

# Environmental Health



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# Environmental Health

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- ✓ Across the world, the environment is a key determinant of health and well-being.
- ✓ Globally, nearly 25 percent of all deaths and total disease burden can be attributed to environmental factors.
- ✓ Unimproved water and sanitation, ambient air pollution, indoor pollution from solid fuels, and lead exposure are among the leading contributors to global burden of disease.
- ✓ In addition, many current and emerging exposures in food, water, soil, air, and consumer products adversely affect human health.

# Why Is Environmental Health Important?

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**Maintaining a clean healthy environment is central to increasing quality of life and years of healthy life.**

**The burden of preventable environmental diseases are disproportionately felt by residents of poor developing countries.**

**The reasons for this disproportionate effect in poor countries include: lack of modern technology, weak protective environmental laws and regulations, a lack of awareness, and poverty.**

# WHO Definition of Environmental Health

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It refers to the theory and practice of assessing, correcting, controlling, and preventing those factors in the environment that can potentially affect adversely the health of present and future generations.

# What Is Environmental Health Science?

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“The study of those **factors** in the environment that affect human **health**” under these conditions:

**Factors** (“pollutants” or “toxicants” = Hazard) in air, water, soil, or food ... that human activities produce.

**Transferred** to humans by inhalation, ingestion, or absorption (exposure).

**Production of adverse health effects** as a result of that exposure.

# Basic Requirements for a Healthy Environment

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**Clean air**

**Safe and sufficient water**

**Safe and adequate food**

**Safe and peaceful settlements**

**Stable global environment**

# WORLD ENVIRONMENT DAY



5 JUNE

Forests: Nature at Your Service

In support of the UN International Year of Forests





# WORLD ENVIRONMENT DAY



@RaeesYameen2018



I'm with Nature







#BEATPLASTICPOLLUTION

IF YOU CAN'T REUSE IT,  
**REFUSE IT**



#BEATPLASTICPOLLUTION



WORLD  
ENVIRONMENT  
DAY



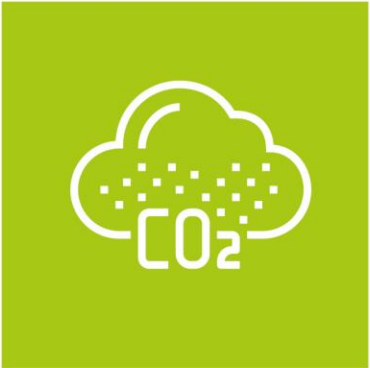


Transmission toward more environmental sustainability:

Greenhouse gas emissions

Waste disposal

Water



# GREENING THE BLUE REPORT 2018

THE UN SYSTEM'S ENVIRONMENTAL FOOTPRINT AND EFFORTS TO REDUCE IT



# World Environment Day 2021: June 5th



**World Environment Day  
2021**

- World Environment Day is celebrated on June 5th globally
- The theme for 2021 is **"Ecosystem Restoration"**
- Aim is to promote activities that protect the environment

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## Theme for 2021: "Ecosystem Restoration"



**UN HABITAT**  
FOR A BETTER URBAN FUTURE

Ministry of Climate Change  
Government of Pakistan

UN environment  
programme

WASTE WISE  
CITIES  
YEAR 4

CPMA  
City Government  
of Karachi

Sindh Environmental Protection Agency  
Environment Climate Change & Coastal Development  
Department, Government of Sindh

Sindh  
Solid Waste Management  
Board

URBAN POLICY &  
STRATEGIC PLANNING  
F&D DEPARTMENT GOVT OF SINDH

NED  
UNIVERSITY OF  
ENGINEERING & TECHNOLOGY

**Launch of Waste Wise Cities Tool in Pakistan  
for Clean and Healthy Cities and Oceans**

**Celebrating World Environment Day**

**UNITED NATIONS DECADE ON  
ECOSYSTEM  
RESTORATION  
2021-2030**

**clean  
seas**  
turn the tide  
on plastic

27 May, 2021

# Basic terminology:

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## Hazards

- ✓ Things in the environment that are harmful are called **hazards** and include things like chemicals, disease-causing bacteria, loud noises and even stress in our life.
- ✓ hazards can be natural or human-made.

# Hazards in the Environment

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**Chemical:** Air pollutants, toxic wastes, pesticides, VOCs

**Biological:** Disease organisms present in food and water, also Insect and animal allergens

**Physical:** Noise, ionizing and non-ionizing radiation

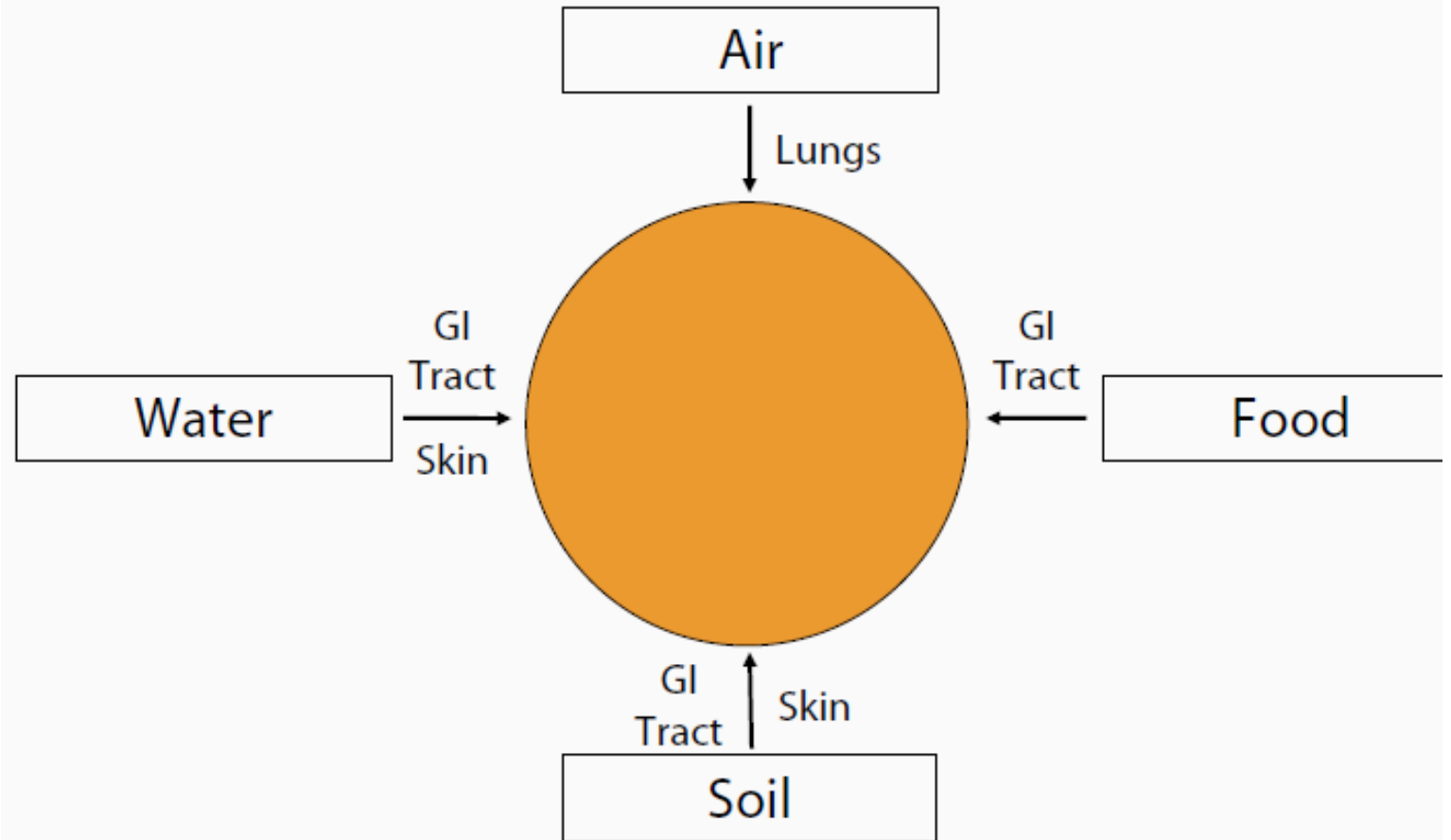
**Socioeconomic:** Access to safe and sufficient health care



# Routes of exposure

How do hazards get transformed to our bodies????

- Routes of exposure through gaseous, liquid, and solid medi



Adapted from Moeller, D.W.



# Health Effects of Hazards

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**Adverse vs. beneficial**

**Acute vs. delayed onset**

**Clinical vs. subclinical manifestations**

**Transient (reversible) vs. chronic (irreversible)**

# Examples of Manifestations

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**Lung disease**

**Reproductive effects**

**Teratogenic effects**

**Neurologic effects**

**Immunosuppression and hypersensitivity**

**Cancer**

# Vulnerable Groups (susceptible)

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Low socioeconomic status

Women

Children

Elderly

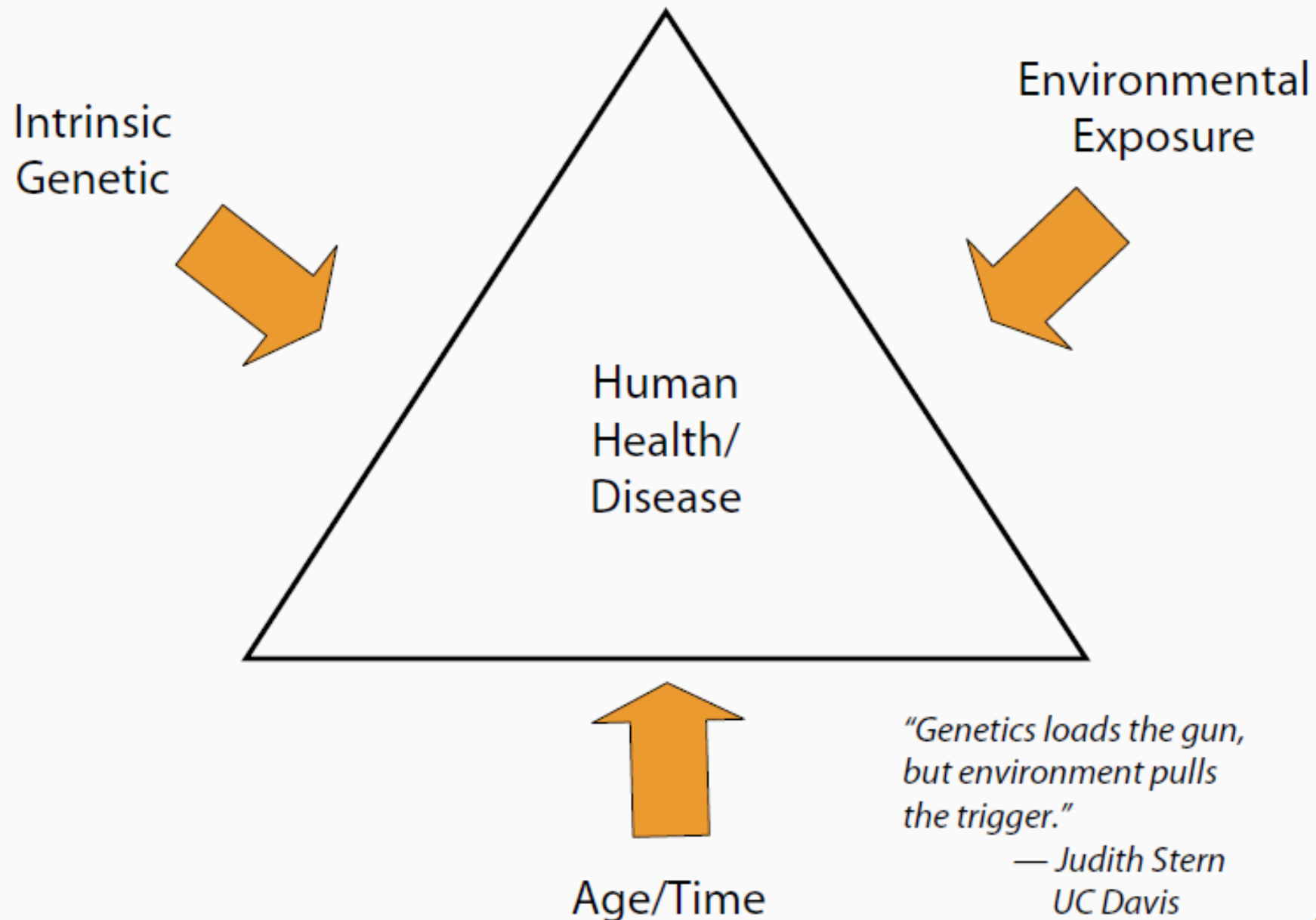
Ethnic minorities

Disabled

Indigenous peoples

- All of whom are often more vulnerable because of Genetics or They are not empowered to change their environment

## Environment Pulls the Trigger

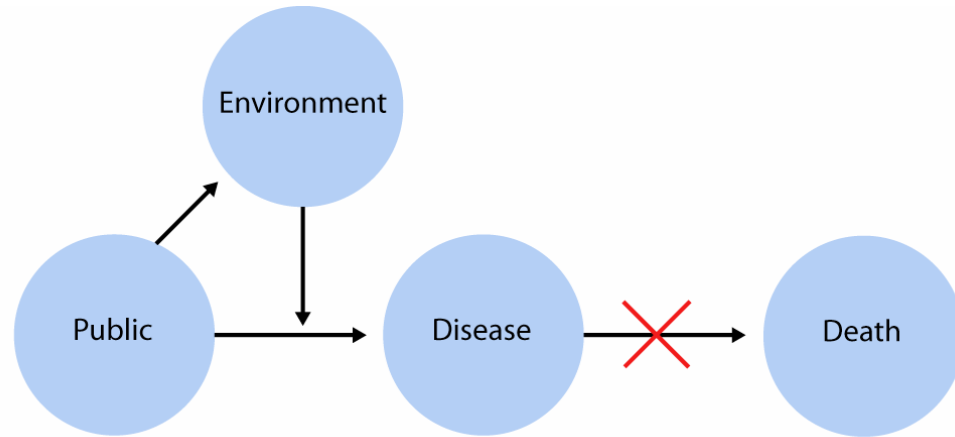


# Problem Solving Paradigm: six steps

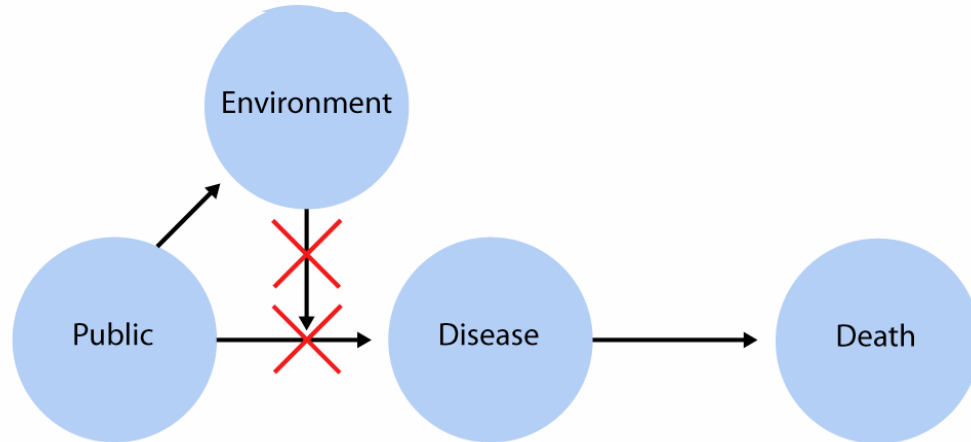
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1. Define the problem
  2. Measure its magnitude
  3. Understand key determinants
  4. Develop intervention/  
prevention strategies
  5. Set policy/priorities
  6. Implement and evaluate
- } Risk assessment
- } Risk management

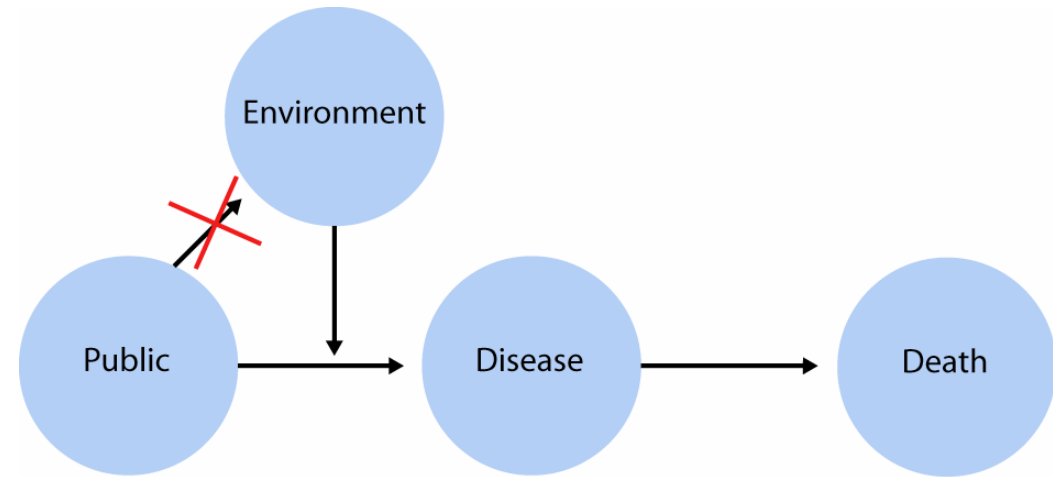
# Improving Human Health and Environment: 3 Models



Clinical Intervention Model



Public Health Intervention Model



Environmental Stewardship Model



# Prevention and Control Methods

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- ✓ **First choice control method: is usually the most effective and easiest to implement, and produces the largest benefit at the lowest cost.**
- ✓ **Continued progress requires using more and more expensive methods that remove smaller amounts of pollutant**
- ✓ **At some point, with more preventive measures, costs will outweigh benefits**

# The 6 Themes of Environmental Health: Healthy People 2020

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The Healthy People 2020 Environmental Health objectives focus on 6 themes, each of which highlights an element of environmental health:

- 1) Outdoor air quality
- 2) Surface and ground water quality
- 3) Toxic substances and hazardous wastes
- 4) Homes and communities
- 5) Infrastructure and surveillance
- 6) Global environmental health

# What is environmental justice?



**Environmental Justice (EJ)** means that everyone has a right to live in an environment that doesn't make them sick, regardless of their race, culture, or income.

# Environmental Justice

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**Unfortunately, some neighborhoods or communities are exposed to more environmental hazards than others, and may suffer higher rates of health problems.**

**These communities often have less economic or political power in society when decisions are made.**

**For example, toxic waste dumps, polluting factories, and busy highways are often built in lower-income neighborhoods or communities of color.**



1-12 November, 2021  
Glasgow, Scotland

**For the first time, world leaders promise to end deforestation by 2030, and to reduce emissions by 30% by 2030 (compared to 2020 levels).**