

✓ Pleiotropy-

When one gene ^{governs} controlled more than one character or trait is called pleiotropy.

Most of the biochemical pathways, in the living organism are interconnected. Products and intermediates of one pathway may be used in several other metabolic processes. Hence, the phenotypic expression of a gene usually affects more than one character/trait.

The term pleiotropy refers to the effect of a single gene on more than one character/trait. Sometimes one trait will be very evident and others will be less evident. Numerous examples exist in which genes appear to have pleiotropic effects. For e.g. A gene for Camlin

white eyes in *Drosophila* also affects the shape of organs in female responsible for sperm storage as well as other structures. Another example is the frizzled trait in chickens.

The primary result of this gene is the production of defective feathers. Secondary results are both good and bad; good includes increased adaptation to warm temperatures, bad includes increased metabolic rate, decreased egg laying, changes in heart, kidney and spleen. Similarly, sickle cell anaemia is a human genetic disease. Sickle celled individuals suffer from a number of problems, all of which are pleiotropic effects of the sickle cell allele.