

<b>CHAPTER 19</b>	<b>Hardy-Weinberg Principle and Hardy-Weinberg Equation</b>	<b>BLM 19.1.2</b>
<b>OVERHEAD</b>		

Allele frequencies in a population will remain the same from one generation to the next, as long as five conditions are met:

1. The population is large enough that chance events will not alter allele frequencies.
2. Mates are chosen on a random basis.
3. There are no net mutations.
4. There is no migration.
5. There is no natural selection against any of the phenotypes.

For a trait with two alleles, the sum of the allele frequencies must be 1.00, or 100%.

$p$	+	$q$	=	1.00
frequency of dominant allele		frequency of recessive allele		all the alleles (100 percent)

The Hardy-Weinberg equation can be used to determine the frequencies of different genotypes in a population:

$p^2$	+	$2pq$	+	$q^2$	=	1.00
frequency of homozygous dominant genotype		frequency of heterozygous genotype		frequency of homozygous recessive genotype		all the individuals in the population (100 percent)