

Human Health and Environmental Toxicology: *Environment* Chapter 7

What are the effects of children being driven to school (rather than walking), as discussed on the first page?

Two key health indicators: **life expectancy** and **infant mortality** (the cases of Japan and Zambia)

- What were the leading causes of death in the US in 1900? In 2000?
- What are some global health challenges that have succeeded? That are ongoing? Failing?
- What are **emerging diseases**? Reemerging diseases? Some examples? And what are **pandemics**?

Q) Why is it so hard to establish causal links between environmental pollutants and incidence of disease, especially with diseases like cancer?

Toxicology

- **Persistence, bioaccumulation, and biological magnification** between **trophic levels** (7.6, 7.5 7th)
- The case of **DDT**
- How does **endocrine disruption** work?
- What distinguishes **acute** from **chronic toxicity**?
- The role of **dose** and **response** in the **LD50**, the **ED50**, and other tests
 - What factors make some individuals more susceptible to certain chemicals than others?
 - § The case of Yaquis Indian preschoolers
- What are some of the various shortcomings of using nonhuman animal models to get information about potential human health risks?
- What distinguishes toxicology from **epidemiology**? What are the relative merits of each?
 - See Table 7.3 (7.4 in 7th) for comparison
- In reality, we are almost never exposed to just *one* chemical: the role of **additive, synergistic, and antagonistic** effects
- The ‘dilution paradigm’ and the (newer) ‘boomerang paradigm’ – the rise of **ecotoxicity**

The Ocean and Human Health – **algal blooms** (including red tides) and other hazards

The four steps of a **risk assessment** (and establishing ‘maximum allowable concentrations’)

- hazard identification
- dose-response assessment
- exposure assessment
- risk characterization

The role of **cost-benefit analysis** and the **precautionary principle**

Briefly revisiting chapter 6: Marine Ecosystems

- What is a **watershed**? An **estuary**? The difference between **plankton, nekton, and benthos**?

Discussing the pbworks uploads...