

# Ambient (outdoor) Air Pollution & Public Health



وزارة الصحة  
Ministry of Health

Dr. Amir E. Johri, MBBS, MPH, MCIEH, FRSPH  
Department of Environmental & Occupational Health  
Directorate General for Disease Surveillance and Control

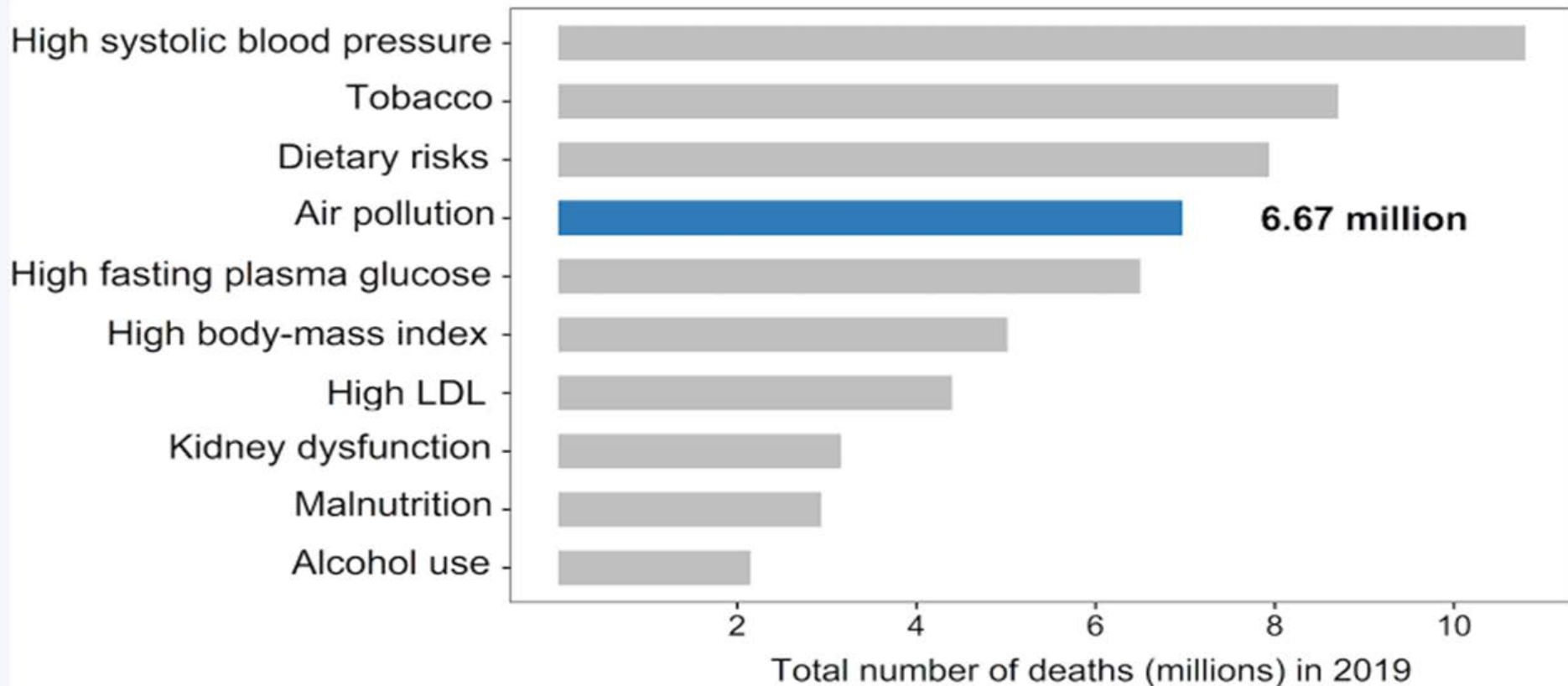
# Global Concern

- Ambient (outdoor) air pollution accounts for an estimated 4.2 million deaths per year (2016)
- Around 90% of the world's population live in places where air quality levels exceed WHO limits (2019)
- Globally, 93% of the world's children under 15 years of age are exposed to ambient fine particulate matter (PM<sub>2.5</sub>) levels above WHO air quality guidelines, which include the 630 million of children under 5 years of age, and 1.8 billion of children under 15 years



# Global ranking of risk factors by total deaths from all causes in 2019

STATE OF  
GLOBAL AIR /2020



# Percentage of Global Deaths (by Cause) Attributed to Air Pollution in 2019

STATE OF  
GLOBAL AIR /2020



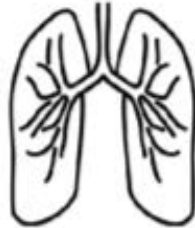
**40 percent**  
of COPD deaths



**20 percent**  
of diabetes  
deaths



**20 percent**  
of ischemic heart  
disease deaths



**19 percent**  
of lung cancer  
deaths



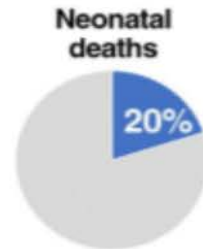
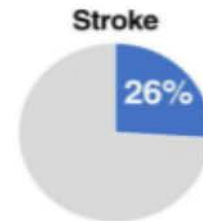
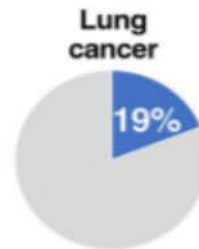
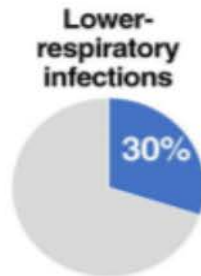
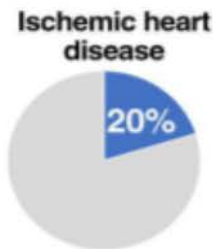
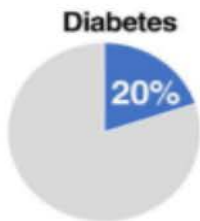
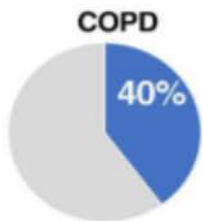
**26 percent**  
of stroke deaths



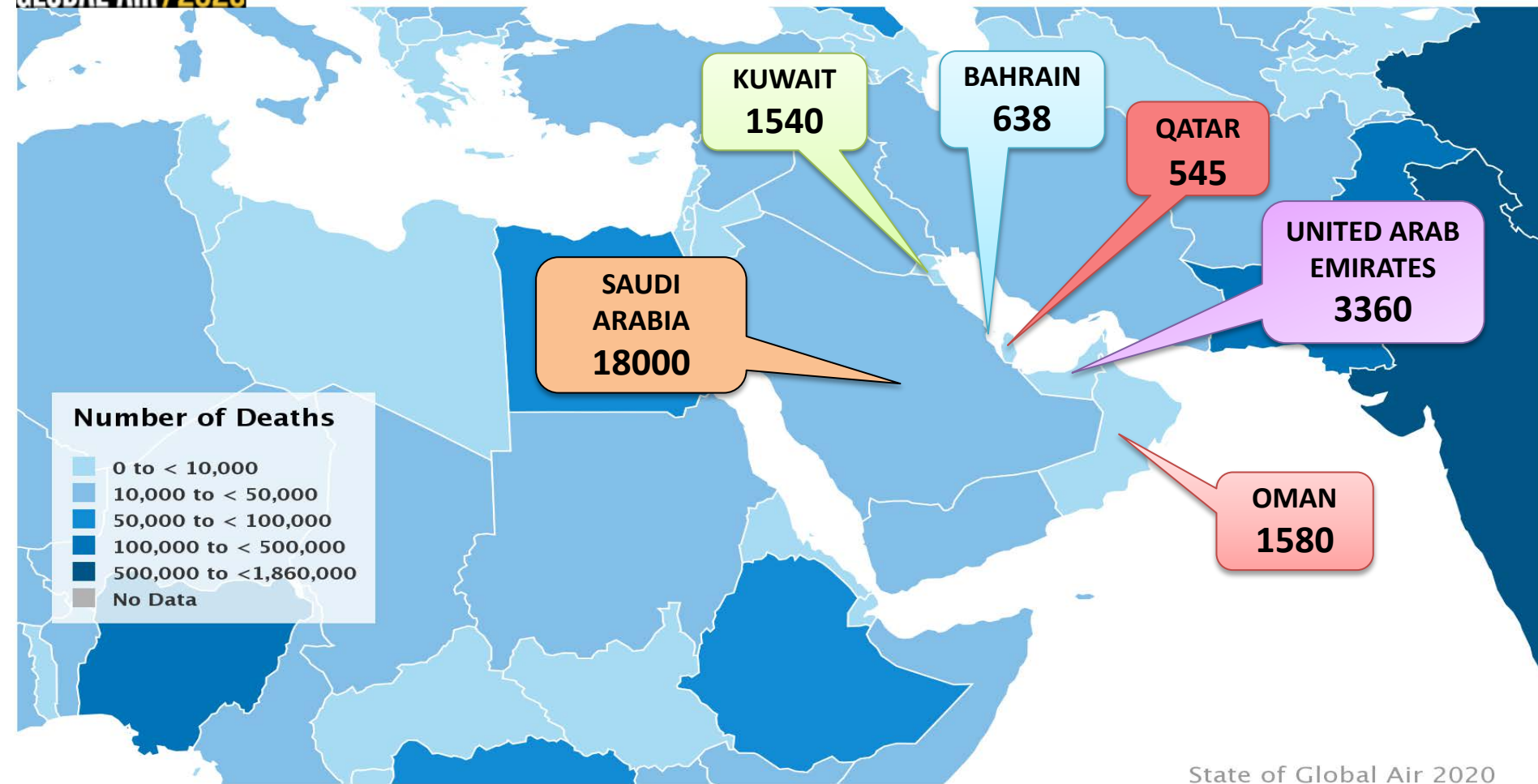
**30 percent**  
of lower-respiratory  
infection deaths



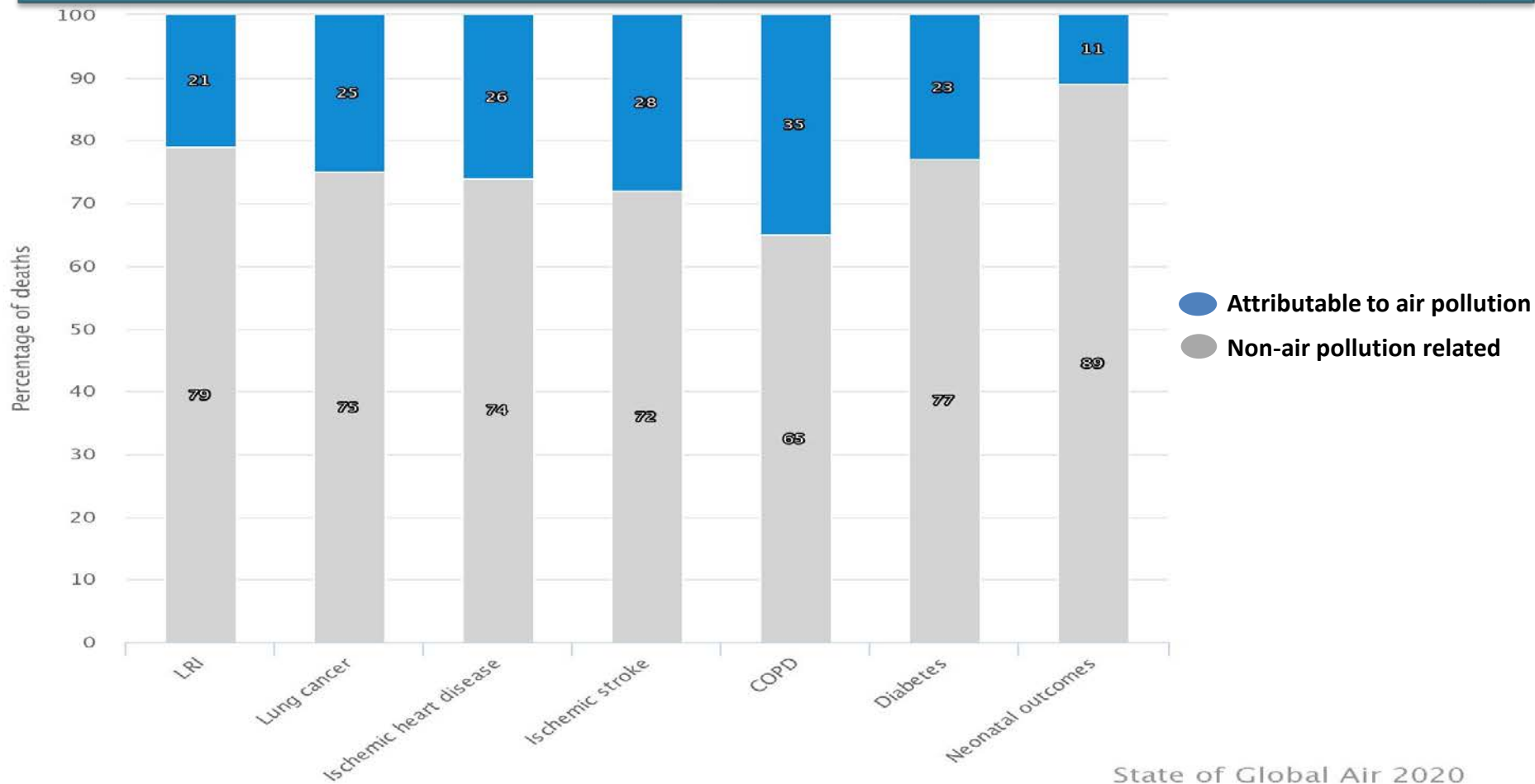
**20 percent**  
of neonatal  
deaths



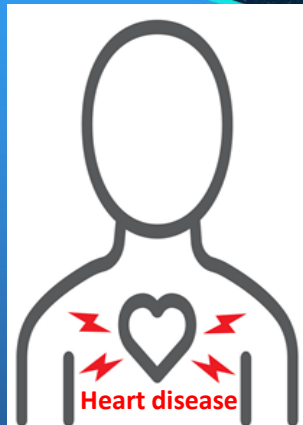
# Number of Deaths Attributable to Air Pollution in 2019(GCC countries)



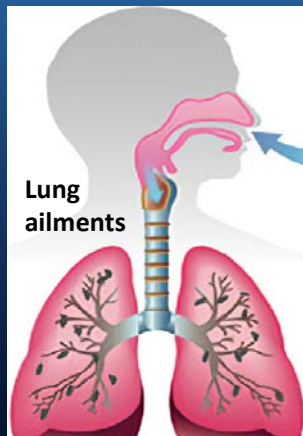
# Cause-specific burden (Oman, Total Air Pollution, Deaths)



# Who is at more risk?



Expecting mothers



Communities with poor air quality



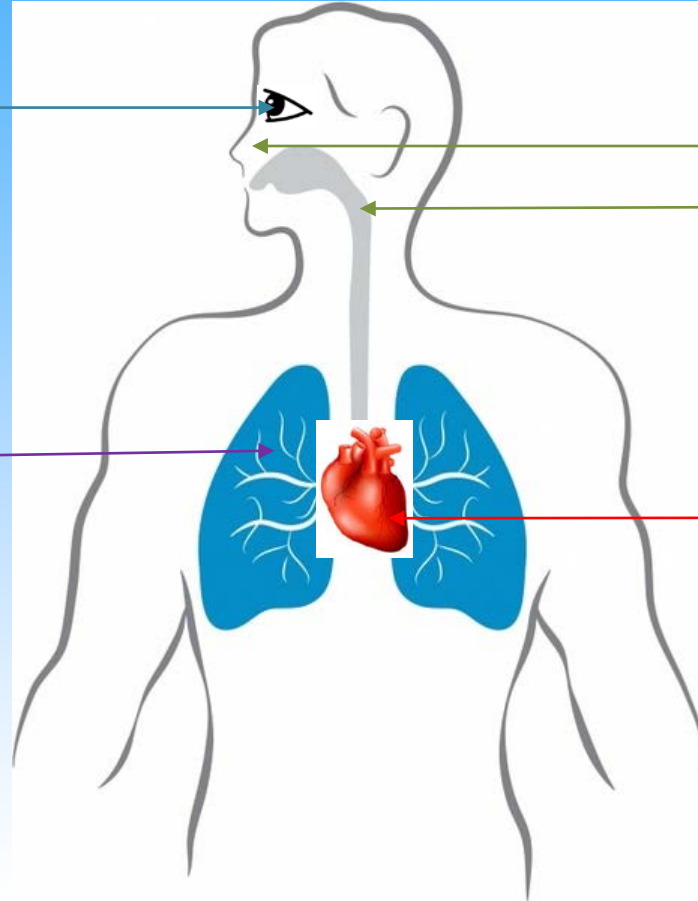
Out door activities



# Health Effects (short-term exposures)

Irritation of eyes

- Allergies
- Aggravates asthma attacks & Chronic obstructive pulmonary disease (COPD)

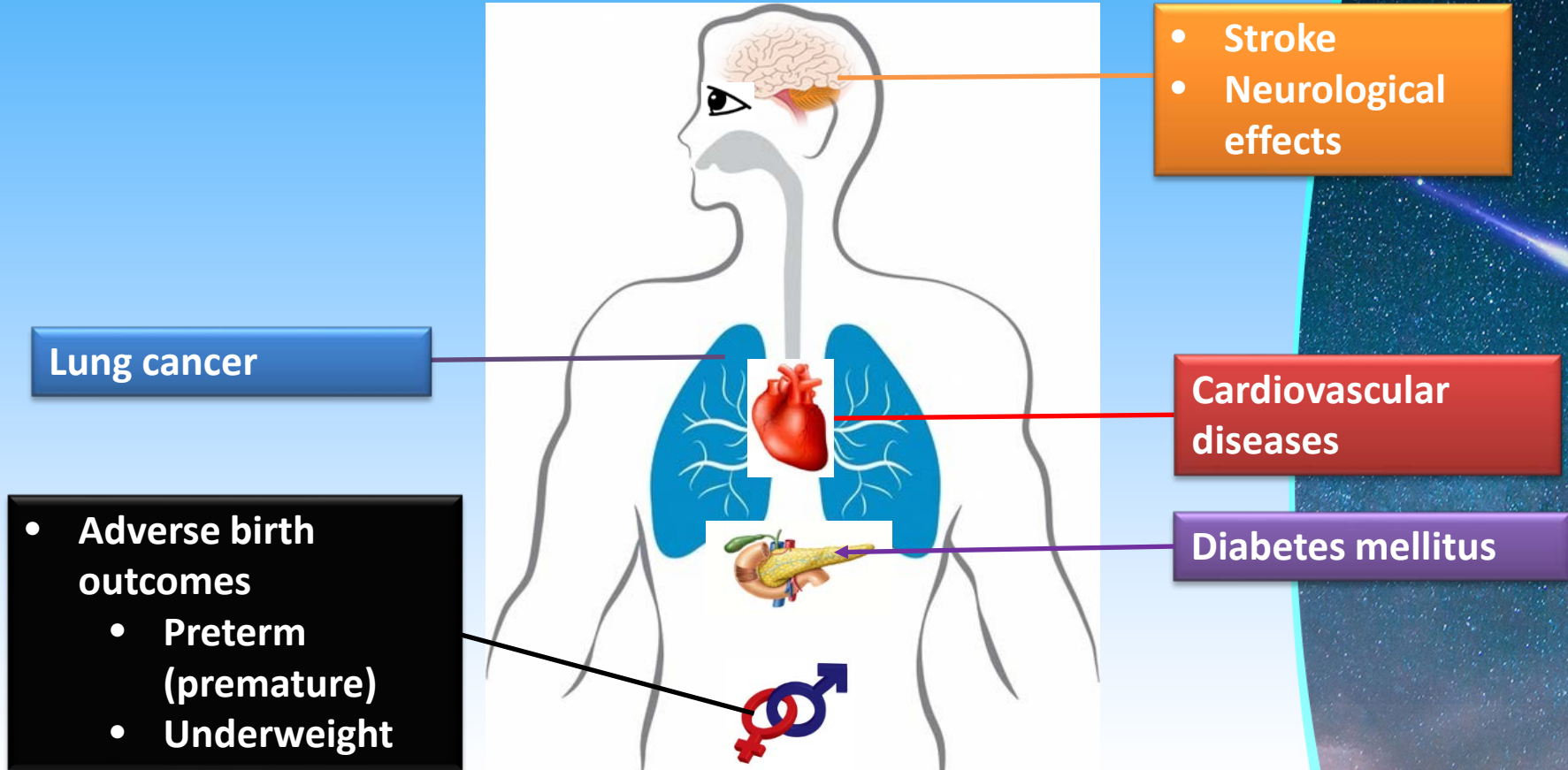


- Irritation of nose and throat (coughing)
- Breathing difficulties (Shortness of breath)

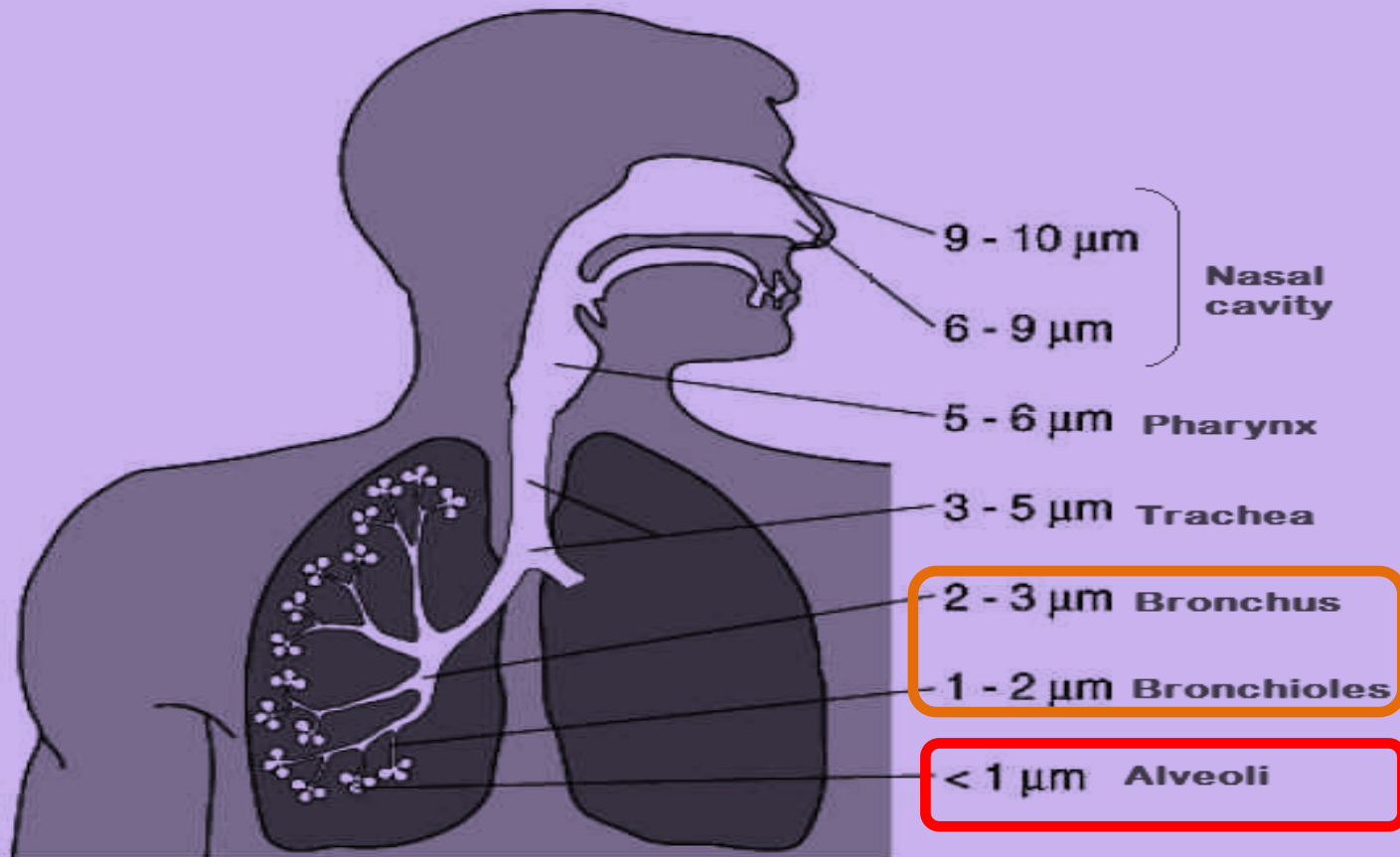
- Arrhythmias (abnormal rate and rhythm of heart beat)
- Heart attack



# Health Impacts (Long-term exposures)

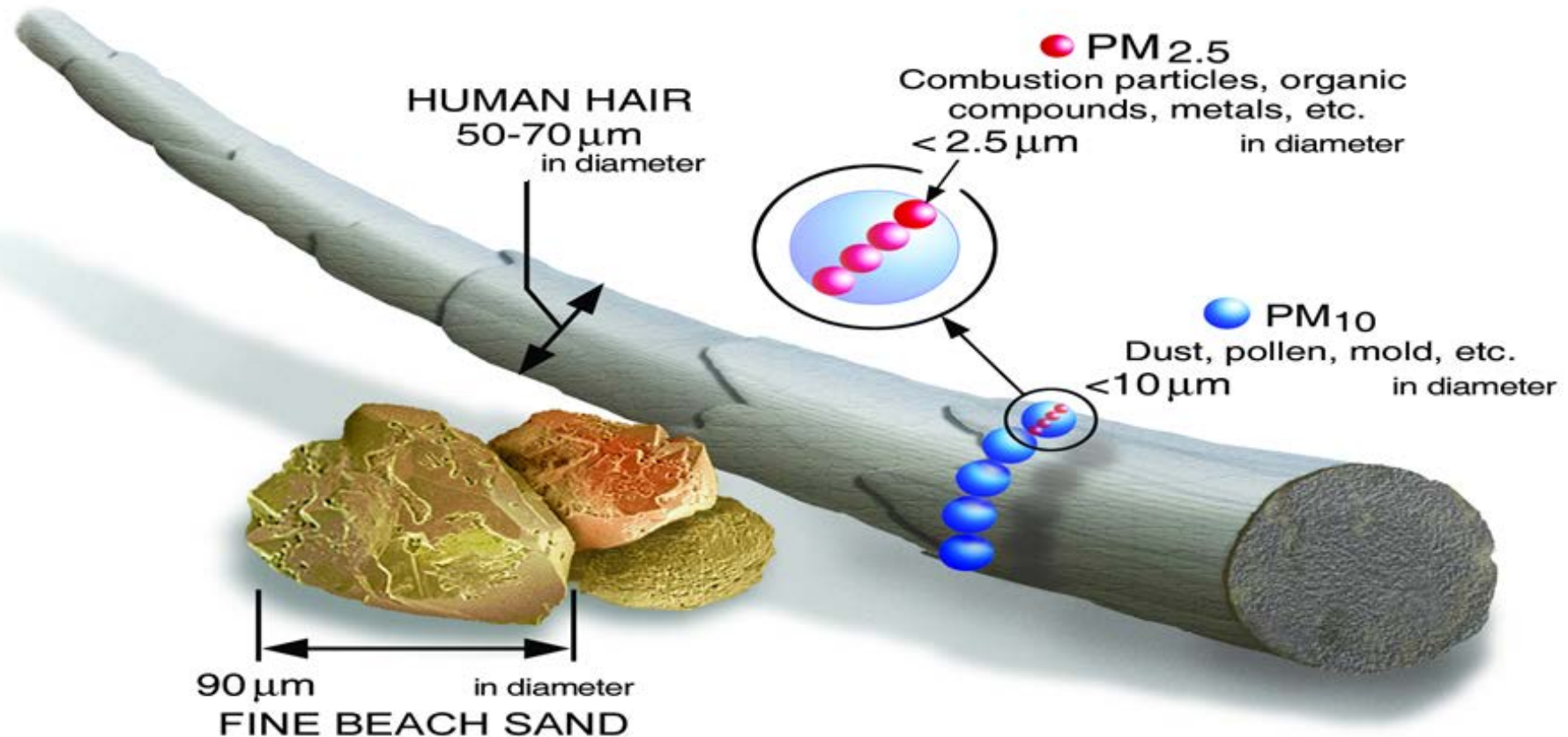


# Particle size matters?



Particle  
deposition  
in  
respiratory  
System

# Relative size of particulate matter



# Air quality and COVID-19

## *Clearer blue skies*



### Possible connections:

- Health conditions (asthma, COPD) with increased vulnerability to COVID-19
- Affects the human immune system
- Few studies suggested higher levels of air pollution experienced more infections and fatalities

# The way forward

- Improved surveillance and monitoring of health impacts of air pollutants
- Develop/update national standards for ambient air pollutants
- Strengthen collaboration and coordination among all the national & regional stakeholders (neighboring countries)
  - Furnish environment and health data at a single portal from various ministries/agencies to formulate future strategies, policies and action plans
- Establish early warning systems at national level

**Think globally, act locally**

A globe of the Earth is the central focus, held gently by several hands of diverse skin tones. The hands are positioned around the globe, with fingers spread, suggesting a collective effort to care for the planet. The globe shows the continents of North and South America in green and brown, and the oceans in blue. The background is a clear blue sky with a few wispy white clouds.

**Together we can make the difference**

Thank

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You

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