

Genetic defects in sheep and goats

Genetic defects in sheep and goats can impact their health, welfare, and productivity. They can affect various body systems and be inherited simply (e.g., recessive disorder) or be influenced by many genes (polygenic). It is usually best to select against these defects.



Jaw defects (over/parrot mouth or undershot/monkey mouth) are one of the most common defects in sheep and goats. Severity varies. They can be hereditary, and the inheritance can be recessive or involve many genes. There are also environmental influences. Jaw defects can impact the animal's ability to eat, especially as they get older.

Entropion or inverted eyelids (an inward turning of the eyelid) is a heritable trait influenced by many genes. In a multi-breed sheep study, heritability estimates ranged from 0.08 to 0.21. Selective breeding should reduce the incidence.



While other factors play significant roles, the heritability of **rectal prolapse** in sheep is about 0.14. There is also a hereditary component to **vaginal prolapses**. Besides not keeping animals that prolapse, their parents or offspring should be candidates for culling.

Atresia ani, a congenital condition in which the lamb/kid has no anal opening is often hereditary and linked to a single autosomal (not X or Y) recessive gene. If both parents carry the gene, there is a 25 percent chance the offspring will have atresia ani.



There is a greater chance of kids being **intersex** (hermaphrodite) when two polled (naturally hornless) goats are bred. A recessive gene, often associated with the polled gene, is linked to intersexuality. Intersex goats are chromosomally female but have more testicle-like gonads.

First observed in the 1970s, **spider lamb syndrome** (ovine hereditary chondrodysplasia) is a skeletal disorder causing deformities in lambs. It is the result of a genetic mutation and is a homozygous recessive disorder.



Extra or **supernumerary teats** are considered a defect in most breeds of goats and sheep. The trait is polygenic, meaning it is affected by many different genes.

Heritability varies but is moderate to high; thus, easy to select against. Alexander Graham Bell incorrectly hypothesized that sheep with extra nibbles gave birth to more lambs. Nor do extra teats lead to a greater milk yield.



Cryptorchidism is when one or both testicles fail to descend into the scrotum. Inheritance is most likely due to an autosomal sex-linked gene. Cryptorchid animals should be removed from the breeding flock/herd.



A **scrotal hernia** is when the abdominal organs protrude through the inguinal ring into the scrotum. The condition can be congenital or acquired and is considered to be a genetic autosomal recessive disorder.