

By: ~~Stafany/2008~~, Science Editor

7 Environmental Factors Killing People

From climate to technology

Diseases can be genetic or (most often) determined by the environmental factors. World Health Organization says that annually 25 million adults and children die of causes that could be prevented.

- 1. Climate.** Too hot or too cold is bad. In warm climates, hot weather makes people experience "tiredness", fainting, lack of energy and sometimes weight loss. In cold areas, body functions are stimulated and accelerated by the low temperatures. Prolonged exposure to cold can cause tiredness, frostbites and hypothermia (the body temperature decreases under 37°C). Hypothermia can cause a slow death if heat losses are not impeded. This can happen to mountaineers and elders.
- 2. Soil.** The soil's composition in some minerals found in small amounts can cause some diseases. Too much cadmium, lead, mercury and selenium in the soil are transmitted to plants and animals consuming them, and from both in human food, menacing health. The high concentrations can be natural, but sometimes due to contamination. Even too much of some life sustaining elements can be harmful: cobalt, copper, iodine, manganese, molybdenum, sulfur and zinc.
- 3. Water.** Water is influenced by the rock layer beneath, vegetation and atmosphere. It can contain too much or too little of some elements. A lot of calcium in the water prevents cardiovascular disease, while the lack of iodine causes goiter, due to the inflammation of the thyroid gland. Adding fluorine to the water is considered to fight off tooth decay. But Japanese disease "itai itai" ("pain pain") is water caused cadmium poisoning. It appears when drinking water or that used for flooding the rice paddies is contaminated with cadmium discharged from mines. Minamata disease (from the name of a Japanese port) represents mercury poisoning. A massive intoxication, which killed 200 persons, occurred there in the '50s due to fish and mollusks that absorbed industrial wastes discharged in the water. Such epidemics also broke out when farmers, instead of planting seeds treated with a mercury pesticide, ate them. Many microbes and parasites are transmitted through water: cholera, dysentery, gastroenteritis, viral hepatitis, malaria, poliomyelitis, tapeworms, typhoid fever or yellow fever. Many diseases develop in aquatic host species: schistosomiasis is caused by a flatworm developing in water snails. Water is also required by the worm causing river blindness. Fish can transmit diphyllbothriasis, a huge tapeworm. Malaria is transmitted by the Anopheles mosquito, whose development is linked to water. In developing countries, over 1.5 billion people do not have access to drinking water and salubrity. Air, food and wounds are another way through which parasites and infections enter our body.
- 4. Economics.** In 1960, the lifespan was 43 years in developing countries and 69 in developed countries. At the beginning of the '90s, these values were 63 for developing countries and 75 for developed countries, due to reduced infantile mortality and better health care. There are great variations even inside a country, from rural to urban areas, but also between low class, middle class and rich people. For example, between 1985 to 1989, 40 % of the Ivory Coast population lived in the cities, 61 % of them having access to health care system, 30 % to current water, and 69 % to salubrity services. In rural areas, just 11 % of the people had access to current water, and 20 % to salubrity services. These numbers reflected in the overall health, as insalubrious environments boost diseases. In the '80s, there was one medic for about 470 Americans, and one medic for about 25,000 persons in Tanzania. In 1990, life span was of 75.7 in UK, and 42 in Sierra Leone. Malnutrition causes nutrition diseases like beriberi, scurvy, or pellagra, characteristic for developing countries; they are deadly, especially for children. Malnutrition also decreases body's resistance against infections. Kwashiorkor is a disease caused by severe protein shortage, observed in those African children with dilated bellies. Even when well fed, not all the patients will survive, as once installed, the disease is irreversible. Even the richness of wheat or rice cannot impede malnutrition, as they are rich in starch, but not many other required nutrients.
- 5. Infections.** Today, the rapid aerial transport has transmitted infectious diseases even to developed countries. Most often, flu is transported, isolated or epidemic, being triggered in any climate and affecting all ethnic groups. Cholera seemed in the '50s endemic to China and India. But then a new strain spread to Sulawesi (Indonesia), western Pacific, southwestern Asia, southern Europe, ex-USSR, and Africa. At the beginning of the '90s it was reported from war afflicted African countries, like Angola and Mozambique. In 1991, an epidemic broke out in the slums of Lima (Peru). Perhaps the greatest success

against infections was the eradication of smallpox by the end of the '70s. But, by the beginning of the '80s, a new scourge outbreaked: HIV. The toughest issue with HIV is that it affects young and economically active people, impacting the whole economy, not just the patients. Overcrowding is a factor that boosts infections. Instead, vaccination programs have reduced many diseases' incidence in various countries. 6. In developed countries, the largest number of deaths is caused by cardiovascular diseases, caused by several factors: high cholesterol, smoking, lack of exercising, obesity, stress, diabetes and genetics. Cancer is the second death factor in these countries. Researches show that, moving to another country, you are more likely to experience a cancer more common in that country than in yours, because most cancers are caused by the environment. 50 % of the population of developed countries die because of heart and respiratory diseases, caused mainly by lack of exercise, junk food, alcohol abuse and smoking. 7. Technological development is risky: the polluted atmosphere of the overcrowded big cities cause chronic bronchitis, broncho-pneumonias, cancers, heart diseases, and others. Noise favors mental diseases, and the rapid life style of the big cities cause stress, connected to heart diseases. Many industrial metals are toxic. Mining or glass industry can cause silicosis. Pneumoconiosis can affect miners. Stressful life also boosts suicidal rate in the developed countries. A rate of over 20 to 100,000 inhabitants is found in Japan, Hungary, Finland, Austria, France, Belgium, Sweden and Luxembourg. In some countries, suicide can be the third main cause of death of those aged 14-44 after cancer and heart disease.