes	7-25%
• Over weight-obesity	40-70%
• Dyslipidemia	30-70%
• Physical Inactivity	80-90%

Don't' memorize the percentages .. Just know the arranging

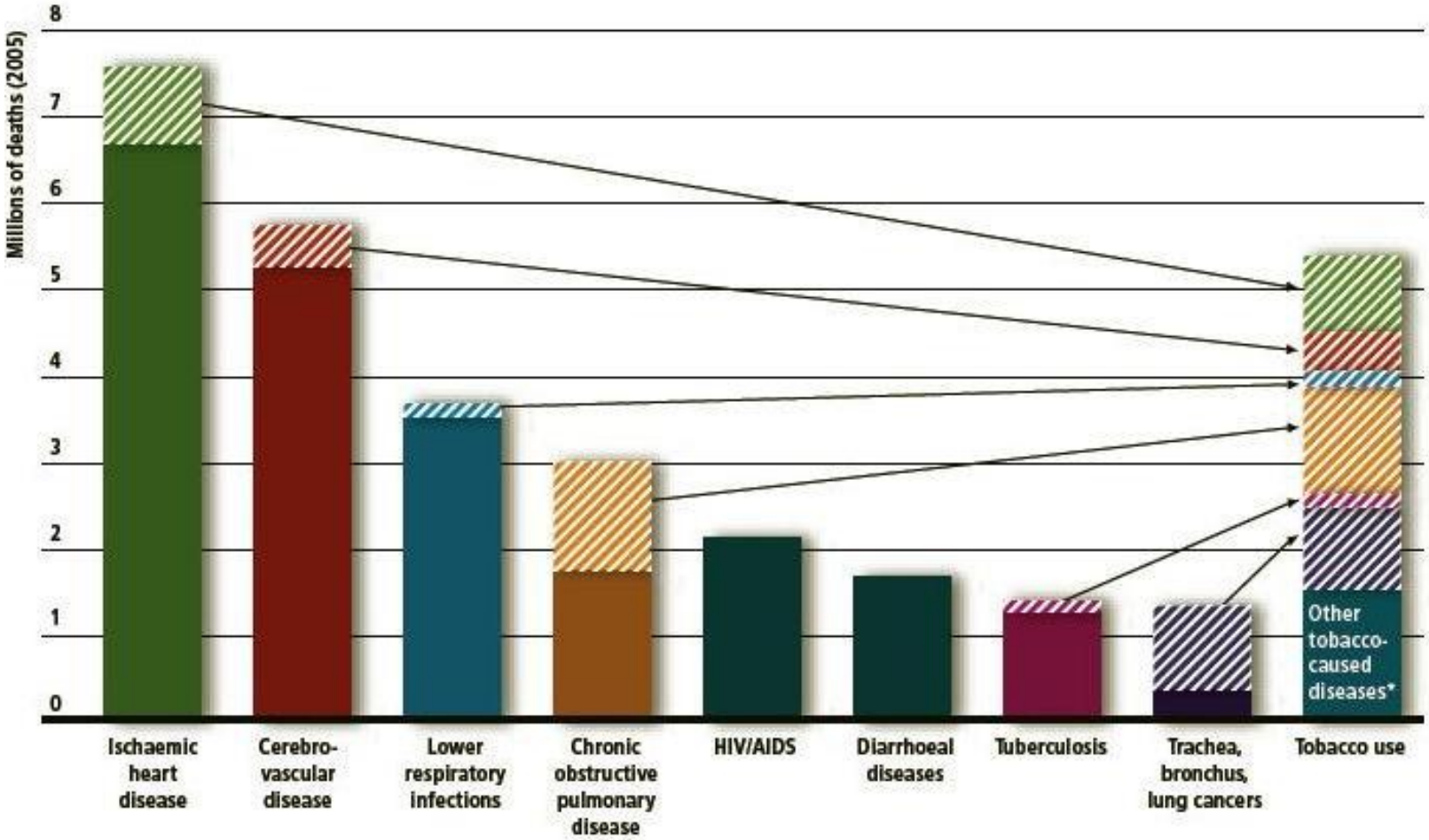
Dyslipidemia : abnormal amount of lipids mainly cholesterol in the blood.

Prevalence of Smoking according to STEPwise Survey in EM countries



Noncommunicable Diseases

Tobacco is a risk factor for 6 of the 8 leading causes of death

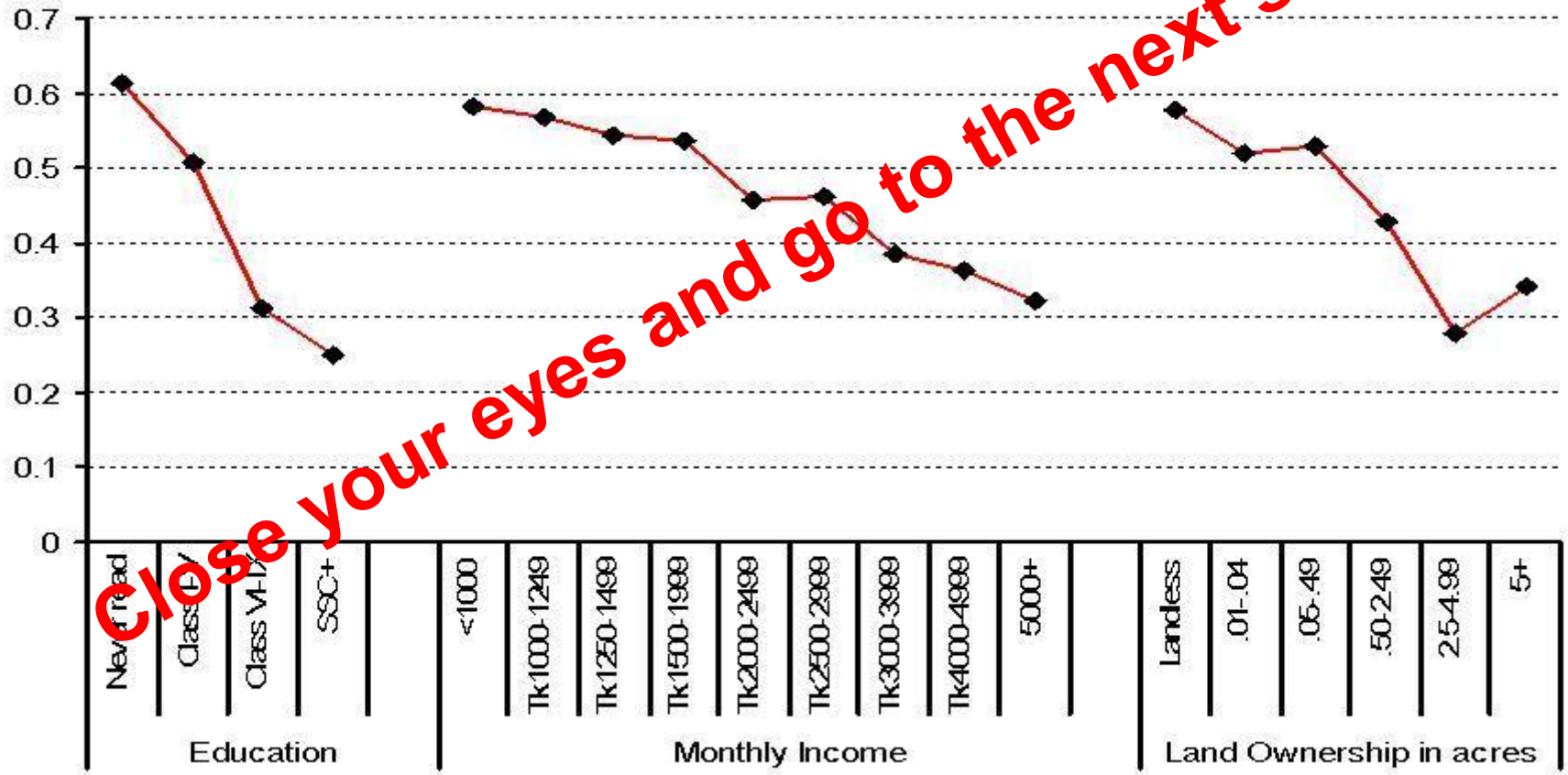


(World Health Statistics, 2008)

HIV and diarrhoeal diseases has nothing to do with Tobacco use

Tobacco: The poor and uneducated are the ones who smoke the most

Smoking prevalence in Bangladesh (1995)



Close your eyes and go to the next slide ☺

Very Very important

- The prevalence of cardiovascular disease in Jordan is mostly due to:
- 1-Smoking
- 2- Diet
- 3- Pollution
- according to Bassam Hijjawi, director of the ministry's disease control department.

- He also tied the prevalence of the chronic disease to a lack of exercise, noting that **over <u>60</u> percent of Jordanians suffering from heart conditions do not participate in physical exercises.**

- In Jordan, the average life expectancy in 2016 was **73.5 years**, and chronic diseases are becoming **increasingly** prevalent. Because personal behavior can influence the occurrence and progression of many chronic diseases.

Read the next three slides carefully

- the Jordan Ministry of Health (JMOH) established surveillance for behavioral risk factors, particularly those related to cardiovascular diseases and diabetes.
- This report summarizes the key findings of the 2002 Behavioral Risk Factor Survey, the first reporting segment in Jordan's surveillance program for chronic diseases.

- The findings indicate that:
- A- **Smoking**
- **B- Physical inactivity**
- **C- Obesity**

contribute substantially to the burden of chronic disease in Jordan and underscores the need for effective public health interventions.

- **Reported by:** *F **Shehab**, MD, Field Epidemiology Training Program; A Belbeisi, MD, Jordan Ministry of Health. H Walke, MD, Div of International Health, Epidemiology Program Office, CDC.*

There's no such thing as a sudden heart attack.

It requires years of preparation.

Read it all بعينك الله

Priorities for preventing cardiovascular disease

1. Act on childhood obesity.
2. Reduce saturated fats, trans fats, salt, and refined sugars in processed foods.
3. Provide incentives for production, distribution, and marketing of vegetables, fruit, and unprocessed food.
4. Develop policies to encourage walking, cycling, and other physical activities.

WHO, World Health Organization.

Read it all بعينك الله

5. Improve environmental (including indoor air pollution), occupational, and other contextual risk factors for NCD.
6. Accelerate implementation of the Framework Convention on Tobacco Control.
7. Provide effective population-wide early detection of those at risk, screening, and programs to raise awareness.
8. Take action to reduce the harmful use of alcohol.

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Read it all بعينك الله

What is diabetes?

- Diabetes mellitus is a group of diseases characterized by high levels of blood glucose resulting from defects in insulin production, insulin action, or both. Diabetes can be associated with serious complications and premature death, but people with diabetes can take steps to control the disease and lower the risk of complications.

Types of diabetes

- **Type 1 diabetes** was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes**.(5-10%).**
- **Type 2 diabetes** was previously called non-insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes. Type 2 diabetes may account for about **90 percent to 95 percent of all diagnosed cases.**

The doctor said that we have talked about gestational diabetes a lot, so read this slide بعينك الله

- **Gestational diabetes:** After pregnancy, 5 percent to 10 percent of women with gestational diabetes are found to have type 2 diabetes. Women who have had gestational diabetes have a 20 percent to 50 percent chance of developing diabetes in the next 5-10 years.

Don’t memorize numbers, but know that the prevalence of diabetes is doubling in number

Prevelance

- The prevalence of diabetes for all age-groups worldwide was estimated to be 2.8% in 2000 and 4.4% in 2030. The total number of people with diabetes is projected to rise from 171 million in 2000 to 366 million in 2030. The prevalence of diabetes is higher in men than women, but there are more women with diabetes than men.

How is the last sentence possible ? → because there are more women than men

The Global burden of diabetes

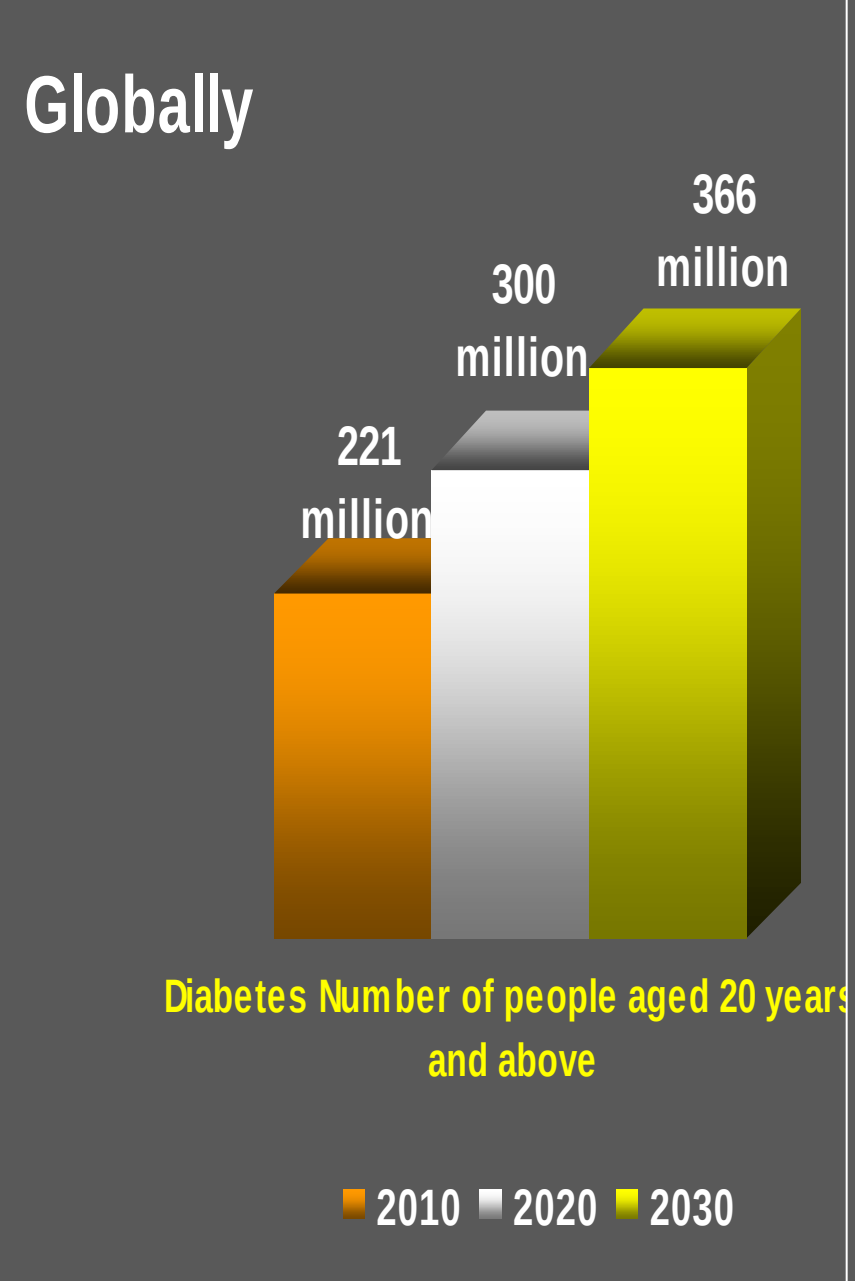
- Diabetes accounts for more than 5% of the global deaths, which are mostly due to CVD.
- **Diabetes is responsible for over one third of end-stage renal disease requiring dialysis.**
- Amputations are at least 10 times more common in people with diabetes.
- A leading cause of blindness and visual impairment. Diabetics are 20 times more likely to develop blindness than nondiabetics.

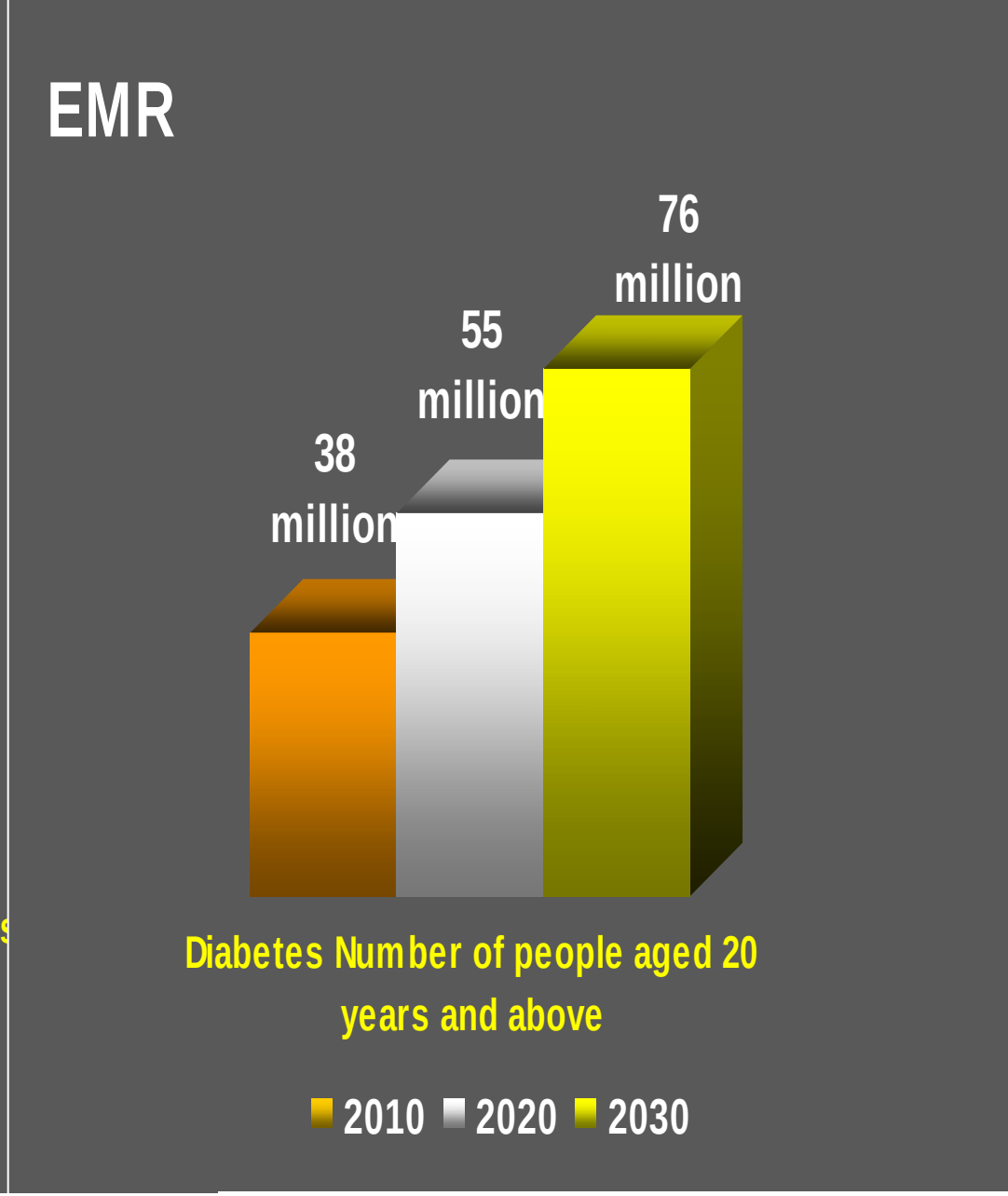
An important slide

Diabetes and Prediabetes

- Type 2 is caused by modifiable risk factors and is the most common worldwide.
- >90% of all adult diabetes cases are Type 2.
- 347 million people worldwide have diabetes.
- More than 80% of diabetes deaths occur in low- and middle-income countries.
- Healthy diet, regular physical activity, maintaining a normal body weight and avoiding tobacco use can prevent or delay the onset of type 2 diabetes.

WHO, World Health Organization.





Just know that EMR are increasing in diabetes percentage (don't memorize the numbers

Diabetes in Arab World

- Diabetes prevalence rates in the Arab World,

although dissimilar in different investigations,

are nevertheless all high.

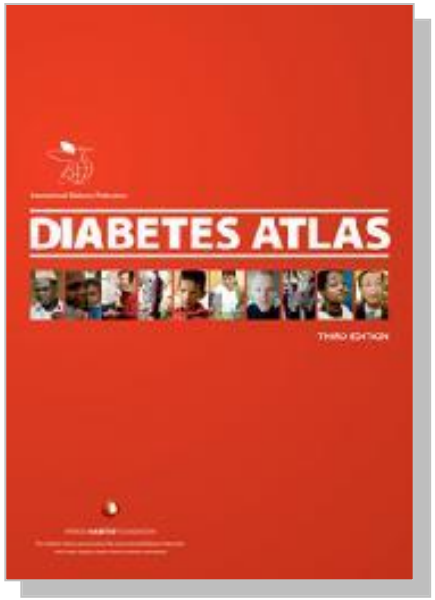
- Urban residency → have more activity and different diet.
- personal incomes and
- economic growth are interrelated, and, in
- connection with affluent food and sedentary
- life-style, are associated with diabetes and obesity rates.

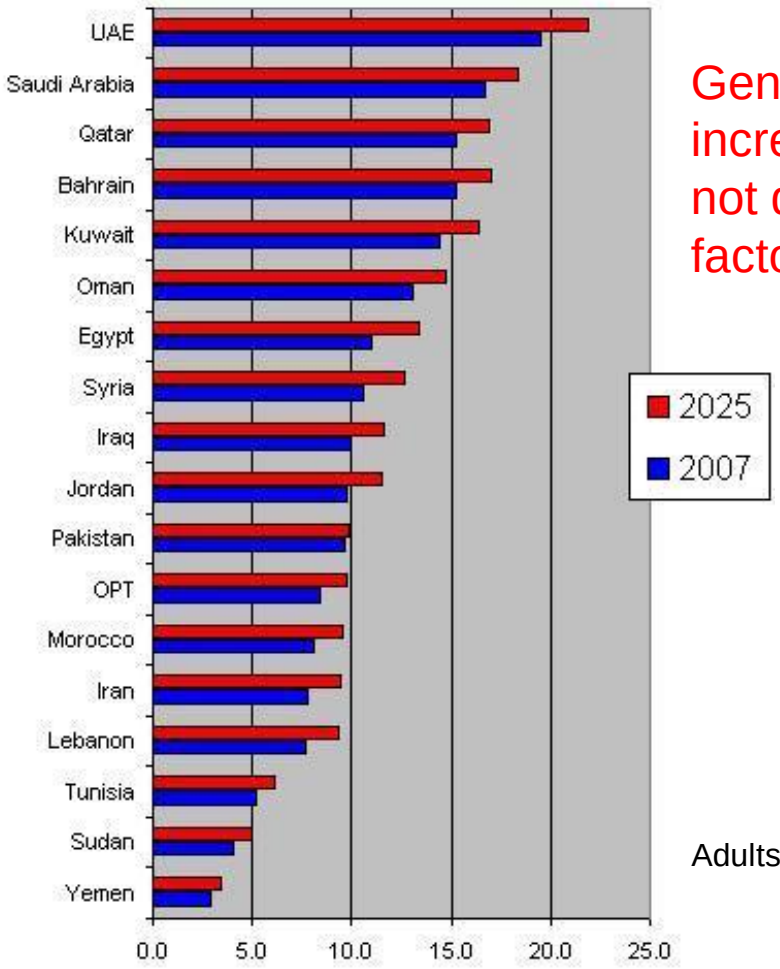
- All Arab countries have experienced various grades of economic growth and urbanisation. However, none of these factors **are** sufficient to explain the increased rates.
- Diabetes 4th cause of death in Jordan and 7th cause of death world wide.

Noncommunicable Diseases

Age-adjusted estimates of diabetes prevalence in the Eastern-Mediterranean Region

(Source: Comparative DM prevalence, table 1.12 and 1.13 of Diabetes Atlas)



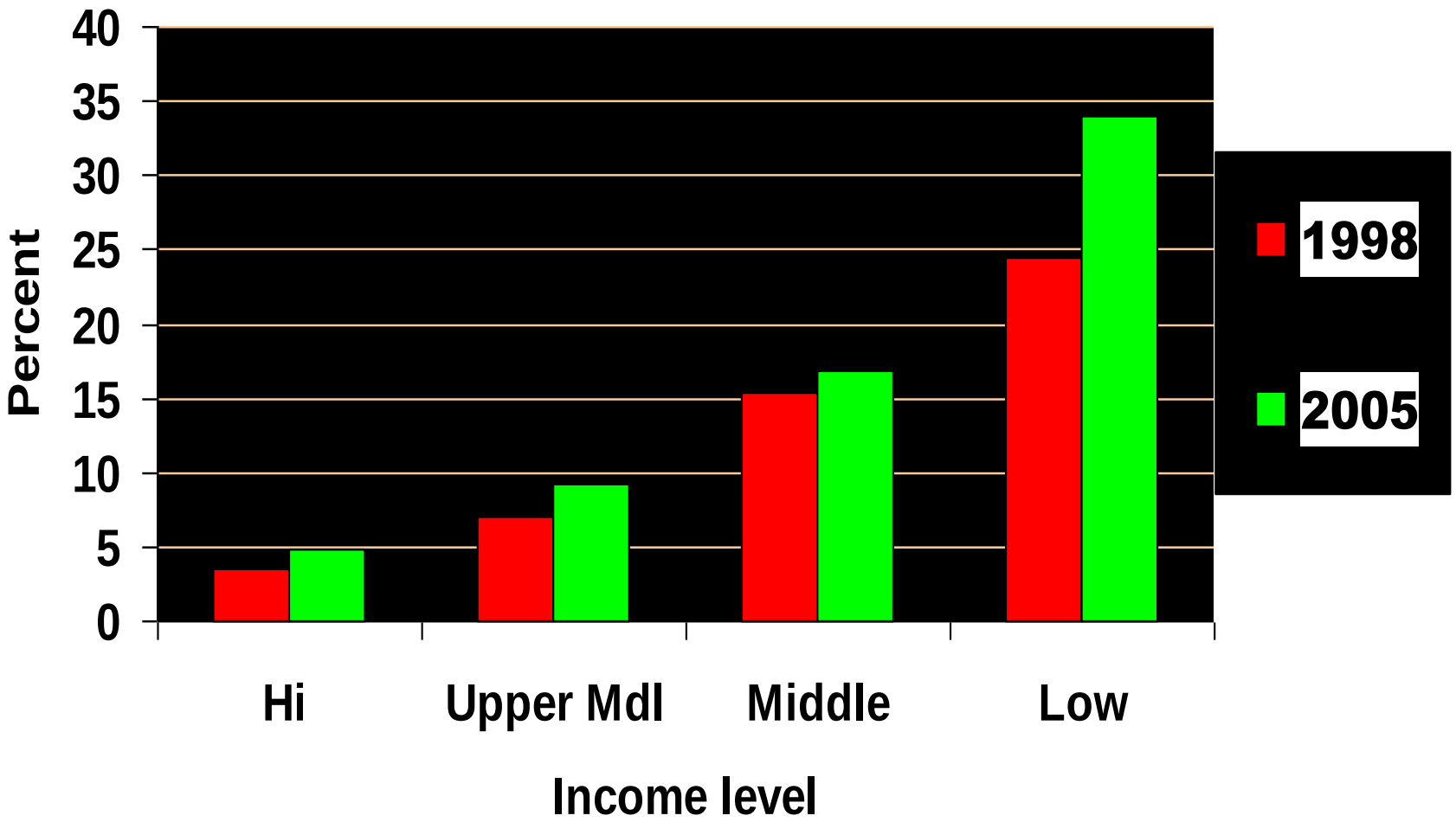


Generally, the problem is increasing because we are not decreasing the risk factors

Adults (20-79)

The impact is much more among low income group

Proportion of family income devoted to diabetes care



Source: Ramachandran A Diabetes Care 2007

Risk Factors

- The risk factors for **type 1 diabetes** are still being researched. However, having a family member with type 1 diabetes slightly increases the risk of developing the disease. Environmental factors and exposure to some viral infections have also been linked to the risk of developing type 1 diabetes

Type 1 diabetes is generally caused by Genetic Factors.

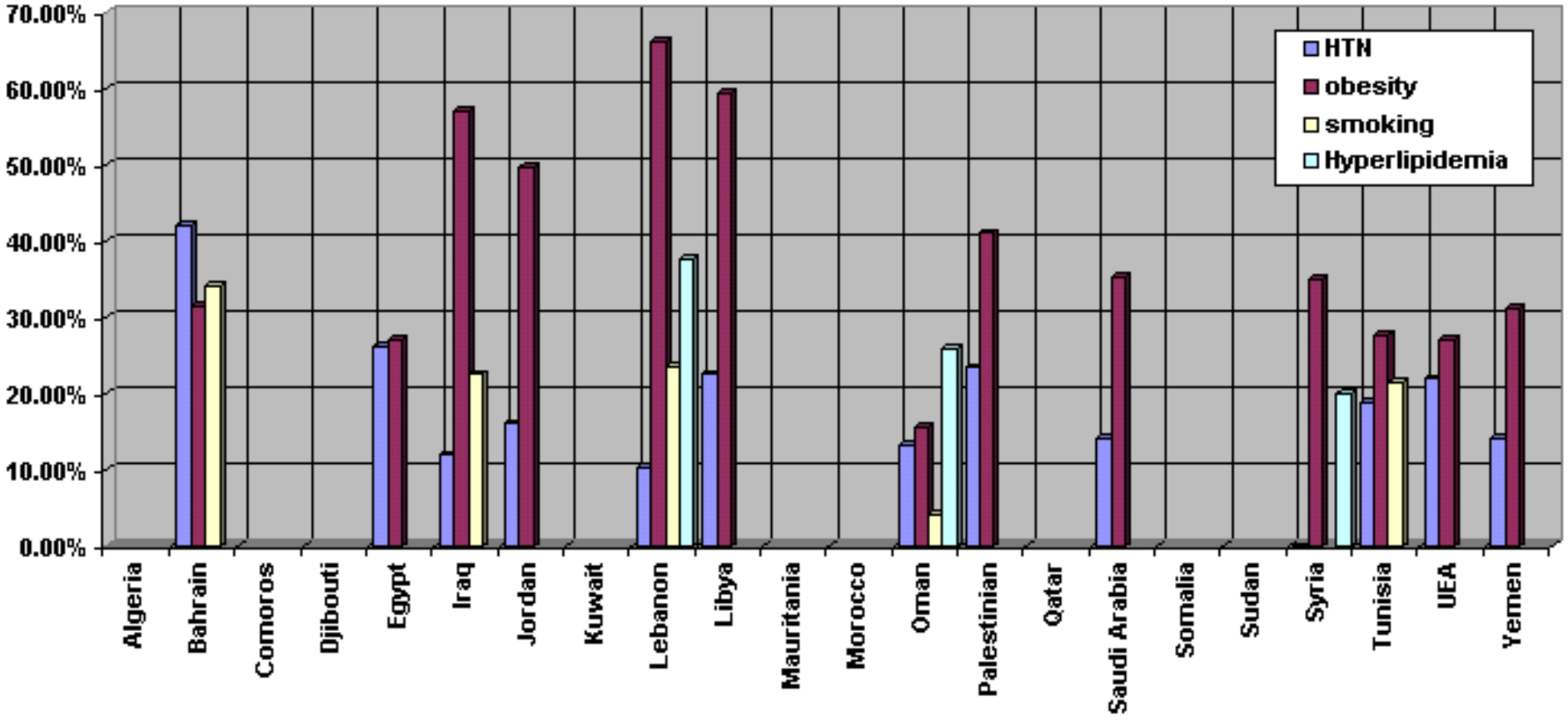
Diabetes type 2: Risk Factors

Major modifiable Risk Factors: - Unhealthy diets - Physical Inactivity (wink wink) - Obesity or Overweight - High Blood Pressure - High Cholesterol	**Other Modifiable Risk Factors:** - Low socioeconomic status - Heavy alcohol use - Psychological stress -High consumption of sugar sweetened beverages - Low consumption of fiber
Non-modifiable Risk Factors: - Increased age - Family history/genetics - Race - Distribution of fat	**Other Risk Factors:** - Low birth weight - Presence of auto antibodies

This slide is very important, you have to differentiate between Major (highly) modifiable RF and other (low) RF

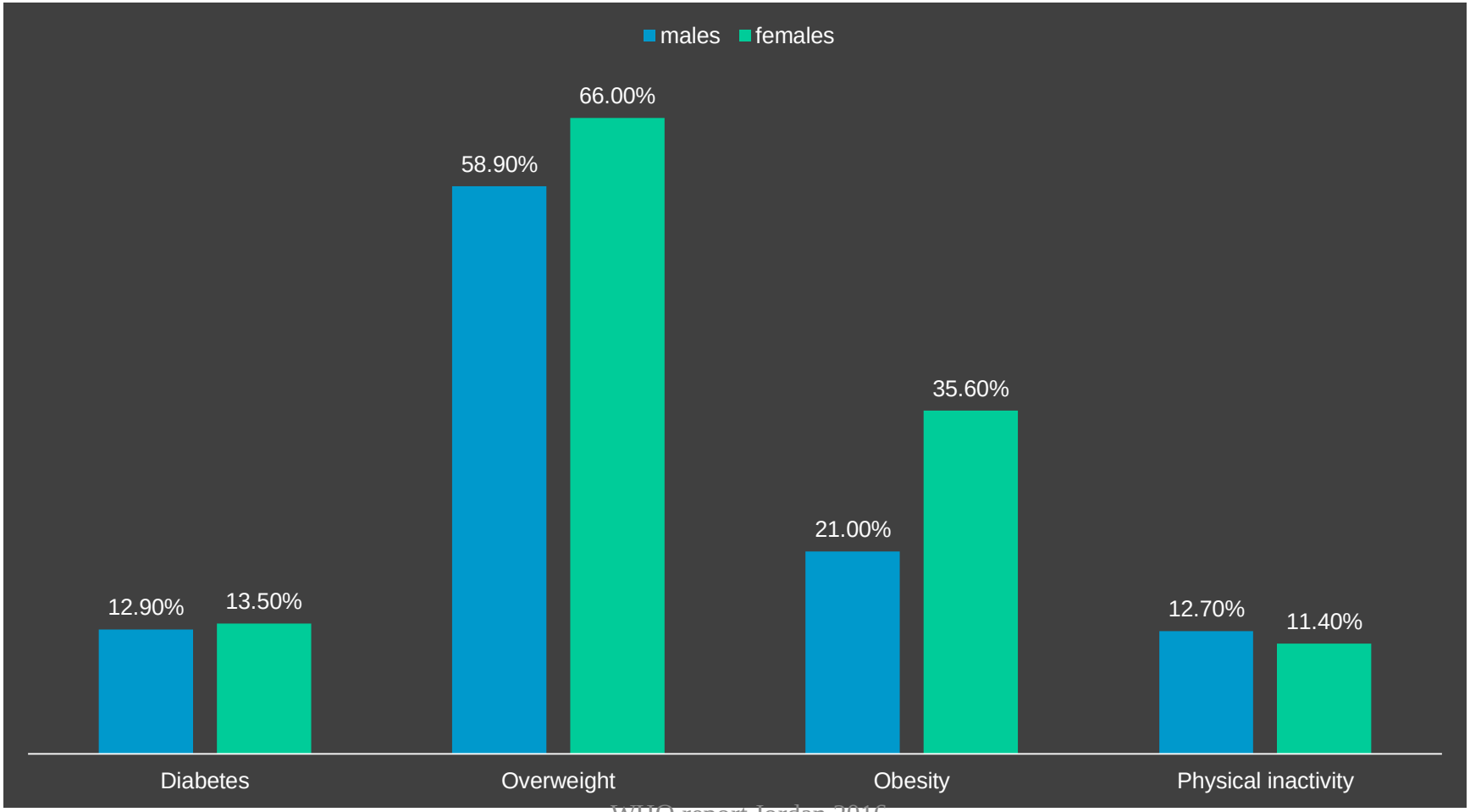
Diabetes Risk Factors

Obesity is the Major Risk Factor



Don’t memorize numbers. Just know that Obesity and Overweight are the major RFs

Prevalence of diabetes and related risk factors(Jordan)



WHO report Jordan 2016

The Top 10 countries in overweight and obesity Prevalence In The World – 2017 Update

- #10 – United States – 31.8%
- #9 – Mexico – 32.8%
- #8 – Qatar – 33.1%
- #7 – South Africa – 33.5%
- #6 – United Arab Emirates – 33.7%
- **#5 – Jordan – 34.3%**

ignore it

- #4 – Egypt – 34.6%
- #3 – Belize – 34.9%
- #2 – Saudi Arabia – 35.2%
- #1 – Kuwait – 42.8%

Not very important

Noncommunicable Diseases

Overweight among school children (13-15 yrs old)*

	% overweight or at risk of overweight**
Djibouti	12.3
Egypt	20.6
Jordan	16.8
Lebanon	18.4
Libya	21.7
United Arab Emirates	33.2

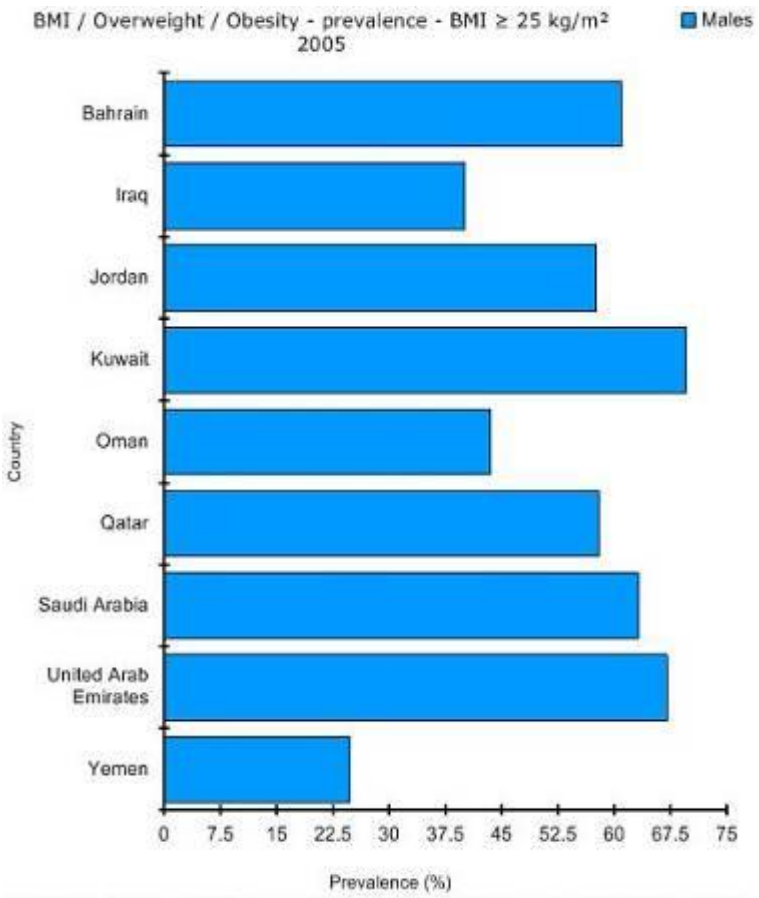
*Results from the Global School-based Student Health Survey (http://www.who.int/chp/gshs/factsheets/en/index.html)

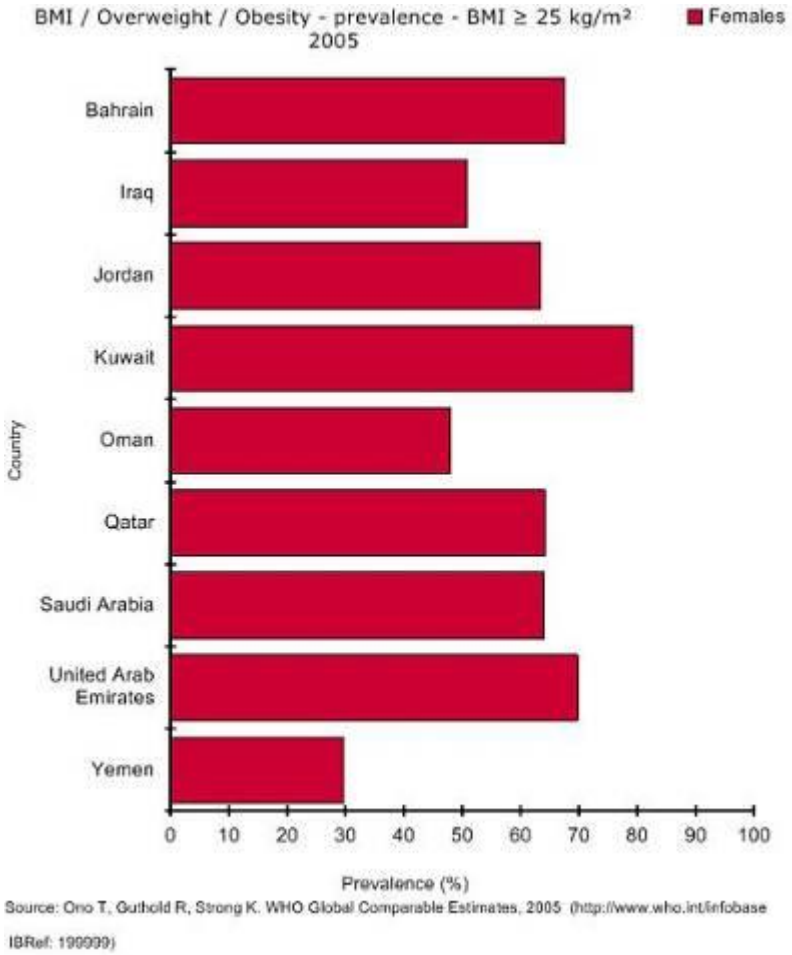
**overweight or at risk of becoming overweight=above the 85th percentile

Not very important

Noncommunicable Diseases

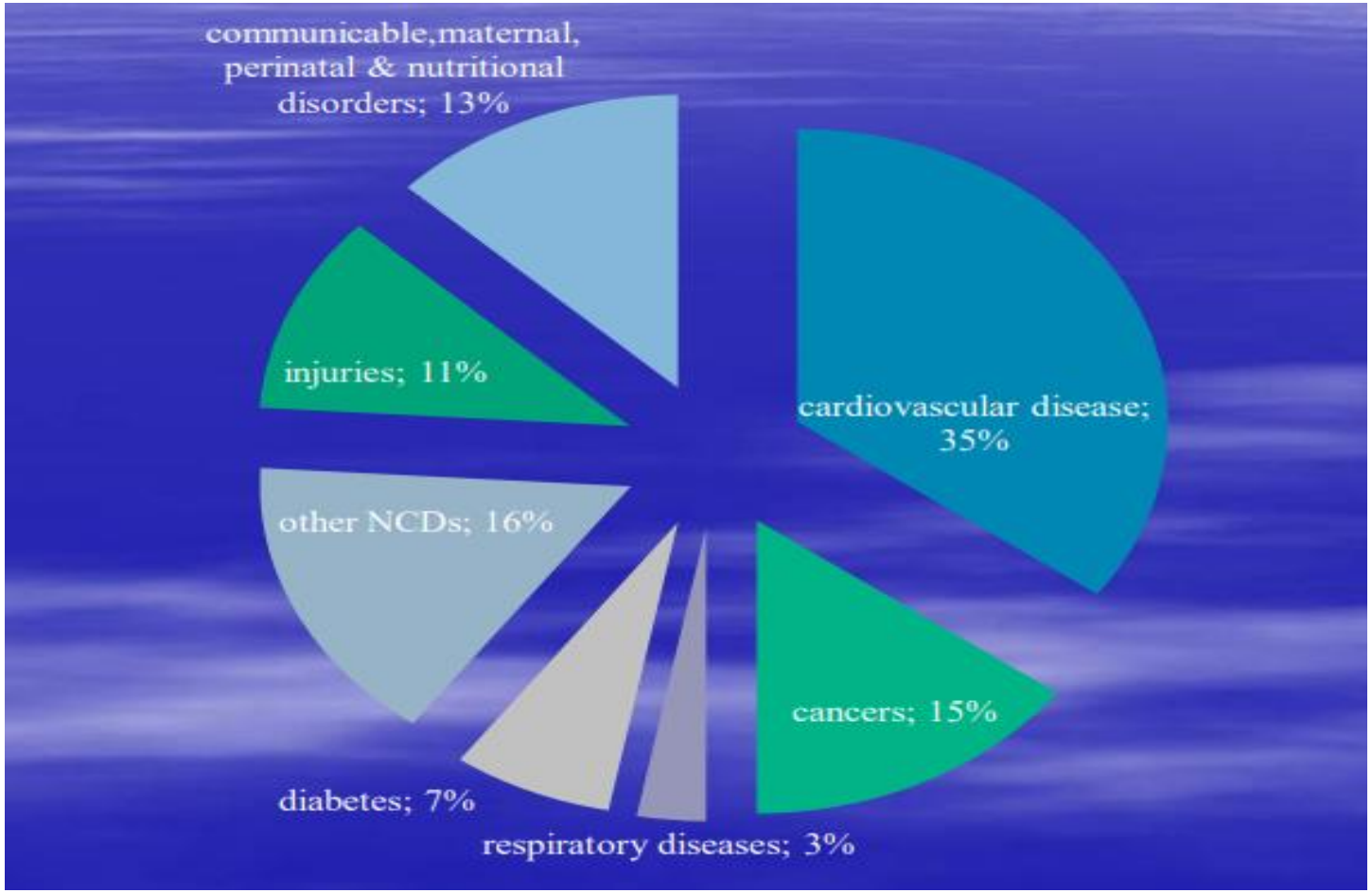
Adult Overweight and Obesity in Arab Countries





THIS IS THE MOST IMPORTANT SLIDE EVER

Proportional mortality (% of total deaths, all ages) in Jordan



احذر أمامك مطب

WHO report Jordan 2016

The doctor didn’t mention all the following slides.. Read them if you have enough time

Read only

Complications of Diabetes

- **Heart disease and stroke**
- Heart disease is the leading cause of diabetes-related deaths. Adults with diabetes have heart disease death rates about two to four times higher than adults without diabetes.
- The risk for stroke is two to four times higher among people with diabetes.
- About 65 percent of deaths among people with diabetes are due to heart disease and stroke.

Read only

- **High blood pressure**
- About 73 percent of adults with diabetes have blood pressure greater than or equal to 130/80 mm Hg or use prescription medications for hypertension.
- **Blindness**
- Diabetes is the leading cause of new cases of blindness among adults aged 20-74 years.
- Diabetic retinopathy causes 12,000 to 24,000 new cases of blindness each year.

Read only

Kidney disease

- Diabetes is the leading cause of end-stage renal disease, accounting for 44 percent of new cases.
- In 2001, 42,813 people with diabetes began treatment for end-stage renal disease.
- In 2001, a total of 142,963 people with end-stage renal disease due to diabetes were living on chronic dialysis or with a kidney transplant.

Read only

Nervous system disease

- About 60 percent to 70 percent of people with diabetes have mild to severe forms of nervous system damage. The results of such damage include impaired sensation or pain in the feet or hands, slowed digestion of food in the stomach, carpal tunnel syndrome, and other nerve problems.

Read only

Amputations

- More than 60 percent of nontraumatic lower-limb amputations occur among people with diabetes.

Read only

- **Dental disease**
- Periodontal (gum) disease is more common among people with diabetes. Among young adults, those with diabetes have about twice the risk of those without diabetes.
- Almost one-third of people with diabetes have severe periodontal diseases with loss of attachment of the gums to the teeth measuring 5 millimeters or more.

Read only

Complications of pregnancy

- Poorly controlled diabetes before conception and during the first trimester of pregnancy can cause major birth defects in 5 percent to 10 percent of pregnancies and spontaneous abortions in 15 percent to 20 percent of pregnancies.
- Poorly controlled diabetes during the second and third trimesters of pregnancy can result in excessively large babies, posing a risk to the mother and the child.

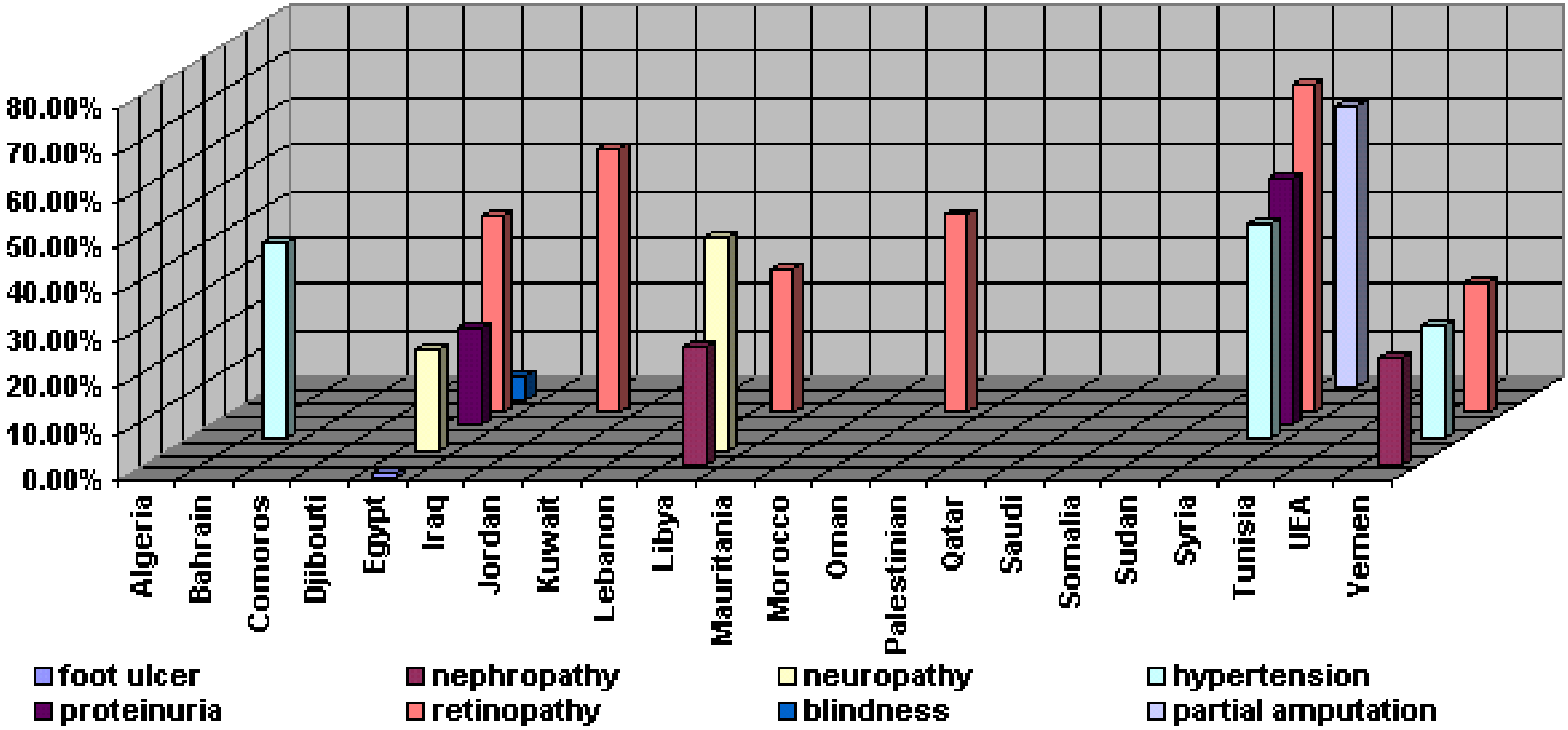
Read only

Other complications

- Uncontrolled diabetes often leads to biochemical imbalances that can cause acute life-threatening events, such as diabetic ketoacidosis and hyperosmolar (nonketotic) coma.
- People with diabetes are more susceptible to many other illnesses and, once they acquire these illnesses, often have worse prognoses. For example, they are more likely to die with pneumonia or influenza than people who do not have diabetes.

Read only

Diabetes Complications



Read only

Prevention

- Whatever your risk factors for diabetes may be, there's a lot you can do to delay or prevent diabetes. To manage your risk of diabetes, you should:
- **manage your blood pressure**
- **keep your weight within or near normal ranges**
- **get moderate exercise on most days**
- **eat a balanced diet**

Read only

Prevention

- Lifestyle interventions included diet and moderate-intensity physical activity (such as walking for 2 1/2 hours each week). In the Diabetes Prevention Program, a large prevention study of people at high risk for diabetes, the development of diabetes was reduced 58 percent over 3 years.

Read only

Key facts

- Noncommunicable diseases (NCDs) kill 41 million people each year, equivalent to 71% of all deaths globally.
- Each year, 15 million people die from a NCD between the ages of 30 and 69 years; over 85% of these "premature" deaths occur in low- and middle-income countries.
- Cardiovascular diseases account for most NCD deaths, or 17.9 million people annually, followed by cancers (9.0 million), respiratory diseases (3.9million), and diabetes (1.6 million).

WHO, World Health Organization.

Read only

- These 4 groups of diseases account for over 80% of all premature NCD deaths.
- Tobacco use, physical inactivity, the harmful use of alcohol and unhealthy diets all increase the risk of dying from a NCD.
- Detection, screening and treatment of NCDs, as well as palliative care, are key components of the response to NCDs.

Read only

In Conclusion: Barrier to Development

- **CVDs and other NCDs Will Further Widen the Health Gap between Rich and Poor Countries**
- **They Are Killing and Disabling People at Their Peak Productivity**
- **They Will Slow Economic Growth Rates in Poor Countries**

Read only

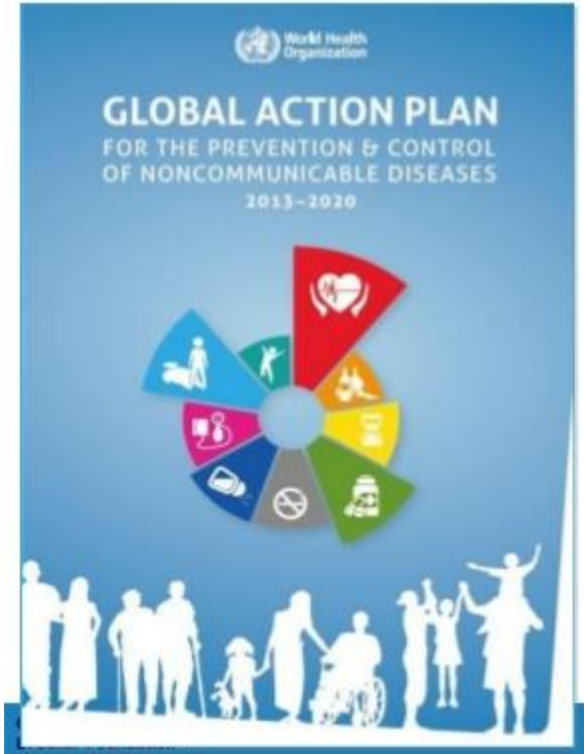
Global Action Plan for the Prevention and Control of NCDs 2013-2020

- the 66th World Health Assembly endorsed the WHO Global Action Plan for the Prevention and Control of NCDs 2013-2020 (resolution WHA66.10).
- To strengthen national efforts to address the burden of NCDs.
- The global action plan offers a paradigm shift by providing a road map and a menu of policy options for Member States.
- will attain 9 voluntary global targets, including that of a 25% relative reduction in premature mortality from NCDs by 2025.

Read only

Global Action Plan for the Prevention and Control of NCDs 2013-2020

The WHO Global NCD Action Plan 2013-2020
unites governments, international partners and WHO around a common agenda



Vision:
A world free of the avoidable burden of NCDs

Goal:
To reduce the preventable and avoidable burden of morbidity, mortality and disability due to NCDs by means of multisectoral collaboration and cooperation at national, regional and global levels

Geneva, 1 –2 July 2013

World Health Organization

Read only

Six Objectives For The Action Plan

The WHO Global NCD Action Plan 2013-2020 has six objectives
with recommended actions for Member States, international partners and WHO

fact

Objective 1
To strengthen international cooperation and advocacy to raise the priority accorded to prevention and control of NCDs in the development agenda and in internationally-agreed development goals

Objective 2
To strengthen national capacity, leadership, governance, multisectoral action and partnerships to accelerate country response for the prevention and control of NCDs

Objective 3
To reduce exposure to modifiable risk factors for NCDs through creation of health-promoting environments

Objective 4
To strengthen and orient health systems to address the prevention and control of NCDs through people-centred primary health care and universal health coverage

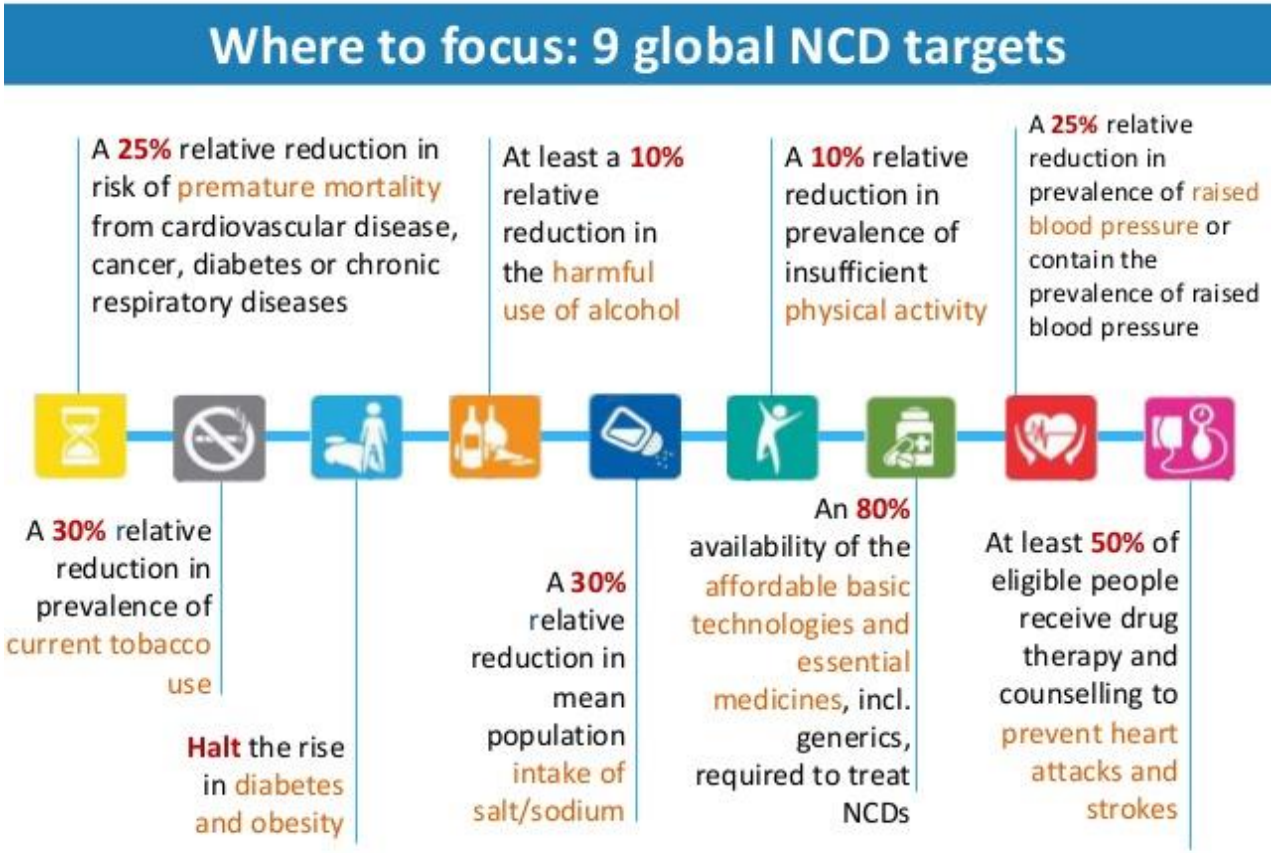
Objective 5
To promote and support national capacity for high-quality research and development for the prevention and control of NCDs

Objective 6
To monitor the trends and determinants of NCDs and evaluate progress in their prevention and control

World Health Organization

Read only

9 Global NCD Targets



Read only

Chalanges

- For the growing populations and rapidly changing life-styles have outstripped health care systems, and available infrastructure is simply unable to cope.
- All relevant government departments (not simply health but finance, agriculture, trade, environment, education, etc.) And civil society should counter force NCDS.
- The emphasis should be on public health and preventive measures(raising the prices of alcohol and tobacco, banning smoking in public places, taxing sugar-sweetened beverages, and designing transport systems that encourage physical activity).

Read only

Chalanges

- Citizens and patients should be “in charge” by taking responsibility for their care rather than depending passively on clinicians.
- health care should be provided within primary care.
- There should be extensive use of standardized protocols and guidelines.

Read only

REFERENCES AND RESOURCES

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THANK YOU