

# American Angus Association® Oculocutaneous Hypopigmentation (OH) Fact Sheet

**ANGUS**  
THE BUSINESS BREED

The following fact sheet was developed to respond to questions commonly asked by American Angus Association members. Additional information may be found online at [www.angus.org](http://www.angus.org).

## What is Oculocutaneous Hypopigmentation (OH)?

OH was recognized on November 2, 2015. It is a non-lethal genetic condition of beef cattle, inherited as a simple recessive. Affected calves have eyes with irises that are pale blue around the pupil with a tan periphery. Their hair coats have a slightly bleached color. While some affected calves have sensitivity to light, they are believed to be otherwise normal functionally and physiologically. The condition is largely cosmetic in nature.



## What causes OH?

OH is caused by a recessive mutation on a single cattle chromosome. Cattle that are homozygous for the mutated gene will exhibit OH.

## What is an OH carrier?

For the purpose of this response, an OH carrier is an Angus or Angus-cross cow, heifer, bull or steer that carries the recessive OH mutation in their DNA.

## Why are carriers of OH important?

Carriers of OH used in breeding programs (registered or commercial) are responsible for propagating the recessive mutation within the cattle population.

## What does an OH carrier look like?

An OH carrier looks perfectly normal; there is nothing in the way an animal looks (its phenotype) that indicates that the animal is a carrier of the OH mutation.

## If a cow has an OH calf, what does that mean?

If a cow has an OH calf, and if it is the cow's natural calf, it means that the cow is a carrier of the OH mutation and the sire of the calf is also an OH carrier.

## If a recipient cow has an OH calf, what does that mean?

If a recipient cow has an OH calf, it means only that both the donor cow and the sire of the calf are carriers of the OH mutation. It doesn't tell you anything about the OH carrier status of the recipient cow.

## If a bull sires an OH calf, what does that mean?

If a bull sires an OH calf, it means that the bull is a carrier of the OH mutation and that the dam of the calf is also an OH carrier.

## I have never had an OH calf. Does that mean my cows are non-carriers?

Not necessarily.

## What is the risk of having an OH calf if I breed an OH carrier cow to an OH carrier bull?

Every time you breed a carrier to a carrier, there is:

- A 25% risk of having an affected OH calf;
- A 50% risk of having an otherwise normal-appearing calf that carries the OH mutation;
- A 25% chance that you will have a normal-appearing, non-carrier calf.

## If I breed an OH carrier cow to an OH carrier bull and have three live calves, will the fourth calf have OH?

The risk is the same every time you breed a carrier to a carrier. There is always a 25% risk of having an affected OH calf, a 50% risk of having a carrier calf, and a 25% chance of having a non-carrier calf.

## If I breed an OH carrier cow to a non-carrier bull, what is the chance of having an OH affected calf?

Zero. You will never have an OH affected calf if you breed a carrier cow to a non-carrier bull. (excluding the possibility of a spontaneous mutation)

## If I breed an OH carrier cow to a non-carrier bull, what is the risk of having a carrier calf?

Every time you breed a carrier cow to a non-carrier bull there is:

- A 50% risk of having a normal-appearing calf that carries the OH mutation; and
- A 50% chance you will have a non-carrier calf.

## Is there a test to identify OH carriers?

Yes. A DNA test is available to determine if an animal carries the OH mutation in their DNA. The type of DNA sample required to perform the test varies from lab to lab but includes; hair root samples, blood-spot or FTA cards, whole blood in "purple-top" tubes, tissue samples from ears and semen samples.

A video on [www.angus.org](http://www.angus.org) explaining how to collect the sample can be found [here](#).

## What do I do with the confirmed non-carrier females in my herd?

If the females are tested non-carriers and they are bred to non-carrier bulls, they will never produce affected OH calves or carriers. These non-carrier females can be used throughout your breeding program with no risk of propagating the OH mutation.

### What do I do with confirmed female carriers in my herd?

You have several options:

- If you have a cow that carries the OH mutation and you want to produce calves from her; you may want to test all offspring retained for breeding; (testing not a requirement for registration)
- If you have both a registered and a commercial herd, retain your carrier cows in the commercial herd, breed to a non-carrier bull, and test any calves retained for breeding purposes;
- If you always breed your carrier cows to a non-carrier bull, you will never have an OH calf. Then, treat the resulting calves as market animals, not as breeding stock.
- Use your OH carrier cows as ET recipients. As a recipient female, she has no genetic effect on the embryo calf she raises.

### OH potential carrier report & potential carrier management tool

AAA Login users can access interactive tools to generate a report of owned animals and their Oculocutaneous Hypopigmentation (OH) status based on the OH test results received to date. From the AAA Login menu, go to the “interactive” section and click on “Potential Carrier Report AM/NH/CA/DD/M1/D2/OH” or “Potential Carrier Management Tool (PCMT).” The PCMT can identify those animals in your herd that have the most descendants in your herd and would be the most logical animal to start a testing scheme should you decide to test for a particular genetic condition. If you are not a current AAA Login user, you can sign up to create an online profile at [www.angusonline.org](http://www.angusonline.org).

### What is the AAA registration policy regarding OH?

	<b>One or both parents test OHC (confirmed carriers)</b>
<b>Heifers</b>	No test required.
<b>Bulls</b>	No test required.
<b>E.T. Calves</b>	No test required.
<b>Steers</b>	No test required.
<b>A.I. Sires that are confirmed carriers</b>	No restrictions.
<b>Definitions</b>	OHC - OH Carrier, has been tested and carries the OH mutation. OHF - OH Free, has been tested and does not carry the OH mutation. OHP – OH Potential Carrier, animal that traces to one or more confirmed tested carrier animals in its pedigree that have no intervening ancestors that have been tested free of OH.

### Testing Options

#### Submit Samples through American Angus Association/AGI

AGI partners with approved laboratories to provide testing for this genetic condition. Use [AAA Login](#) to order the test or call us at 816.383.5100 for questions. Samples are submitted to the American Angus Association and archived for future testing requests.

