Malignant Hyperthermia (MH)

Description:

Malignant Hyperthermia or MH is a genetic muscle disorder that affects Quarter Horses and related breeds. Horses with the MH mutation may not show any physical signs of the disorder until triggered by exposure to anesthesia or extreme exercise or stress. Symptoms can include high temperature, increased heart rate, high blood pressure, sweating, acidosis, and muscle rigidity. Symptoms develop rapidly, and if not treated quickly, this condition can be fatal.

MH is inherited as an autosomal dominant trait, so the disorder can be passed on even if only one parent has the defective gene. The mutation can be present along with PSSM and if a horse also has PSSM, the symptoms associated with MH can be more severe. Therefore, testing for both PSSM and MH is recommended for Quarter Horse breeds.

Although this condition is rare, testing for MH is recommended in case a horse must undergo anesthesia. Horses that are known to have the MH mutation can be given medication prior to administering anesthesia to help reduce the severity of the symptoms.

Breeds Affected:

Quarter Horse, any horse with Quarter Horse blood.

Test Results:

Malignant Hyperthermia (MH). The genetic test verifies the presence of the dominant MH gene and presents results as one of the following:

<table>
<thead>
<tr>
<th>MH/MH</th>
<th>Affected</th>
<th>Positive for dominant MH mutation, indicates the animal carries two inherited copies. Homozygous MH horses are genetically bound to pass the gene to 100% of their progeny when bred and all foals will be MH horses.</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/MH</td>
<td>Affected</td>
<td>Both the normal and MH alleles were detected. Horse tested heterozygous for MH. The horse is affected with the MH disorder and there is a 50% chance this horse will pass a MH allele to its offspring.</td>
</tr>
<tr>
<td>n/n</td>
<td>Clear</td>
<td>Horse tested negative for MH and does not carry the MH gene mutation. The horse will not pass on the defective gene to its offspring.</td>
</tr>
</tbody>
</table>

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