



## Inheritance of Recessive Genetic Disorders

2 copies of the mutated allele (gene) are needed for expression

<u>Clear Mare</u>	<u>Clear Stallion</u> 100% Clear	<u>Carrier Stallion</u> 50% Clear 50% Carrier
<u>Carrier Mare</u>	50% Clear 50% Carrier	25% Clear 50% Carrier 25% Affected
<u>Affected</u> <u>Affected</u> 100% Affected	<u>Carrier</u> 50% Affected 50% Carrier	<u>Clear</u> 100% Carrier

(% probability at each mating)

- CARRIERS have only one copy of the mutation so they do not express the trait.
- The mutation can be passed down, sometimes for several generations, without the trait being expressed...even though the mutation is present in a horse's genotype.
- Both parents must be CARRIERS and each must pass along a copy of the mutation in order for a foal to be AFFECTED.

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Material provided by the AHA Equine Stress, Research and Education Subcommittee on Genetic Disorders

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