- Being overweight or obese
- High blood pressure •
- High blood cholesterol
- High blood sugar (glucose)
- 3. **Demographic:** Demographic risk factors are those that relate to the overall population. Examples include:
 - Age .
 - Gender
 - Population subgroups, such as occupation, religion or income
- 4. Environmental: Environmental risk factors cover a wide range of topics such as social, economic, cultural and political factors as well as physical, chemical and biological factors. Examples include:
 - Access to clean water and sanitation
 - Risks in the workplace
 - Air pollution
 - Social settings
- 5. Genetic risk factors: Genetic risk factors are based on an individual's genes. Some diseases, such as cystic fibrosis and muscular dystrophy, come entirely from an individual's genetic makeup. Many other diseases such as asthma or diabetes, reflect the interaction between the genes of the individual and environmental factors. Other diseases, like sickle cell anemia, are more prevalent in certain population subgroups.
- 6. Modifiable: These include:
 - Smoking ٠
 - High blood pressure
 - Diabetes
 - Physical inactivity
 - •
- 7. Nonmodifiable: Nonmodifiable risk factors are:
- Being overweight High blood cholesterol **difiable:** Nonmodifiable risk factors are: **Age:** The older one is, the more likely he/she to develop a tonary heart disease or to have a cardiac event.
 - **Ethnic background:** South Asian living in the UK are relice as likely to develop coronary heart disease compared to the relicit he UK population. Also been a from African Caribbean backgrounds have a higher that average risk of developing light blood pressure. Family His art sease.

Type 2 diabetes. Type 2 diabetes is the most common type of diabetes, accounting for around 90% of all diabetes cases.

It is generally characterized by insulin resistance, where the body does not fully respond to insulin. Because insulin cannot work properly, blood glucose levels keep rising, releasing more insulin. For some people with type 2 diabetes this can eventually exhaust the pancreas, resulting in the body producing less and less insulin, causing even higher blood sugar levels (hyperglycaemia).

Type 2 diabetes is most commonly diagnosed in older adults, but is increasingly seen in children, adolescents and younger adults due to rising levels of obesity, physical inactivity and poor diet.

The cornerstone of type 2 diabetes management is a healthy diet, increased physical activity and maintaining a healthy body weight. Oral medication and insulin are also frequently prescribed to help control blood glucose levels.

Risk factors: Several risk factors have been associated with type 2 diabetes and include:

- 1. Family history of diabetes
- 2. Overweight
- 3. Unhealthy diet
- 4. Physical inactivity
- 5. Increasing age
- 6. High blood pressure
- 7. Ethnicity
- 8. Impaired glucose tolerance (IGT)*
- 9. History of gestational diabetes
- 10. Poor nutrition during pregnancy

	Develops disease	Don't develop disease
Exposed	а	b
Non exposed	С	d

So, the odds that an exposed person develops disease = $\frac{a}{b}$

And, the odds that a non-exposed person develops disease = $\frac{c}{d}$

So OR
$$= \frac{\frac{a}{b}}{\frac{c}{d}}$$

 $= \frac{a}{b} \times \frac{d}{c}$
 $= \frac{ad}{bc}$

IAR : Incidence Attributable To Exposure (Incidence Attributable Risk)

= Incidence in exposed group – Incidence in non-exposed group.

= Incidence in exposed group – Incidence in non-exposed group.
PAR:
Proportion of Incidence Attributable to Exposure (Proportional Attributable for the second group)

$$= \frac{Incidence in exposed group – Incidence in exposed group)}{Incidence in exposed group)}$$

$$= \frac{IAB}{Incidence in exposed group)}$$
Example:

IAR = 28.0 - 17.4

10.6 / 1000 / year

PAR $=\frac{28.0-17.4}{28}$ = 0.379

Probability vs Odds

Probability: It is the risk of having an event.

Odds: It is the ratio of the probability of having an event to the probability of not having the event.

Odds = $\frac{p}{1-p}$ where, P stands for probability.

Example: 1 out of 5 patients suffer a stroke.



Given,

Duration of suffering = 20 years Initial level of quality of life = 0.2Improved level of quality of life = 0.5

QALY gained = $20 \times (0.5 - 0.2)$

= 20 × 0.3 = 6 years

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- 3. Rise in mental illness.
- 4. Crime, delinquency.
- 5. Drug dependency which boost the demand/psychiatric help.
- 6. Alarming rise in medical costs.

Global cause of death by category: GBD and the WHO use 3 broad category definitions.

- **Group I:** Communicable plus maternal, perinatal and nutritional conditions.
- **Group II:** Noncommunicable conditions e.g. heart disease, stroke, cancer.
- Group III: Injuries including motor vehicle accidents, homicide and suicide.



In developed countries, 77% of deaths are from non-communicable disease, 14% deaths are from communicable diseases and 9% of deaths from injuries. In developing countries, 55% of deaths are from communicable disease, 37% of deaths are from noncommunicable disease and 8% from injuries.

Two broad statements can be concluded from these findings. First, communicable disease is still a disproportionate burden in developing countries. Second, noncommunicable disease plays a role in both developed and developing countries.

Double burden of disease: The coexistence of communicable and noncommunicable diseases (NCDs) is termed as double burden of disease. The impact of this double burden on older productor, is naturally more severe. The prevalence of noncommunicable diseases has been on the viscing the properties with longer life spans and due to lifestyle and dietary factors as well as occupational and the real mental hazards. On the same time, older people remain vulnerable to a number of communicable diseases due to poor autrized, sanitation and hygiene.

The situation is more a control of South Asia where the numbers of older people are rapidly growing and while continuing to live or every ord in the number of discuss. While communicable diseases have been traditionally prevalent in the region, NeDChave also been on consistent rise in making the double burden of disease very relevant in South Asia.