

# ACRAL MUTILATION SYNDROME (AMS) IN ENGLISH SPRINGER SPANIELS

Acral Mutilation Syndrome (AMS) is an inherited neurological disorder that causes abnormal development and slow degeneration of the pathways that carry sensory messages to and from the brain along the spinal cord through to the peripheral nerves in the feet. Dogs affected by AMS gradually lose feeling in their toes and feet (sometimes the whole of the leg may be involved). Clinical signs can range initially from mild swelling, discomfort and pain, to raw open wounds, abscess and sometimes a reluctance to move.

As the loss of sensation progresses, dogs affected by this devastating condition often chew their toes, feet, paw pads and limbs, causing extensive mutilation and damage, sometimes even to the point of self-amputation. There is no known cure for AMS.

## Cause

AMS is a genetic condition caused by an autosomal recessive mutation. In order to produce an affected dog, both parents must carry the defective mutation. Breeds known to be affected by this condition are French Spaniel, German Short Haired Pointer, Pointer, Cocker Spaniel and English Springer Spaniel.

## Symptoms

The first signs can usually be observed in young dogs between 3 to 12 months of age.

Symptoms seen include:

- › Excessive licking and/or chewing of feet/legs
- › Abscess & raw wounds
- › Effusion (Swelling)
- › Lameness
- › Inflammation of joints
- › Behavioural changes
- › Loss of co-ordination
- › Disorientation

One can see ulceration on feet and legs, however the dog feels no pain and will often continue to walk normally (putting full weight on their damaged limbs) without showing any sign of discomfort.



## Treatment

The prognosis is poor in affected dogs. Vets may provide treatment to try and limit further self mutilation through the use of bandages, Elizabethan collar and sometimes sedation. It is also essential to provide a stress-free living environment for affected dogs, keeping water and food bowls within easy reach, avoiding exercise and physical activity, noise or any kind of commotion. All of this will not, however, affect the prognosis and the condition will worsen, with euthanasia the usual outcome at a young age.

## Prevention

### [A simple cheek swab DNA test is available for AMS](#)

AMS is a completely preventable disease, thanks to the availability of a DNA test that will confirm the genetic status of each dog as either:

Clear: They neither have AMS, nor can they pass on the mutant gene to any offspring;

Carrier: They do not have AMS themselves, but they can pass on the mutant gene to their offspring;

Affected: They are clinically affected with AMS and would always pass on the mutant gene.

To avoid the risk of producing affected puppies, ESS used for breeding should be DNA tested for AMS and at least one parent confirmed as genetically Clear.

## DNA Test Procedure

- The AMS DNA test is available in the UK from [Animal DNA Diagnostics](#) and the [Animal Health Trust](#). Cheek swab test kits can be ordered online from the websites of these laboratories.
- DNA samples can be collected from dogs by owners themselves, or by a Vet if an owner would like the identity of the sample to be verified.
- Results will normally be available 1 - 2 weeks after receipt of the sample.
- Owners will normally be informed of the results via email.

## Kennel Club Recording of AMS DNA Test Results

- An official Kennel Club Breed Scheme is in place, whereby AMS DNA test results notified to the KC will be added to the dog's registration details and will appear on any new registration certificate issued for the dog and on the registration certificates of any future progeny of the dog. The results will be published in the Breed Records Supplement and appear on the Health Test Results Finder on the Kennel Club website.
- As part of the official Scheme, results of AMS tests carried out at Animal DNA Diagnostics and the Animal Health Trust will automatically be forwarded to the KC for recording and publication.
- To find test results for individual dogs click on [Health Test Results Finder](#).
- To find a list of AMS test results click on [DNA Test Results Lists](#).

**NOTE:** The AMS test is also available from [Antagene](#) laboratory in France. This laboratory requires the sample identity to be verified by a Vet. Please also note that DNA tests carried out at Antagene will only be recorded by the KC if the results are notified to them directly by the owner.

If any ESS owner and/or breeder needs help or further information relating to AMS, we would be happy to hear from them. We would also be grateful if owners would contact us by phone or email to report a diagnosis of AMS, or report it online at

[www.englishspringerhealth.org.uk/health-survey/report-a-health-condition](http://www.englishspringerhealth.org.uk/health-survey/report-a-health-condition).

For further information or advice about AMS, please contact the

[ESS Breed Clubs Health Co-ordinators](#).

\* A guide to Genetic Inheritance can be found on the [ESS Health Website](#).