

African Horse Sickness – Frequently Asked Questions

- **What is African Horse Sickness (AHS)?**

AHS is a non-contagious, insect-borne, highly fatal viral disease caused by the African Horse Sickness virus (AHSV), an Orbivirus that has nine different strains. It is one of the most devastating equine diseases on the planet.
- **Does AHS affect all *equidae*?**

Yes, AHS affects horses, donkeys, mules and zebras. Horses are the most susceptible species and up to 90 percent of infected horses die. Mules have a mortality rate of 50-70 percent and donkeys 10 percent. Donkeys are considerably less susceptible and generally show mild to no clinical signs of the disease. The virus can also infect zebra but they do not usually display signs of the disease.
- **Why is AHS now seen as a potential threat to the UK?**

AHS is an ‘exotic’ disease that is now viewed as a potential threat to the UK’s £4 billion equine industry for a variety of reasons including increased global travel, climate change and the outbreak and spread of Bluetongue in the UK for the first time in 2007.

The outbreak of Bluetongue in the UK has caused great concern due to the Bluetongue virus (BTV) and AHSV being closely related and transmitted by the same species of midge. The Bluetongue outbreak serves as a warning as it was able to survive and spread therefore, potentially so could the AHSV should it enter the UK. If an outbreak of AHS occurred in the UK, the results could be devastating, as our horses have no natural immunity to the virus.

- **What is Bluetongue?**

The BTV also belongs to the Orbivirus group and affects ruminants, in particular sheep and cattle. The BTV is carried and transmitted by certain species of midges from the *Culicoides* family.
- **Does Bluetongue affect horses?**

No, Bluetongue does not affect horses.
- **How did the Bluetongue virus enter the UK?**

Bluetongue is most frequently associated with Africa and parts of Australia and the USA. During the Summer/Autumn of 2006, outbreaks of Bluetongue were reported in The Netherlands, Belgium, Luxembourg, Western Germany and in parts of North Eastern France. In 2007, tens of thousands of Bluetongue cases were reported across mainland Europe. The UK outbreak of Bluetongue probably occurred after infected midges were blown into the country by winds from mainland Europe. Scientists have not yet confirmed how Bluetongue managed to spread from Africa to mainland Europe.

- **How is AHS spread?**

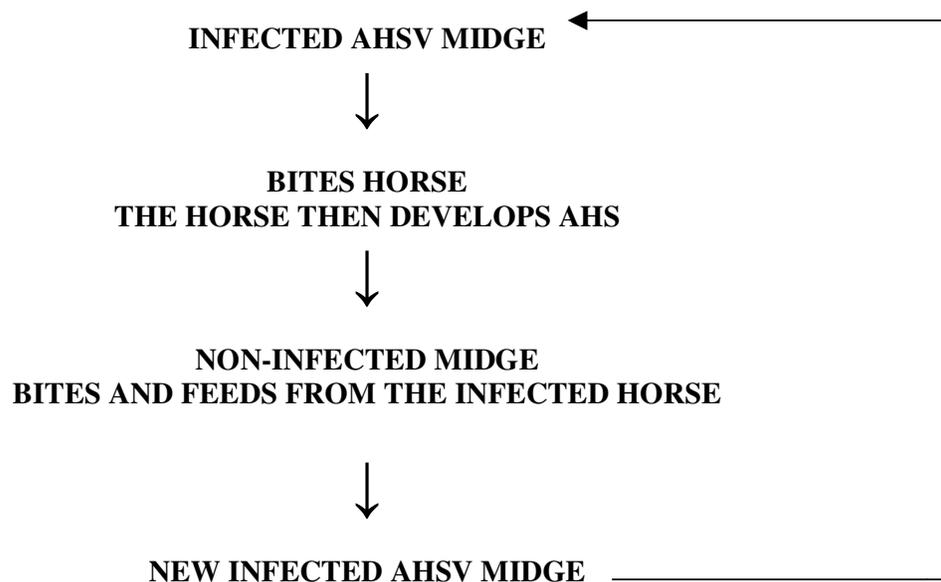
The AHSV, like the BTV, is carried and transmitted by certain species of midges from the *Culicoides* family. AHS is transmitted to a horse by the bite of an infected *Culicoides* midge.



Culicoides midge – Photograph courtesy Institute for Animal Health, Pirbright.

Once the AHSV has been transmitted to a horse, the horse can remain infected for several weeks (infected animals do not remain carriers of the virus). Therefore, any non-infected *Culicoides* midge that bites and feeds from the blood of the infected horse is highly likely to become infected with the AHSV. This new-infected midge may then bite another horse and continue the spread of disease.

AHSV can also be transmitted between horses by infected blood e.g. contaminated hypodermic needles.



- **Can other horses catch AHS from an infected horse?**
No, the disease is **not directly contagious between horses**, even when they are kept in close contact.
- **Can humans catch AHS?**
No, AHS does not affect humans.
- **Can the disease be spread from infected horses to other species of animals?**
No, AHS is not directly contagious to any other species of animal. However, it has been reported that dogs can be severely infected with AHS usually after eating infected horsemeat.
- **Are any other animals affected by AHS?**
Yes, rhinos and elephants can also be infected with AHS but are highly resistant to the virus and rarely show any clinical signs of the disease.
- **Is it correct that certain species of *Culicoides* midges are already present in the UK?**
Yes, *Culicoides* are the most common midges in the UK, and in susceptible horses are responsible for causing the allergic reaction, Sweet Itch. However these are totally separate diseases and there are no links between the two.
- **If there are already midges in the UK, why has there not been an outbreak of AHS already?**
Although there are *Culicoides* midges present in the UK the AHSV is not present in the country. It requires an infected midge carrying the virus to cause an outbreak.
- **Is it known which *Culicoides* midge are able to carry and transmit AHS?**
In Africa, there are two species of *Culicoides* midge that have been shown to play an important role in the spread of AHSV; *C. imicola* and *C. bolitinos*.

It is clear from the Bluetongue outbreak that midges exist in northern Europe, including the UK, that are able to transmit Orbiviruses. The specific identity of all of these has not been confirmed.

Increased temperatures enable biting midges to improve the efficiency with which they are able to transmit the virus. Virus replication inside the midges is dependent upon the temperature. In temperatures of 25°C and above, the virus in the midge can be transmitted within as little as three days, whereas in cooler temperatures (around 15°C), it can take up to 28 days.

- **In which countries have outbreaks of AHS occurred?**

In Eastern and central Africa, AHS is endemic. The disease also appears in the north-east area of South Africa (but is not endemic), where its spread southwards is dependant upon favourable climatic conditions for the breeding of the midges. In endemic areas, different strains of AHS may be in existence at the same time although one strain is usually dominant throughout a particular season.

In the past forty years outbreaks of AHS outside of Africa, have occurred in Cyprus, the Middle East, Israel, India, Pakistan, Spain (mid-1960s and 1987-90) and Portugal (1987-90).

- **How would *Culicoides* midges infected with AHS enter the UK?**

There are a number of different routes that the AHSV may potentially enter the UK. The most likely route is by *Culicoides* midges infected with AHSV entering via prevailing winds similar to BTV or an infected midge gaining passage on, for example, an aeroplane.

- **Are there different forms of the disease?**

Yes, there are three main different forms of AHS; the lung form (acute form), the heart (cardiac) form and the mixed form.

Horsesickness fever is a very mild form of AHS and is rarely clinically diagnosed. This form is most often seen in donkeys and zebras, which have resistance to the development of full clinical disease.

- **Once a horse has been infected with AHS how long does it take for clinical signs to show?**

This will vary depending upon the form of disease:

- The **acute form** has a short incubation period of 3-5 days.
- The **cardiac form** has an incubation period of 5-14 days.
- The **mixed form** has an incubation period of 5-7 days.
- **Horsesickness fever** has an incubation period of 5-9 days.

- **What are the signs of AHS?**

Clinical signs will vary according to the form of the disease:

ACUTE FORM:

- High, rapid rise in temperature (up to 41°C)
- Severe difficulty in breathing with mouth open, head hanging and the nostrils dilated
- Respiration rate may exceed 50 breaths per minute
- Profuse sweating
- Presence of abdominal heave lines due to forced expiration
- Profuse, frothy discharge from the nostrils
- Redness of conjunctivae
- Coughing

- Within a week 90 percent of horses will die. Once the horse is showing signs of respiratory distress, death usually occurs within 30 minutes to a few hours.



Photograph courtesy Institute for Animal Health, Pirbright

CARDIAC FORM:

- Fever (39-41°C)
- Swelling of eyelids, facial tissues, neck and shoulders
- In severe cases the entire head swells
- Loss of ability to swallow
- Respiratory distress shown due to the increased swelling
- Colic symptoms
- Terminal signs include bleeding in the membranes of the mouth and eyes
- Once the horse shows signs of fever, death usually occurs 4-8 days later
- Lower death rate (50 percent)

MIXED FORM:

- Symptoms of both the acute and cardiac form – initially mild respiratory signs are exhibited followed by the typical swellings of the cardiac form
- Death usually occurs within 3 to 6 days

HORSESICKNESS FEVER

- Over a period of 4 to 5 days the body temperature gradually rises to 40°C, lasting 1 to 6 days, followed by a drop to normal temperature and recovery
- Partial loss of appetite
- Accumulation of fluid around the conjunctivae
- Slightly laboured breathing
- Increased heart rate

The above clinical signs only last for a short period of time.

- **Can AHS be treated?**
There is no effective treatment for AHS.

- **Is AHS a notifiable disease?**

Yes, AHS is listed as notifiable under the Infectious Diseases of Horse Order 1987 and the Specified Diseases (Notification and Slaughter) Order 1992 and by the World Organisation for Animal Health (OIE).

- **What should I do if I suspect my horse has AHS?**

If you suspect your horse has AHS **contact your veterinary surgeon immediately**. If your vet suspects it is AHS the case must be reported to the Department of Environment Food and Rural Affairs (Defra) who are responsible for implementing control regulations. Blood tests taken from the horse will be analysed by the Institute for Animal Health, Pirbright, to establish if the horse has AHS. If the tests are positive, the laboratory will further investigate what strain is involved in the outbreak.

- **Will my horse have to be put down if infected with AHS?**

Most horses in the UK developing AHS would either quickly die or need to be euthanased on humane grounds. Additionally under the current European Directive for the control of AHS, equidae affected with AHS are usually euthanased to prevent the spread of the virus.

The legislation is however under review to establish if alternative methods of strict isolation of an infected animal might be feasible in the UK rather than immediate euthanasia.

- **Will all horses on infected premises have to be euthanased?**

No, only affected horses confirmed with AHS will have to be euthanased as AHS is not directly contagious. However, all horses on the yard will be closely monitored. It is essential that any suspect horses are reported immediately to a veterinary surgeon.

- **What are the protection and surveillance zones?**

Once a confirmed case of AHS has been reported, the authorities will immediately establish protection and surveillance zones. The **protection zone** would cover a 100 kilometre radius around the infected premises and a **surveillance zone** of a further 50 kilometres would be enforced. The horses that are included within the zones will be subject to close monitoring and as discussed only confirmed cases have to be euthanased.

- **Why are the distances so great for the protection and surveillance zones?**

Research has shown that the midge vectors of BTV and AHSV are able to travel on the wind over many miles and, in laboratory conditions, have been found to fly for up to 10 hours at a time. This means that an infected midge has the potential to spread the disease very quickly over very large geographical areas.

- **How long will the protection and surveillance zones be enforced for?**

Both zones would remain in force for at least 12 months after a confirmed outbreak. These regulations would affect every aspect of the horse industry from eventing to racing, showing, riding club competitions and leisure riders for example.

- **Is there a vaccination available?**

A live vaccine against AHS exists and is used in many parts of Africa. However, it is not licensed in Europe as the vaccine is based on a live AHS virus and therefore carries a risk that it could revert to virulence – actually causing the disease it is supposed to prevent. There is also the potential that the vaccine virus could infect midges and the midges transmit it on to horses. This risk is small and the chance is considered worth taking in Africa where the disease is already endemic.

Trials of a new safe inactivated vaccine are currently taking place in Africa which potentially have great usefulness in Europe in the event of an outbreak.

- **Will insurance companies cover for AHS?**

At present, insurance companies do not have policies which cover the ‘exotic’ diseases including AHS. Representatives from the insurance industry have attended meetings of the AHS Working Group and discussions are ongoing.

- **What can I do to help prevent my horse from being infected with AHS?**

If an outbreak of AHS occurs in the UK, horse owners can take steps to minimise the risk to their horse(s). Hopefully, by that time, a vaccine will be available but it will also be vital to reduce horses exposure to midges. This can be achieved in a number of ways:

- Cleaning up areas around leaky taps with damp mud, cattle troughs and muck heaps where the *Culicoides* midge breeds.
- Site muck heaps away from stables and/or have the muck removed on a regular basis.
- Stabling horses at peak times of midge activity (at dusk and dawn) and screening the stables with pyrethroid protected mesh.
- Using sweet itch rugs, which cover the whole body and head of the horse.
- Using fly repellents in accordance with the manufacturer’s instructions.
- Ensure grazing is well drained and avoid marshy, boggy and heavy clay pastures and areas of rotting vegetation or leaves, which are a haven for the biting midges.

- **In an outbreak, will horses be able to be exported or competed abroad?**

No, the international trade of UK horses would cease immediately with no horses being sold for export or able to participate in equestrian events in other countries.

- **Why do horses in South Africa not have to be euthanased if they are infected with AHS?**

AHS is **endemic** to South Africa where a strategic vaccination programme has been implemented to control the disease. In the UK, where a disease outbreak has not yet occurred, no horses have natural immunity and no vaccination is yet available. An outbreak has the potential to cause an **epidemic** and in a naïve population the devastation to the equine population could be huge. Therefore, it is essential to eliminate a source of infection quickly to prevent the disease from spreading.

- **At what times of the year are midges most active?**

The prevalence of AHS is usually a seasonal occurrence but will be significantly influenced by climatic and other conditions which favour the breeding of the *Culicoides* midges. In the UK, midges are likely to be active from April to November (from when it first gets warm until there is a frost). In Africa, the disease is reported to disappear abruptly following a frost.

- **What is being done to help prevent this disease entering the UK?**

There is already legislation in place regarding the import of horses to this country. Only horses from countries or zones recognised as AHS-free can be imported to the UK. Horses imported from the AHS-free zone in South Africa must be tested for the disease before being allowed into the country.

As well as educating horse owners and breed societies, and producing (in conjunction with The Horse Trust) advice leaflets, The British Horse Society is a member of the **African Horse Sickness Working Group**. This Group was established to identify issues where lobbying and campaigning to government may benefit UK horses and educating members of the equine industry and horse owners.

All horse owners should make themselves aware of AHS and its clinical signs, so that should it appear here, it can be spotted quickly and be promptly controlled. Rapid identification is the key to minimising the impact of AHS and could prevent a single case from becoming an epidemic.

- **Where can I find further information on AHS?**

- For further information or to request a copy of the Guide to African Horse Sickness please see the welfare pages of the BHS website, www.bhs.org.uk to download a leaflet or contact welfare@bhs.org.uk

- Animal Health Trust:
<http://www.aht.org.uk>

- World Organisation for Animal Health:
<http://www.oie.int>

- The Horse Trust:
<http://www.horsetrust.org.uk>

- Defra Disease Factsheet:
African Horse Sickness available at:
<http://www.defra.gov.uk/animalh/diseases/notifiable/africanhorse/index.htm>
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