

SYCAMORE-RELATED ATYPICAL MYOPATHY IN DONKEYS

What is sycamore-related atypical myopathy?

Sycamore-related atypical myopathy (AM) is an often fatal muscle disease seen in horses and donkeys. Atypical myopathy is present in the UK, northern Europe, and North America.

What causes sycamore-related atypical myopathy?

- As the name suggests, in Europe, the cause is a toxin (harmful substance) found in seeds of the sycamore tree (*Acer pseudoplatanus*).
- In the USA, seeds from the box elder (*Acer negundo*) appear to cause atypical myopathy.
- The toxin 'hypoglycin A' destroys muscles of the skeletal system, respiratory system and heart.
- The damage caused to muscles leads to severe illness and can be fatal.
- In recent years there has been a sharp increase in UK cases, thought to be due to extreme weather changes.
- The major risk is lots of sycamore seeds or leaves on the ground, with a lack of suitable forage to eat.
- Elderly, young, ill, or recovering animals are more prone to atypical myopathy.



Sycamore 'helicopter' seeds



Sycamore leaf

What are the signs of sycamore-related atypical myopathy?

Relatively few donkeys have been diagnosed with atypical myopathy. As such, it is not clear whether they show the same signs as horses. For now, we must rely on the signs seen in horses.

SIGNS OF SYCAMORE-RELATED ATYPICAL MYOPATHY IN HORSES MAY INCLUDE:

- depression or lethargy
- muscle weakness or tremors
- inability to stand
- loss of appetite
- increased breathing rate
- difficulty breathing
- choking
- sweating
- colic
- low head carriage
- fast or irregular heartbeat
- dark red urine.

How is sycamore-related atypical myopathy treated?

ALERT

Call your vet immediately if you think your donkey is unwell. Rapid diagnosis and treatment are vital to give your donkey the best chance of survival.

- Your vet will examine your donkey and take a blood sample.
- Your donkey will almost certainly need to go to an equine hospital for intensive care, which will be likely to include intravenous fluid therapy (a drip).
- If your donkey goes to hospital, their companion must go too. Separation could lead to hyperlipaemia, a potentially fatal condition, in either donkey. See *factsheet Hyperlipaemia in donkeys for more information*.

What is the likely outcome?

- The condition has a high death rate.
- In the past, around 80% of affected horses died or were euthanised.
- With quicker diagnosis and treatment, the death rate has dropped to around 60%.
- The time between onset of clinical signs and death can vary from 12 hours up to ten days.
- Findings show that horses who survive the first five days are more likely to make a full recovery.
- Donkeys treated in a hospital are likely to have the best outcome.

How can atypical myopathy be prevented?

- Make sure your donkey has adequate food sources available. See *factsheet Feeding donkeys for more information*.
- Fence off sycamore trees and be aware that seeds may travel further than expected.
- Inspect fields daily and remove seeds or leaves.
- Keep water sources clean and fence off ponds or streams that could contain seeds. Watercourses and runoff water can carry sycamore seeds far from the tree.
- Remove young sycamore tree saplings.
- Check your donkey at least twice daily and contact your vet at once if you see any abnormal signs.
- Be extra vigilant in:
 - autumn, when you may find seeds on your pasture even if there is no sycamore tree on the land
 - spring, when seedlings start to germinate
 - very wet conditions, which cause seeds to release the toxin into surrounding land
 - high winds, which may carry sycamore seeds onto your land
 - other extreme weather conditions.
- Check your donkey at least twice a day.
- Make sure anyone caring for your donkey is aware of the dangers and signs.
- If your donkey shows signs of atypical myopathy, remove all donkeys from the grazing straight away.

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How do I identify sycamore trees?

- It can sometimes be difficult to identify sycamore trees. They are members of the *Acer* group of trees and shrubs, which has several similar species with distinctive helicopter-like seeds.
- Plane trees look like sycamore but are members of the *Platanus* group and have different seeds.
- The toxin is not present in Norway maple, field maple, or plane trees. There may be variable amounts of toxin in other tree species within the *Acer* group.
- There are subtle differences in leaf and seed shape that you can use for identification.

TREE TYPE	SYCAMORE	PLANE	NORWAY MAPLE	FIELD MAPLE
Leaf shape	Slightly rounded lobes, serrated	Pointed lobes	Sharp, pointed lobes	Sharp, pointed lobes
Seed pods	Tight V-shape, helicopter-like	Round seed balls hanging from stem	Wide V-shape, helicopter-like	Horizontal, not V-shaped
Flowers	Small green-yellow flowers in spring, hanging in long dangling clusters	Large and spherical	Small clusters, do not hang	Small clusters, do not hang



Sycamore



Plane tree



Norway maple



Field maple

If you have any doubts, the Royal Veterinary College will test seeds, seedlings, or leaves to find out whether they are a danger to your donkey. See online www.rvc.ac.uk/research/laboratories/comparative-neuromuscular-diseases-laboratory/diagnostic-services#panel-atypical-myopathy-testing-for-vets-and-owners for more information.



See factsheets *Poisonous plants and trees* and *Safe trees and shrubs* for more information.