Fragile Foal Syndrome (FFS1)

FFS1 is an inherited genetic disorder that prevents the normal formation of collagen. It affects males and females equally. Affected foals have hyperextensible (lax) limb joints and abnormally fragile skin which tears easily.

Foals need to inherit a copy of the mutation from both their parents to be affected by the disorder.

The disease is obvious at birth and newborn foals are immediately euthanised as the condition is untreatable.

FFS1 is also suspected to cause early embryonic loss and may also manifest as poor fertility.

The DNA mutation causing FFS1 was originally identified in 2013. Horses with only one copy of the mutation are not affected.

This disorder was originally called 'Warmblood Fragile Foal Syndrome' because it occurred most frequently in Warmbloods. Between 11%-18% of Warmbloods are carriers. However, it is now known that many breeds carry this mutation (Reiter et al. 2021). The FFS1 mutation has been found at a lower frequency of 2.4% (17 of 716) in Thoroughbreds (Bellone et al. 2019).

A genetic test is available to detect this mutation, which allows breeders and owners to identify carriers and make informed breeding decisions.

Testing is strongly encouraged in breeding stock, if not already undertaken.