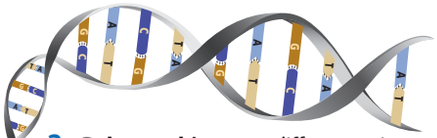
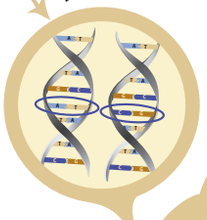
1. **DNA** is the molecule that has the genetic instructions required to give each of us our unique traits.

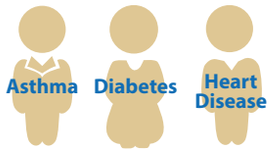


2. **Polymorphisms** are differences in our genes or DNA code—they are what make us different from each other—giving some people brown eyes and others blue, for example.



3. **Environmental factors** are conditions and surroundings that may influence human health and well-being.

4. **Environmental factors** in combination with **polymorphisms** can increase the risk of **disease.**



Learn more about the EPR!

You can help scientists study how variations in our genes (known as polymorphisms) and environmental exposures work together.

As they discover more about the interaction of these two factors, scientists can develop new strategies for preventing and treating common diseases such as cancer, diabetes, and heart disease.

To donate blood for this medical research study, or for more information about enrolling in the EPR, contact us.

Toll-free hotline: 1-866-809-1261
E-mail: info@eprdna.niehs.nih.gov
Web site: http://dnaregistry.niehs.nih.gov

Environmental Polymorphisms Registry
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National Institutes of Health
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Research Triangle Park, NC 27709-2233

NIH Nati l Insti i l Health Sci

Environmental Polymorphisms Registry (EPR)

Exploring how your genes interact with the environment

What Is the Environmental Polymorphisms Registry?

The Environmental Polymorphisms Registry (EPR)—a repository of DNA samples from a population of approximately 18,000 participants—is sponsored by the National Institute of Environmental Health Sciences (NIEHS), part of the National Institutes of Health (NIH). It serves as a resource for scientists studying changes in genes that may increase or decrease one's risk of common diseases such as heart disease, cancer, diabetes, asthma, and Alzheimer's disease. Information from EPR studies will help researchers develop new and better ways of diagnosing, preventing, and treating diseases.

What Is DNA?

DNA, or deoxyribonucleic acid, is the molecule that makes up the genes in humans and almost all other organisms. DNA contains the instructions needed for an organism to develop, survive, and reproduce. DNA is in each cell and tells cells what proteins to make. A cell's proteins determine what it does in the body (e.g., cells in the heart help pump blood throughout the body). DNA is passed on to children from their parents, which is why children share characteristics such as skin, hair, and eye color with their parents.

What Are Polymorphisms?

Polymorphisms ("poly" meaning many, and "morph" meaning form) are changes in genes or DNA code. All individuals have polymorphisms in their genes—that is what makes us different from each other, giving some people brown eyes and others blue. Some polymorphisms can affect how well genes work, and, when combined with environmental factors, can increase risk of disease. Other polymorphisms can lower risk of disease—even in the presence of environmental factors known to increase the risk of disease.

What Is the Exposome?

The term exposome—first coined in 2005 by Dr. Christopher Wild, a cancer epidemiologist—refers to "life-course environmental exposures (including lifestyle factors) from the prenatal period onwards."* It is a comprehensive measurement of all external and internal exposures from conception to death. Studying the exposome will help researchers understand how exposures from the environment, diet, lifestyle, and other factors interact with an individual's unique characteristics—such as genetics and physiology—to affect health.

For more information about the EPR, visit our Web site at *http://dnaregistry.niehs.nih.gov*.

*From the journal *Cancer Epidemiology, Biomarkers, and Prevention*, August 2005, volume 14, page 1847.