

# [The double crossing over: crossing over occurs](https://assignbuster.com/the-double-crossing-over-crossing-over-occurs/)

The other X chromosome of this female was of normal length, but the segment of the Y chromosome was translocated into its short arm, this chromosome had dominant gene car-i- (wild type allele of car, producing dull red eye color and the recessive gene B+wild type alleles of B, producing ovate eye shape). Stern taken test crosses of this female to a car B+ male. As expected the following four types of flies were recorded in test cross progeny 1) Red, normal (car-i- B+) 2) Red bar (car-i- B) 3) Carnation normal (car B+) 4) Carnation bar (car B) Two out of these four phenotypes viz., red, normal and carna­tion bar, are non crossover or non recombinant types. In contrast red bar and carnation normal are crossover or re­combinant type. Stern concluded that, during meiosis, there is ex­change of precisely homologous chromatid segments between ho­mologous chromosomes (crossing over) and crossing over is re­sponsible for the recombination between linked genes.

Types of crossing over:

#### 1. Single crossing over:

In this case there is only one chiasma i. e. frequency of crossing over is very less.

#### 2. Double crossing over:

Crossing over occurs at two points in the same chromosome pair.

#### 3. Multiple crossing over:

Crossing over’s occur at three or more points.