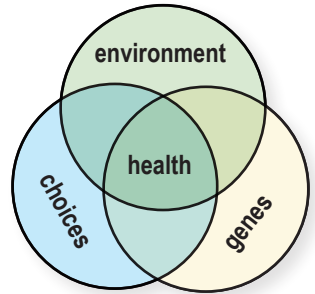


What is Environmental Health?

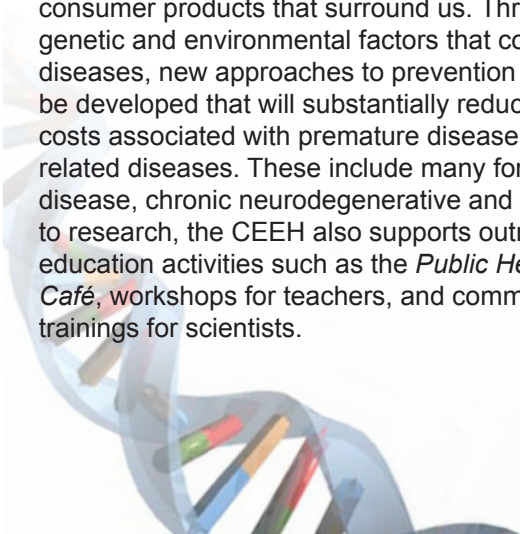
When you ask most people what the word “environment” makes them think of, they’ll tell you it’s the great outdoors – majestic trees, fresh air, pristine lakes, and vast oceans. But the environment is more than that. It’s also our workplaces, schools, homes, farms, and shopping malls. For us humans, the **ENVIRONMENT** is all the places we live, work and play. According to the World Health Organization, **HEALTH** is a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity. When you put the two together, you get **ENVIRONMENTAL HEALTH**, or the study of how the environment affects human health. Environmental health is part of the field of Public Health and environmental health scientists strive to improve people’s health and prevent environmentally related disease.



ECOGENETICS is an area of environmental health research focus. The term refers to the study of how genetics and the environment interact to influence human health.

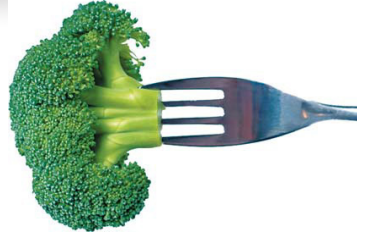
About Our Center

Scientists at the **Center for Ecogenetics & Environmental Health** (CEEH) at the University of Washington study the connections between genetics, the environment, individual behavior, and health. They are working to understand how our genes influence how we react to things we’re exposed to in the environment. The ultimate goal of this research is to find better ways to protect the public from health hazards found in our air, water, food, and the consumer products that surround us. Through the discovery of important genetic and environmental factors that contribute to the causes of chronic diseases, new approaches to prevention and effective new treatments can be developed that will substantially reduce the suffering and health care costs associated with premature disease and death from environmentally related diseases. These include many forms of cancer, cardiovascular disease, chronic neurodegenerative and developmental diseases. In addition to research, the CEEH also supports outreach and education activities such as the *Public Health Café*, workshops for teachers, and communication trainings for scientists.



What Are We Researching?

There are currently 79 researchers affiliated with the CEEH. They study a broad range of topics from Alzheimer's Disease to zebra fish that are used as model organisms. Here are just a few examples of recent research projects that have been supported by our center:



Vegetables like broccoli, cabbage, cauliflower, brussel spouts, turnips and watercress contain a substance called Sulforaphane that changes how people metabolize medications, reducing both bad reactions and not responding to medication. This discovery could lead to new medical and dietary ways to reduce undesirable responses to prescription drugs. Sulforaphane may also help prevent cancer.

Pesticides commonly used on crops are broken down in our bodies by enzymes, including an enzyme called PON1. Because of genetic differences, people have differing amounts of PON1. Those with low PON1 activity are more likely to get sick from OP pesticides and are also at risk for health conditions that involve oxidative stress – highly reactive free radical oxygen molecules that can lead to disease. These conditions include cardiovascular disease, diabetes, and Alzheimer's disease.

Chemicals used to make plastics, such as bisphenol A (BPA) and phthalates, are found in the bodies of animals and humans. These chemicals are hormone disruptors that accumulate in our bodies and cause damage, particularly to the growing fetus. Research shows that the highest exposure to these chemicals is through our diet. Processed food that passes through plastic tubes during manufacturing, and food packaged in metal cans, which are lined with plastic, absorb these chemicals. The chemicals even diffuse into the air. Ways to reduce exposure to BPA and phthalates include eating less processed food and more fresh and local food, reducing dust by keeping carpets, windowsills and refrigerator tops clean, and not bringing dust inside by taking off your shoes at home.



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