



Muscle Weakness **FAQ**

In 2023, farmers in several states suspected a genetic condition characterized by a calf's inability to stand up or remain standing if assisted. This condition was initially referred to as **calf recumbency** but has since been updated to **Early Onset Muscle Weakness Syndrome**, or **MW**. According to current research, this disorder usually begins within the first two months of life, when calves exhibit muscle weakness, become unthrifty, and succumb to secondary health problems, such as pneumonia, or are euthanized.

What is the current state of MW reporting?

A stand-alone gene test for MW was introduced in April 2023, and provided an accurate picture for identifying carrier and homozygous animals.

Beginning in December 2023, the Council on Dairy Cattle Breeding (CDCB) also began publishing a haplotype result for this condition. All genotype animals will receive a haplotype result while only animals submitted for the separate gene test will receive an MW designation. Though rare, any animal with conflicting **MW** and **HMW** results will default to the more accurate gene test result.

At PEAK, all marketed AI bulls will have a gene test result for MW.

What does the MW haplotype classification mean?

The haplotype result will be abbreviated **HMW** followed by a number to indicate the result. For genotyped animals, HMW can be utilized in mating programs to avoid carrier by carrier matings. The US genetic evaluations will include the following reporting:

Haplotype Status	Confident Result	Probable Result
Non-Carrier	HMW0	
Carrier	HMW1	HMW3
Homozygous	HMW2	HMW4

The reason for a "probable" result on 3 and 4 status animals is because it's not always possible to determine with complete certainty which piece of DNA an animal has inherited. A similar situation exists for the Holstein Cholesterol Deficiency (HCD) condition.

How is the Holstein Association USA recognizing MW?

All bulls with gene test results for **MW** will be reported as follows: **TE** for non-carriers, **MW** for heterozygous carriers and **MW2** for homozygous carriers..

Starting in February 2024, direct gene test results for MW will be labeled on Official Holstein Pedigrees, and other products where officially recognized genetic conditions are displayed.

How does PEAK handle MW results?

All PEAK bulls will have MW gene test results published on their official bull page. Bull **MW** gene test results will be used in mating programs instead of the bull MW haplotype results.



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