



Some Epigenetic Terms

Vocabulary Term	Definition
Activated / deactivated	Genes can be activated (where they are turned “on”)or deactivated (turned “off”) depending on how they are chemically marked. An active gene will have its information used in the generation of proteins for cell functions.
Agouti mouse	Agouti is the name one gene. This mouse model is used to show that genetically identical mice can express different fur color and weight based on their epigenetics (that is, how the agouti gene is turned “on” or “off”). (http://learn.genetics.utah.edu/content/epigenetics)
Bis-phenol A (BPA)	A chemical used in some plastics, which produces unwanted epigenetic effects.
Circadian clock	Your cell’s daily rhythm triggered by light.
DNA	A complex molecule inherited from your parents which contains the information or blueprint for all the proteins needed for life.
Environmental toxins	Substances that cause harm to the body which are encountered in the air, water, food, or skin contact. For example, pesticides, poison oak, excess iron in water, or nitrites in processed meat are all toxins. Only some environmental toxins have been demonstrated to have epigenetic effects.
Epigenetic markers	Chemical "tags" that cause genes to be turned “on” or “off” (regulated) by allowing or preventing the reading of sections of DNA.
Epigenetics	Epigenetics is the study of changes in gene activity that do not change the genetic code.
Epigenome	A second set of instructions interacting with DNA that activate or suppress the expression of particular genes.
Gene expression	When a gene's blueprint is read and creates an effect (like making proteins), the gene is said to be "expressed."
Genetically identical	Two organisms with the same DNA are genetically identical. Two different people are very similar but not exactly the same. Identical twins are genetically identical whereas fraternal twins are born at the same time but do not share the same DNA.
Genome	Your unique list of genetic instructions stored in the sequence of base pairs in your DNA.

High fructose corn syrup

A processed corn product which has enhanced sweetening qualities, but it is only processed in the liver and becomes body fat.

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Histones	For storage in the cell nucleus, DNA is wrapped around these proteins (histones) like thread around small spools. DNA wrapped tightly like this is not able to be read and is deactivated. But if something causes the DNA to “unwind” from the histone, it can then can open up and become active.
Hypertension	High blood pressure that can lead to heart attacks and stroke
Model system	Selection of the lowest level of organism that will allow researchers to answer an research question
Obesity	Excess body weight for a person’s height that is considered dangerous for their health
Poor fetal nutrition	Poor nutrition of the mother which impacts the development of her baby because of missing nutrients in her diet such as folic acid or calcium and/or because of the presence of excess fats or calories.
Schizophrenia	A mental (brain) disorder where the person can have strong emotion swings, trouble understanding reality, and often wants to be alone
Transgenerational epigenetic inheritance	Inheritance of epigenetic markers across generations that affect gene expression and trait(s) of offspring. Traits studied in epigenetics often refer to the way people behave or their vulnerability to disease. Normally markers are wiped clean at conception (when egg and sperm meet), but research is beginning to establish that some markers are not erased.
Vulnerabilities	Environmental factors may influence the epigenome which may result in a person becoming more or less likely to develop a disease.
Whole foods	Foods that do not go through any processing or very little processing. For example: whole grains, fruits, and vegetables. Whole foods usually do not contain additives.