

Alicia paz research paper sample

[Environment](#), [Pollution](#)



Debra Dutton

BIO 201

Pollution and the Human Body

The human body has an incredible defense and healing system. It uses the various senses like smell, sight and taste to filter the food, air and water as they get into the body. The skin safeguards the body tissues and internal organs from environmental hazards. The skin also senses the variations in environmental temperatures and acts as the body's stimuli in controlling the body temperature. The brain and the nervous system are part of the complex response and flight mechanism that responds to emergencies and dangers. An army of white blood cells handles the pathogens that get into the body, and if one's immune level is sufficient, the foreign invaders are neutralized. The body's system of defense is always under attack (Fontana, Luigi, Vincenzo Atella, and Kammen, 2013). Pathogens which are invisible and odorless, rides quietly on the essential elements of the natural environment like water and air. Pollution is the occurrence of some form energies or materials in quantities that can harm humans, animals and plants. There are both natural and human forms of pollution. Natural pollution has been in existence since the dawn of time, and there is nothing much that people can do to curb natural pollution. However the vast majority of pollutants that are causing diseases today, are results of human related activities, and hence with human activity controls, the human pollution can be controlled. The major forms of pollution are water pollution and air pollution but other forms of pollution like noise pollution, soil pollution, thermal pollution, radiation, sound pollution and others. A list of air

contaminates would include dozens of liquids, solids and gases. According to studies, the five major substance that cause the most damage are oxides of nitrogen, particulate matter, oxides of nitrates and volatile organic compounds. The particulate matters are the fine solid specks in the atmosphere. They include haze, carbon particles, smoke and aerosols. The volatile organic liquids are compounds such as xylenes, dichloromethane, benzene and toluene. All these forms of pollutions have got adverse effects of individual health, and if left unchecked they cause some the known fatal diseases like cancer. The air pollutants mainly gets into the body through the mouth, throat and nose. The nose is very efficient in cleaning and purifying the air during the respiration process. The nose has mucus membrane that traps the inhaled pollutants as the air goes through the purification process (Kato, Masashi, et al. 2013). The pollutants accumulation in the nose may cause infections in sinuses, or get into the body, through the mucus membranes, and still end up infecting the body. When the pollutant chemicals damage some cells in the nose, they triggers the body's protective mechanism and in response it initiates an inflammatory reaction. This may cause suppressions in the body's immune system and make the body vulnerable to diseases. The human skin is the largest organ where a substantial absorption of environmental contaminants occurs. Skin cancer is among the major concerns of skin related diseases that occur as a result of air pollution. The skin's exposure to ultraviolet rays' radiation may lead to the development of skin cancer. The continuous release of chlorofluorocarbons in the atmosphere depletes the ozone layer that blocks the ultraviolet rays from reaching the earth surface. Research indicates that

one percent decrease in stratospheric ozone layer, leads to two percent increase ultraviolet rays on the earth surface, increasing the likelihood of skin cancer cases by two percent. When the air contaminates gets into the body both through airways or absorption through skin, they gets into the blood stream and as the blood circulates throughout the body it distributes contaminates to all the organs and body tissues(Lave, Lester, and Seskin, 2013). According to the conducted studies, the air pollutant substances known to have bad effects on human bodies are lead, carbon monoxide, mercury, volatile nitrites, herbicides, benzene and others. Some contaminates interfere with blood functions, and this affects all organs of the body. Hemoglobin's ability to transmit the oxygen from lungs to the all the body tissues is impaired by carbon monoxide, which has over two hundred more affinity to hemoglobin, than oxygen. Carbon monoxide is a product of incomplete combustion of carbons. Its acute exposure to humans may result to death due to suffocation or cause permanent severe damage to central nervous system. Air pollution and health review of October 2003 issue, describes a list of long-term and short-term studies, showing an association between air pollutant and an increase in hospital admissions well as deaths are due to respiratory and cardiovascular diseases. The air contaminates inform of airborne particles and nitrogen oxides were the major causes. The two are oxygen free radicals are byproducts of metabolism process when the white blood cells fights the bacteria and other pathogens. Though they are part of the body's healthy metabolism with some beneficial roles, they damage cells making them more vulnerable to cancer when exposed to oxidant air pollutant. Severe swellings can cause substantial injury including

damaging of lung tissue, called fibrosis, and irregular thickening. These conditions make inhalation difficult. Nitrogen oxide weakens the contagion fighting capability of white blood cells in the alveoli sacs at the end of the bronchi in the lung, and consequently it may escalate the risk of lung infections. Exposure to poisonous substances from power plants, incinerators, industrial facilities and mining sites, have contributed to cancer. While the fine particles of dust and the dirty air would cause damage to the lungs and breathing problems, studies are showing that the worst effects of air contamination are on the cardiovascular system. The American's Heart Association says that, air contaminates can thicken the blood and increase its tendency to clot. This would damage arteries and promote atherosclerosis which is a buildup of fatty deposits in vessel walls. The body control system and the nervous system comprise of the nerves, spinal cord and the brain. These organs roles are controlling the muscles, feeling and sensing, but pollutants cause abnormal actions in the nervous system. A report from the national institute of health shows that the air pollution is associated with Alzheimer's disease, stroke, Parkinson's disease among other brain disorders. It has now been established that ultrafine particles are fine enough to get past blood, and brain barrier. The barrier is a membrane between the brain, and the circulating blood that prevents foreign substances from reaching the cerebral fluid, and the brain tissue. A research that involved 200 dogs in Mexico found that, exposure to ultrafine particles that carry metals that are associated with fossil fuels combustions causes' brain damage. Professor Garcideunas-Calderon found such metals like nickel and vanadium in the dogs' nasal tissue and their brains. Dogs that were ten

above years old had waxy brain plaque like that found in Alzheimer disease patients. Pollution is especially precarious during pregnancy and early childhood. During pregnancy, the critical rapid cell growth occurs in the fetus (Matusiewicz, Henryk, 2014). This period of cell growth may critically fail when exposed to contamination such as high levels of ozone and carbon monoxide. Air contaminants are associated with congenital heart disease and low birth weight. A Stanford University School of Medicine study recently determined that automobile air contaminants causes malformations of the brain and spine. With increases in cases of cancer, asthma, Alzheimer and cardiovascular disease over the past decade, it is critical for a person to take the possible control measures of his or her health and their families.

Oxidants are frequent villain in the story of air. Studies are showing that antioxidants can help one's body to stay in balance during the daily ravages of this villain (Genius, Stephen, 2011). Nevertheless, it is not all lost healthy diets that are rich in antioxidants helps in detoxifying the body. Where possible, people should avoid substances with toxins such as pesticide and nitrates or use protective gear when using such chemicals. Antioxidants help in clearing oxidants from the body before they injure the cells and they also suppress enzymes that cause cancer. They also help to repair the oxidants damaged tissue. The major sources of antioxidants are foods that are rich in vitamin E, vitamin C, folic acid and green tea. Other ways of reducing the risk associated with pollution are adopting policies that seek to reduce activities that release pollutants to the air. The green energy policies also advocates for conversion of the harmful substances to harmless forms before they released to the atmosphere.

Work cited

Fontana, Luigi, Vincenzo Atella, and Daniel M. Kammen. "Energy efficiency as a unifying principle for human, environmental, and." (2013). Lave, Lester B., and Eugene P. Seskin. Air pollution and human health. Vol. 6. Routledge, 2013. Genuis, Stephen J. "Elimination of persistent toxicants from the human body." Human & experimental toxicology 30. 1 (2011): 3-18. Kato, Masashi, et al. "Comparison of Barium and Arsenic Concentrations in Well Drinking Water and in Human Body Samples and a Novel Remediation System for These Elements in Well Drinking Water." PloS one 8. 6 (2013): e66681.

Matusiewicz, Henryk. "Potential release of < i> in vivo trace metals from metallic medical implants in the human body: From ions to nanoparticles-a systematic analytical review." Acta biomaterialia (2014).