

OVERVIEW OF NON-COMMUNICABLE DISEASE

Dr. Hafsa Raheel & Dr. Ali Alhazmi
KSU Dept of Family & Community Medicine

435 Lecture Notes by Qusay Ajlan & Haifaa Almohsen
Original Content | **Titles** | Additional Notes | **Important**

Learning objectives

- By the end of the session the students should be able to define and understand :
 - The epidemiology of non-communicable diseases
 - Risk factors for non-communicable diseases
 - Overall framework and common preventive strategies against non-communicable diseases

Did you know ?

1-35,000,000 people died from chronic diseases in 2005

36 000 000 lives can be saved

2-**misunderstanding** : chronic diseases only affect old people
Reality: almost half people affected with chronic diseases are under age 70 years

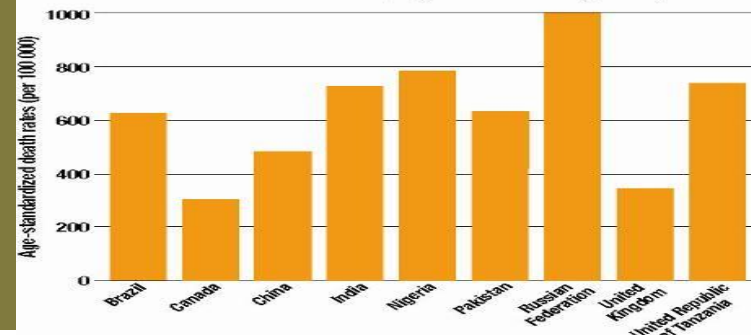
3-**misunderstanding** : chronic diseases only affect rich people
Reality: chronic diseases are concentrated among the poor

MISUNDERSTANDING
CHRONIC DISEASES MAINLY AFFECT OLD PEOPLE



MISUNDERSTANDING
CHRONIC DISEASES MAINLY AFFECT RICH PEOPLE

Projected chronic disease death rates for selected countries, aged 30–69 years, 2005



Cont.

4-**misunderstanding**: chronic diseases prevention and control is too expensive

Reality: inexpensive and cost-effective interventions exist

5-**misunderstanding**: chronic diseases primarily affect men

Reality: chronic diseases affect men and women almost equally

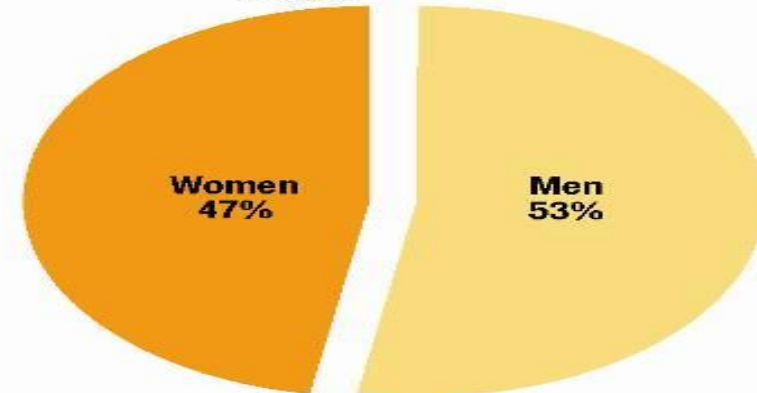
6-**misunderstanding**: chronic diseases can't be prevented

Reality: 80% of premature heart disease, stroke and type 2 diabetes is preventable, 40% of cancer is preventable

MISUNDERSTANDING

CHRONIC DISEASE
PREVENTION AND CONTROL
IS TOO EXPENSIVE

**Projected global
coronary heart
disease deaths
by sex, all ages,
2005**



MISUNDERSTANDING

CHRONIC
DISEASES AFFECT
PRIMARILY MEN

MISUNDERSTANDING

CHRONIC DISEASES
CAN'T BE PREVENTED

Non-communicable diseases

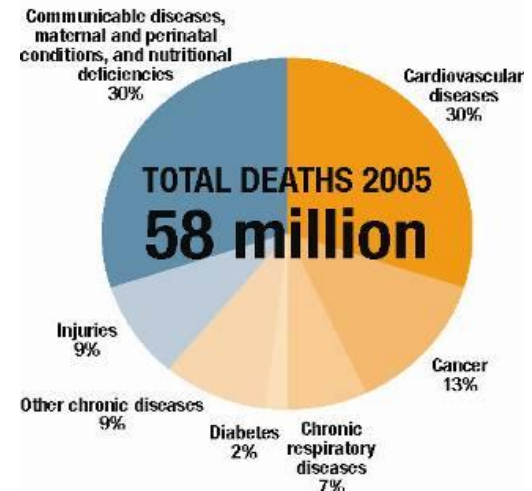
definition:

- Non-communicable diseases are all impairments or deviations from the normal, which have one or more of the following characteristics;
 - Are permanent
 - Leave residual disability
 - Caused by non-reversible pathological alterations
 - Require special training of the patient for rehabilitation
 - May be expected to require a long term supervision

Main NCDs

- Cardiovascular disease, mainly heart disease, stroke
- Cancer
- Chronic respiratory diseases
- Diabetes

Projected main causes of death, worldwide, all ages, 2005

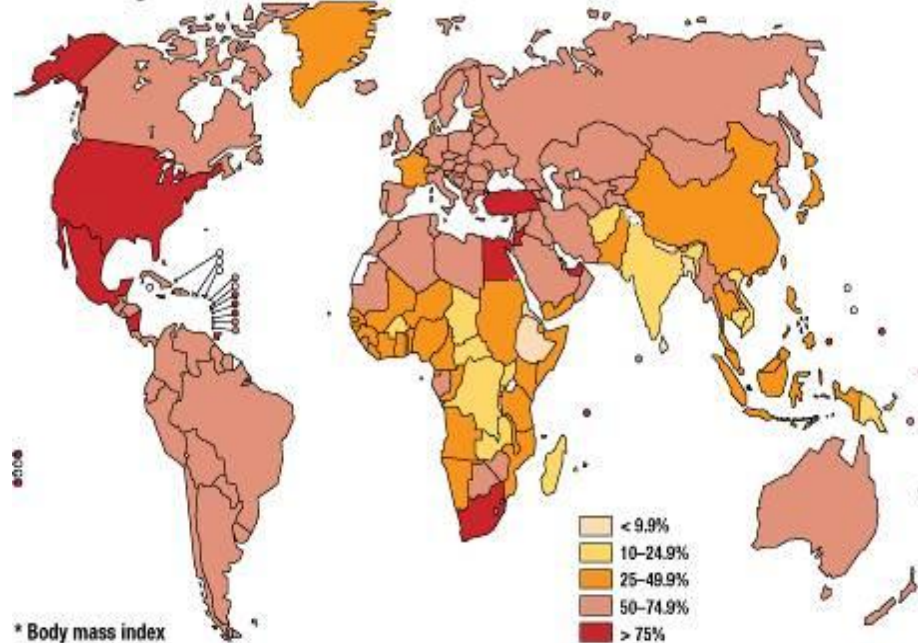


60% of all deaths are due to chronic diseases

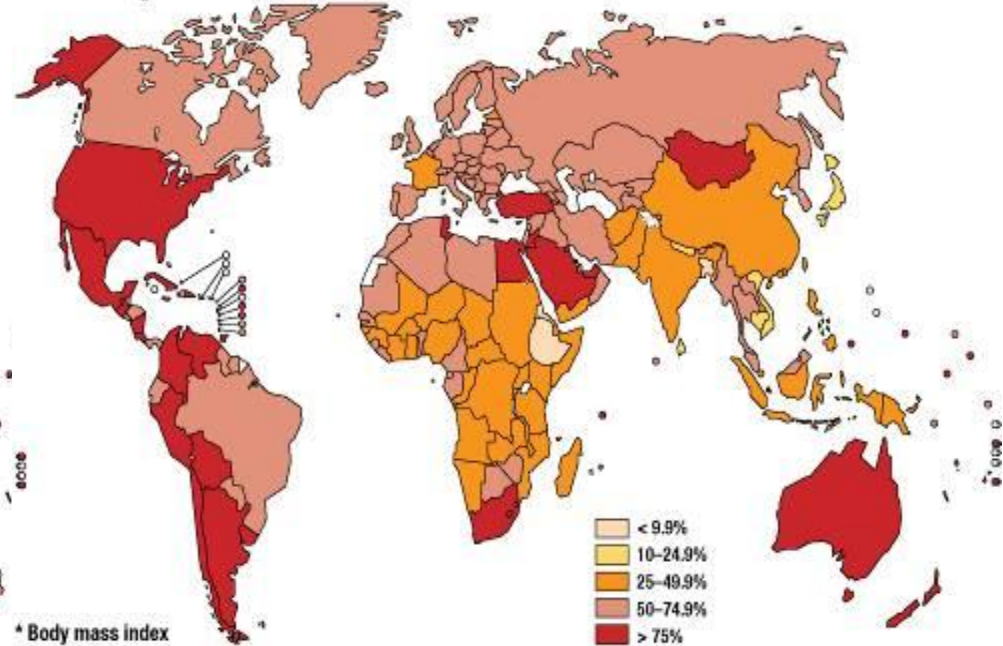
Risks are increasing

its harder to control NCD Because there are more risks in comparison to CD

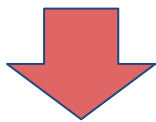
Projected prevalence of overweight (BMI* ≥ 25 kg/m²), women aged 30 and above, 2005



Projected prevalence of overweight (BMI* ≥ 25 kg/m²), women aged 30 and above, 2015

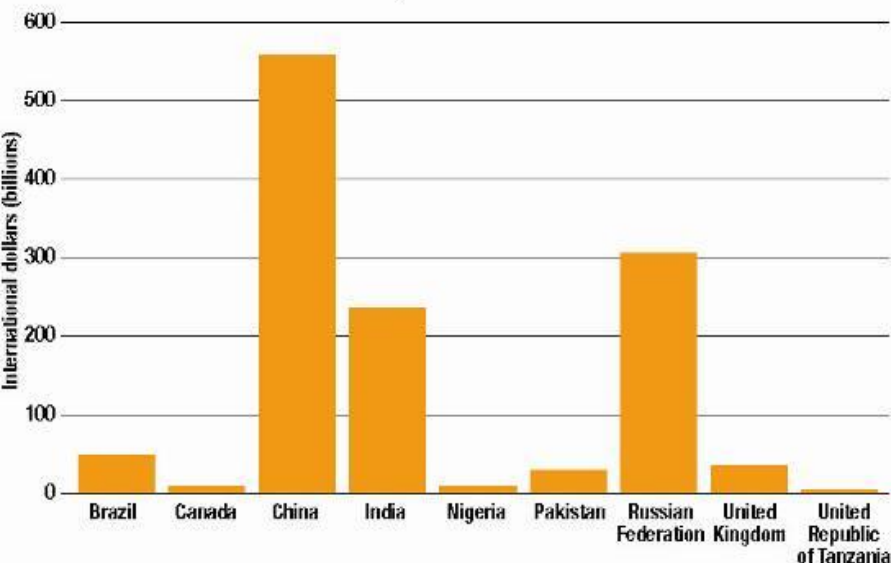


The economic impact: billions

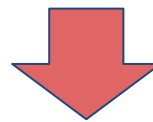


Projected foregone national income

due to heart disease, stroke and diabetes
in selected countries, 2005–2015

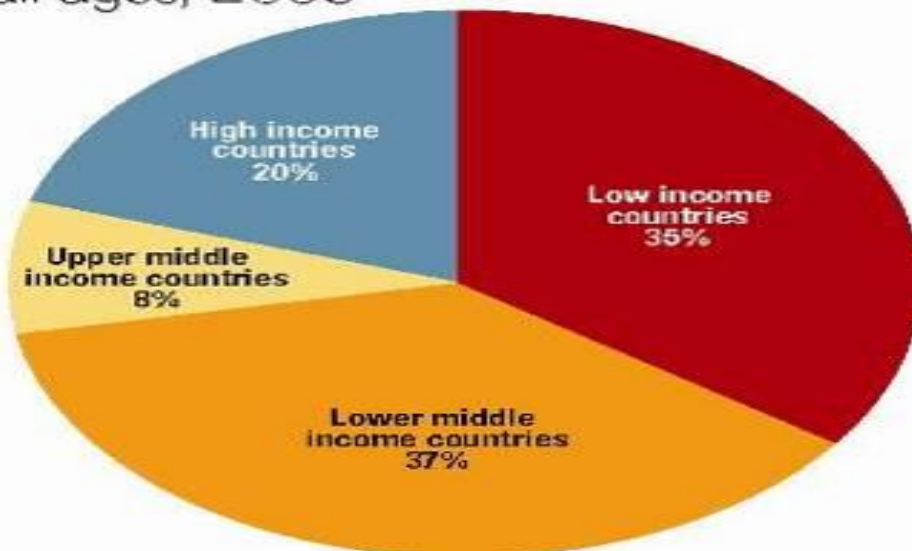


80% of chronic disease deaths occur in low & middle income countries



Projected global distribution of chronic disease deaths

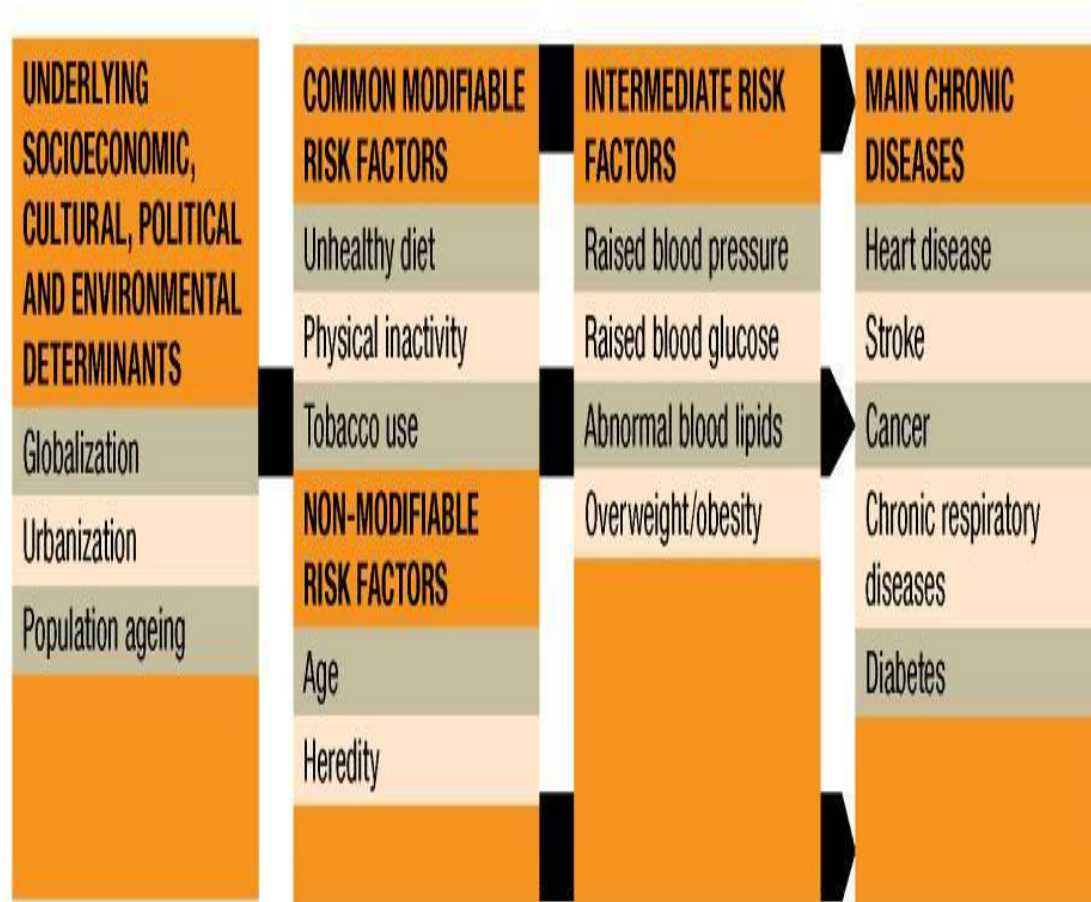
by World Bank income group,
all ages, 2005



Examples

- **Coronary Heart Diseases**
- Hypertensive Heart Diseases
- Cancer
- Stroke
- **Diabetes**
- Chronic Obstructive diseases
- Peptic Ulcer
- Blindness
- Mental Retardation
- Schizophrenia
- Arthritis

Causes of NCD



Risk factors

- Modifiable
 - Cigarette smoking
 - High Blood pressure
 - Elevated serum Cholesterol
 - Diabetes
 - Life style changes (dietary patterns, physical activity)
 - Stress factors
 - Alcohol abuse
- Non-Modifiable
 - Age
 - Sex
 - Family Hx
 - Genetic factors
 - **Personality?** Dr Argued about this point but still its considered hard to change personality
 - Race

The objectives of Integrated Chronic Disease Prevention and Control Programme are:

- To strengthen prevention and control of chronic non-communicable diseases by tackling the major risk factors, focusing on WHO's **four** priority non-communicable diseases - **cardiovascular diseases, cancer, diabetes, and chronic respiratory diseases, and underlying determinants of health**
- To reduce premature mortality and morbidity, and

To improve quality of life, with **particular focus on developing countries**

Prevention

- **Primary prevention**
 - 1-Population Strategy
 - 2-High Risk strategy
- **Secondary prevention**
 - 3- Tertiary prevention

Primary prevention

1-Population strategy

- Dietary Changes
- Blood pressure control
- **Physical activity** (weight reduction) - specially children
- Behavioral change – reduction of stress and Smoking cessation
- Self care
- Health education

2-High Risk approach

- **Identify Risk:** Identify high risk people and families eg. those who smoke, and have high serum cholesterol.
- **Specific Advice:** helping them to stop smoking and exercise and diet control etc.

Secondary Prevention

1-Continuation of primary care

2-Early case detection and treatment eg. CHD

- Cessation of smoking
- Reduction of serum cholesterol level
- Compliance
- screening

Application of the frame work

What works?

Comprehensive and integrated action is the means to prevent and control chronic diseases

Step1: estimate population need and advocate for action

Step2: formulate and adopt policy

Step3: identify policy implementation steps



Chronic Heart Disease (CHD)

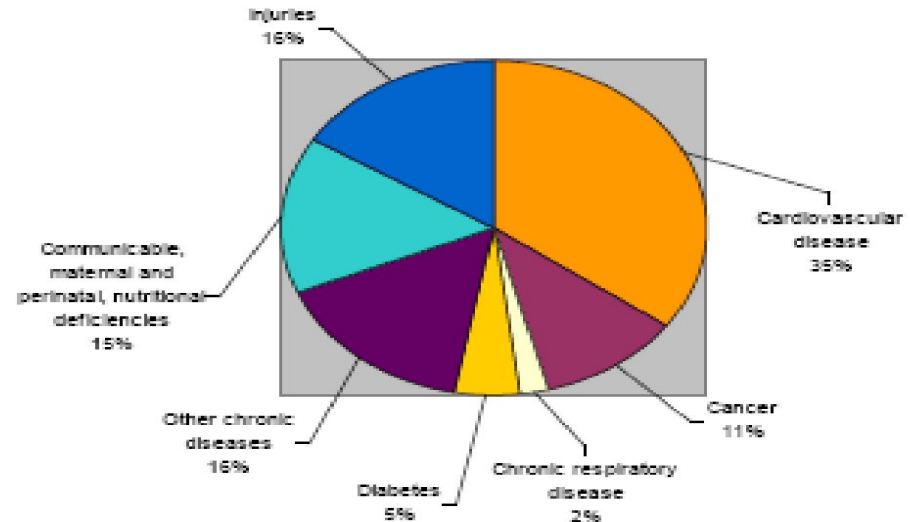
Definition: Impairment of heart function due to inadequate blood flow to the heart compared to its needs, caused by obstructive changes in the coronary circulation to the heart.

- Angina on effort
- Myocardial infarction (MI)
- Irregularities of the heart
- Cardiac failure
- Sudden death

Epidemiology of CHD

facts:

In Saudi Arabia chronic diseases accounted for 69% of all deaths in 2002. See chart on the right for total deaths in Saudi Arabia 2002 = 97,000. Total deaths related to chronic diseases = 67,000.



Risk factors

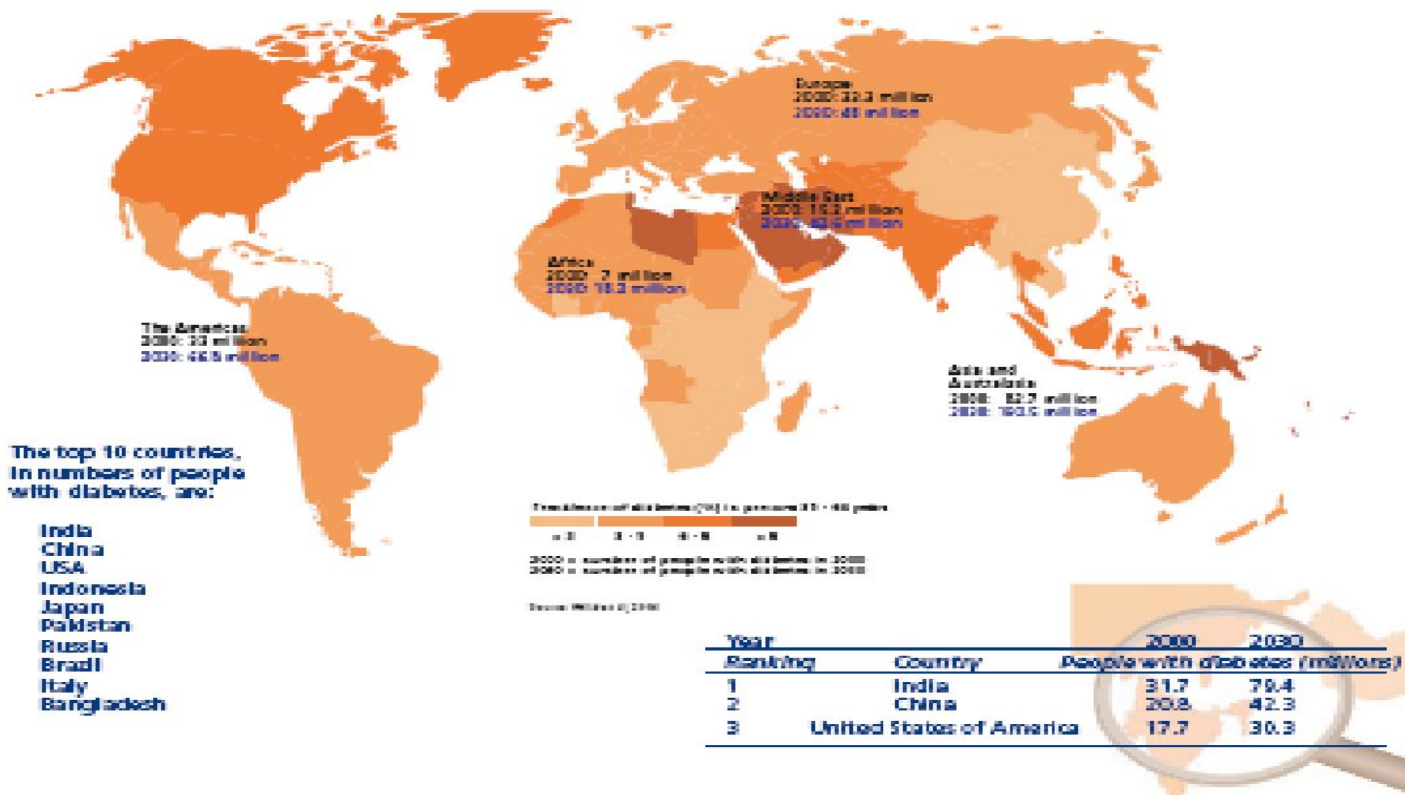
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Prevention

- Smoking
 - HTN
 - Dyslipidemia
 - DM
 - Genetic predisposing?
 - Physical inactivity
 - Hormones?
 - Type A personality
 - Oral contraceptives-higher diastolic and systolic BP
- 1-Population strategy?
 - 2-High risk strategy?
 - 3-Individual strategy?

Diabetes Mellitus

Prevalence of diabetes



Types of DM

Type 1 diabetes :(previously known as insulin-dependent or childhood-onset) is characterized by a lack of insulin production. Without daily administration of insulin, Type 1 diabetes is rapidly fatal

Type 2 diabetes (formerly called non-insulin-dependent or adult-onset) results from the body's ineffective use of insulin

Gestational diabetes is hyperglycemia which is first recognized during pregnancy

Risk factors:

- Familial tendency
- Obesity
- Diabetogenic drug
- Insanitary environment



COMPLICATIONS?

Prevention

- Primary- **screening of high risk group**
 - Ideal body weight and nutrition
 - Exercise
- Secondary
 - Moderate blood glucose control and compliance
 - Foot care
 - Screening for retinopathy (which causes blindness);
 - Blood lipid control (to regulate cholesterol levels);
 - Screening for early signs of diabetes-related kidney disease
- Tertiary

The global goal :

A 2% annual reduction in chronic disease death rates worldwide, per year, over the next 10 years.

The scientific knowledge to achieve this goal already exists.

Q1/which of the following is true regarding NCD ?

A/lifelong

B/leave residual disability

C/Caused by non-reversible pathological alterations

D/all of the above

=D

Q2/which of the following is an example of NCD

A/CHD

B/DM

C/CANCER

D/all of above

=D

Q3/which of the following is considered a secondary prevention for CHD

A/cessation smoking

B/Dietary Changes

C/Blood pressure control

D/Physical activity

=A