Factors that Influence Gene Expression into Phenotype..

Chromosome Inactivation...

One random X (a Barr Body) is inactivated in each female body cell.

Results in a patchwork color in some animals

Polygenic Inheritance...

Many genes working together to control one trait. Results in a wide range of phenotypes (continuous variation)...like height, skin tone, length of corn ears, vegetable size.

Modifier Genes...

Genes that influence the phenotype by having some degree of control

in working with other genes, like eye color

Brown - gene for melanin is present

Blue - gene for melanin is absent

The modifier gene is a green - blue allele, which can enhance blue, change its shade, or mix with brown to make hazel. Homozygous people carrying the modifier gene are bright blue, or green.

Changes in your Chromosomes...

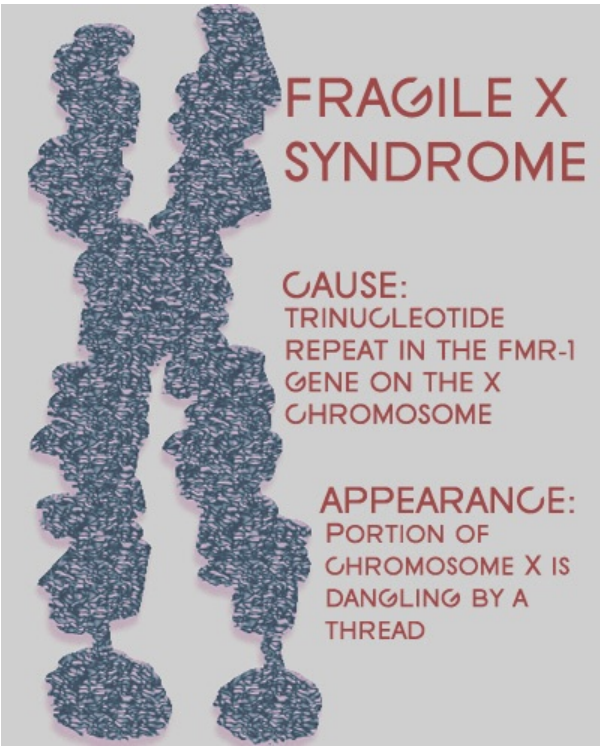
"Mutations"...changes in the physical structure of a chromosome... caused by "mutagens" like radiation, viruses, and chemical exposure.

Deletions - part of a chromosome breaks off and is lost. Ex. Cri du chat syndrome.

Youtube Johnathan's cat cry 2-2

Inversions - a gene breaks off, but is reinserted backwards, changing the way it is read, and the product it makes. Ex. Autism

Duplication - a gene is repeated many times over, making the chromosome thin and fragile in one spot...prone to breakage...syndrome results.



http://www.specialchild.com/archives/dz-008.html

Translocation -

a chromosome part breaks off and attaches in a different spot, or even in a different chromosome

ex. 14-8 cancer
14-21 Down's Syndrome
9-22 leukemia

Nondisjunction -

Problem(s) separating chromosomes / chromatids during meiosis, resulting in too many or too few chromosomes in gamete and embryo...most miscarry early.

Monosomy
Trisomy
Older mothers

Ex. Trisomy 21... Down's
Only 1 X.....Turner's
Extra X.....Kleinfelter's
Extra Y.....Jacob's