**Notes: Environmental Effects on Human Health**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ causes illnesses directly and indirectly.
* Pollution may cause illness by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ us directly, as in the cases of lead poisoning and lung cancer.
* Second, because many infections diseases, such as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and river blindness, spread in polluted environments, illness can be caused indirectly.
* The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (WHO) has begun to collect data on how the environment affects human health.
* In one study, WHO estimates poor health by days of healthy life lost to death and disease in different world regions.
* The study shows that, in general, people in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ countries suffer \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ health impacts.
* The main factor is the enormous role of infectious diseases which are more common in crowded areas with poor sanitation.

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**Toxicity: How Dangerous Is It?**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the study of toxic substances, including their nature, effects, detection, methods of treatment, and exposure control.
* Several pollutants have toxic, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, effects.
* The toxic effect of a chemical depends on:
  + Dose
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
  + Body’s ability to break down the chemicals

**Epidemiology**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the study of the distribution of diseases in populations and the study of factors that influence the occurrence and spread of disease.
* Scientists trace the disease to try to find its origin and how to prevent it from spreading.

**Pollution from Natural Sources**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ occurring pollutants usually become hazardous to health when they are concentrated \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ their normal levels in the environment.
* The most common pollutants from natural sources are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, soot, and other particulates.

**Heavy Metals**

* Another pollutant from natural sources are the so-called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Dangerous heavy metals include the elements \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, cadmium, lead, and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* These elements occur naturally in rocks and soil.
* Most of these elements cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when they are ingested beyond their threshold dose.

**Recent Improvements**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the United States have helped reduce exposure to pollutants. Most vehicles and factories now have pollution-control devices.
* On average, people contain lower levels of some toxic chemicals in their bodies than in the past.
* Because we know so little about the effects of chemicals on our health, new health risks are discovered frequently.
* For example, scientists now think that chemical pollution may be part of the cause of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ diseases.

**Burning Fuels**

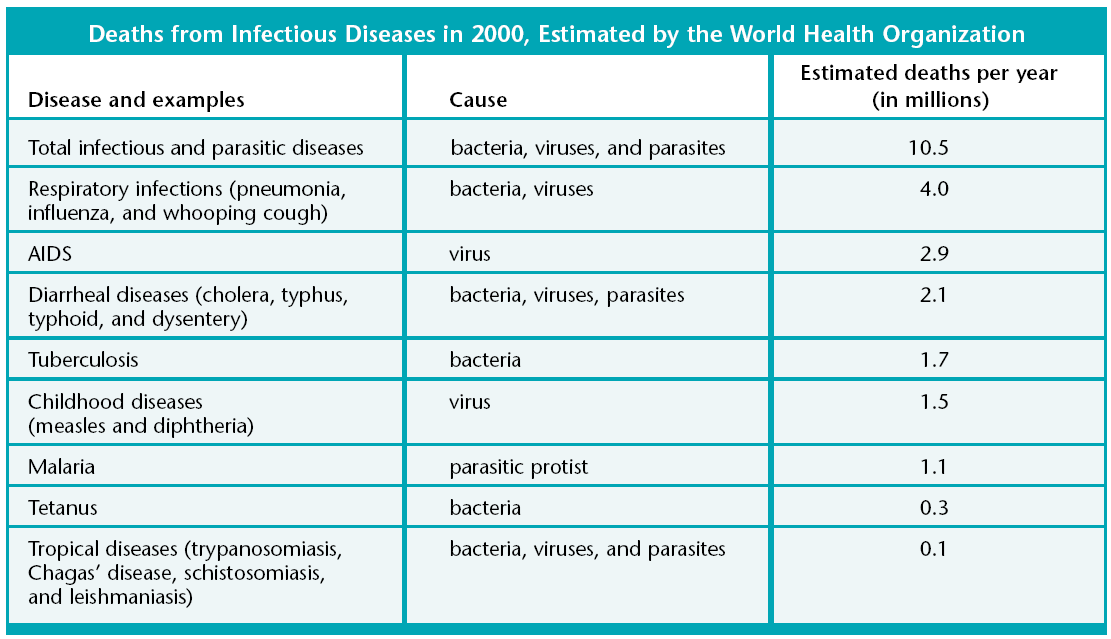
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is still a major health problem, despite the very real advances in public health resulting from pollution control.
* Burning fuels in vehicles, home furnaces, power plants, and factories introduces enormous amounts of pollutants into the air, including the gas \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* These pollutants and particulates contribute to premature death each year from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, heart disease, and lung disorders.

**Waste Disposal**

* Much of the pollution in our environment is a byproduct of inadequate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Although methods of disposing waste have improved, problems remain.
* Laws regulating waste disposal are not always enforced.

**The Environment’s Role in Disease**

* Some of the damage to human health is not caused by toxic chemicals but by organisms that carry disease.
* Infectious diseases are caused by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, a virus, microorganism, or other substance that causes disease.

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**Cholera**

* Nearly three-fourths of infectious disease are transmitted through water.
* The deadliest waterborne diseases, such as those that cause \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*,* come from drinking water polluted by human feces.
* These diseases cause the body to lose water and become dehydrated, and they cause most of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ around the world

**Antibiotic Resistance**

* By \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ the environment, we make it more suitable for pathogens to live and reproduce.
* Our actions cause pathogens to evolve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to antibiotics that are used to kill them.
* In 1979, 6% of European strains of pneumonia bacteria were resistant to antibiotics. Ten years later, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the strains were resistant.

**Emerging Viruses**

* In recent years, medical scientists have been focusing on previously unknown viruses.
* Examples of these “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” include the hanta virus, the Ebola virus, the West Nile virus, and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, which causes AIDS.
* Most viral diseases spread directly from one person to another.
* Often, the virus invades the body through a cut or through mucus membranes.
* We do not have many effective drugs to treat viral diseases.
* Our main defense against viral diseases is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* However, vaccines are virus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and viruses evolve rapidly.
* New vaccines must be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ when a new strain of a viral pathogen evolves.