

# CONGENITAL DISQUALIFIERS

## PART I - CROOKED TAILS

*This article is one of a series aimed at providing information regarding breed standards and the importance of screening alpacas for congenital disqualifiers prior to registration.*

*Firstly – what does congenital mean. Congenital refers to a trait that an animal is born with (existing at the time of birth). The CLAA rules of registration require that congenital defects be evaluated at birth and alpaca and llamas exhibiting one or more of the listed congenital disqualifiers be denied registration.*

*It is important to remember at this point however, that some observed defects are not necessarily genetically programmed and may have resulted from problems encountered during foetal development in utero (e.g. flexural limb deformity). Also, those defects that are genetically programmed in the foetus may not have originated from “heritable” defects. Heritable defects are genetically programmed in that animal and can be passed on from the affected animal – they may or may not however, have been inherited from sire and dam.*

*There are two options for the origin of a genetic defects occurring in a newborn:*

*“there may be a correlation between malformations of the tail and other vertebra, and whilst a malformed tail may be no more than unattractive, malformation of cervical, thoracic, lumbar or sacral vertebra (as observed in the offspring of the sire of the study) may cause functional, physical and neurological deficits”*

- 1) a point mutation in that animal but not pre-existing in the parents and*
- 2) a genetic defect carried by one or both parents and transmitted to the offspring.*

The subject of this article is crooked tails. It is the first article in an ongoing series on how to recognise congenital disqualifiers. What to look for and why.

The tail vertebra belongs to the spinal column and the spine is part of the skeleton. Therefore deformities of the tail vertebrae are part of skeletal defects. They can be various in shape and depend on the defect in the genotype (whether the cause of a mutation or caused by hereditary factors). The tail may be missing, maybe too short, may have one or more bends (kinks) in different variations or hooks and crooks. Sometimes there are too many or too few vertebrae.

When the deformity is limited to the tail then it generally has no influence on the alpaca’s or llama’s life. However, when that animal is bred the “small defect” can become much more serious for the offspring. Not only in tails but also other part of the spinal column. In an Australian study nine alpaca offspring aged from 12 – 18 months were radiographed. They were all conceived on the one farm to the same sire that had a visibly abnormal tail. Over the course of one year 30 of his offspring were born. Thirteen had normal tails, five had abnormally short tails and 12 had abnormally deviated tails. Importantly these twelve showed five different types of vertebral malformation – one a potentially life threatening dorsal subluxation. In 12 of these cria (11 abnormal tails, one normal tail) six also had shorter than normal ears. One was also diagnosed with an ectopic ureter. Six of the cria went on to have cria of their own and produced 4 cria with short tails, three of which also had short ears. Although this is admittedly a small study inheritance of vertebral malformations has been confirmed for many other species and, for some species as well, congenital tail defects have also been linked to defects in organ systems. This link between deformities in organ systems and crooked tails in parents and relatives of both parents has been proven in dogs, cats, pigs and mice.

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## CROOKED TAILS Continued....

The Australian authors conclude their study by saying “we consider that there may be a correlation between malformations of the tail and other vertebra, and whilst a malformed tail may be no more than unattractive, malformation of cervical, thoracic, lumbar or sacral vertebra (as observed in the offspring of the sire of the study) may cause functional, physical and neurological deficits”.

In short, based on available evidence from other species and limited evidence from alpaca studies congenital permanent deviations of the tail is more than a cosmetic issue. It is likely a heritable condition that can cause deformities in the higher vertebrae which may be life threatening or at the very least cause functional problems. This is particularly important in breeding females who need to maintain conformation and back strength through multiple pregnancies.

Simply, a slight little hook in a tail you may see in a new born cria today may translate into a larger more serious vertebral malformation if that animal is allowed to enter the breeding population. This is why alpacas and llamas that show tail deviations from birth are prohibited from being registered.

### **So, how do you identify crooked tails?**

Take the tail in hand (gently) and feel it all the way down to the tip. Ordinarily the tail will be straight – in a crooked tail you will feel the kink or curve or hook or crook (it could be slight or it could be quite pronounced) anywhere from the base to the tip. Although Murray Fowler in “Medicine and Surgery of South American Camelids” states that “it is important to understand that a crooked tail has as much chance of being acquired through an injury as it does through heredity” if the examination is done very early in a cria’s life the chance of a deviation being the result of trauma or accident is slight.

The only way to make a more accurate diagnosis however is x-ray. The x-ray can identify break lines that have healed, it can also show extra or malformed vertebra that would indicate a disqualifying congenital defect. As a general rule, but not a hard and fast one, that may give some relief when waiting to book an x-ray – if the tail can be manually straightened by slight (and that’s worth emphasising) pressure the deviation was probably caused by trauma.