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HENDRA – YOUR QUESTIONS ANSWERED

WHAT IS HENDRA VIRUS

Hendra is a very serious virus that was first discovered in September 1994 during an outbreak that resulted in the deaths of twenty horses and a trainer in the Brisbane suburb of Hendra, Queensland.

To date, there have been seven confirmed cases of Hendra infection in humans, and four people have died after being infected with the Hendra virus. This fact together with an acute case fatality rate of 75% in horses, plus Hendra's ability to infect multiple animal species make Hendra virus one of the most lethal viral diseases in the world. Sporadic outbreaks of Hendra disease have been reported throughout Queensland and New South Wales as far south as Kempsey and as far west as Chinchilla. In January 2013, Hendra virus was detected in a flying fox in South Australia.

To date, there have been 52 known outbreaks in horses across two states, killing close to 100 horses. It is possible that other deaths due to Hendra may have occurred and been misdiagnosed or not recorded.

HOW IS HENDRA SPREAD?

Hendra virus occurs naturally in all four mainland species of fruit bats, and can pass to horses when the bats shed the virus in urine, saliva, faeces and birthing fluids.

The virus is zoonotic, meaning that it can then pass from an infected horse to humans through contact with the horse's saliva, blood, urine, mucus or faeces. It is very important to note that horses can be infectious for up to 72 hours prior to showing any clinical signs.

WHAT ARE THE SYMPTOMS?

One of the dangers with Hendra is that symptoms can initially be so vague or mild that cases have been mistaken for other conditions, such as colic and snakebite. By the time you realise you are dealing with a Hendra case, human exposure may have already occurred.

If you have an unvaccinated horse that displays any of the symptoms listed below, always keep your own safety in mind. Contact your veterinarian immediately, isolate the horse, use personal protective equipment (PPE) including a face mask, goggles and gloves, and always remember to wash your hands thoroughly with soap and water after handling any sick horse.

Common clinical signs in horses include any one or combination of the following:

- Acute onset of illness
- Increased body temperature
- Increased heart rate
- Discomfort or weight shifting
- Depression
- Rapid deterioration

HOW CAN I REDUCE THE RISK OF MY HORSE CONTRACTING HENDRA?

Vaccinating your horse with the Hendra vaccine is regarded by veterinarians, as well as by government biosecurity, workplace health and safety, and health authorities, as the single most effective way of reducing the risk of infection, and therefore preventing your horse from dying from Hendra disease. Talk to your veterinarian now about vaccinating your horse.

Additional measures include:

- Removing horse feed and water containers from under trees. If possible, place feed and water containers under a shelter.
- Removing your horses from paddocks where flowering or fruiting trees may be attracting flying foxes. Return the horses only after the trees have stopped flowering or fruiting and the flying foxes have gone. If the horses cannot be removed from the paddock, consider fencing (temporary or permanent) to restrict access to trees. Clean up any fruit debris underneath the trees before returning the horses. If it is not possible to remove your horses from paddocks for long periods, try to temporarily remove your horses during times of peak flying fox activity (usually at dusk and during the night).
- Cleaning and disinfecting gear exposed to any body fluids from horses before using it on another horse. This includes items like halters, lead ropes and twitches. Talk to your veterinarian about which cleaning agents and disinfectants to use.
- When cleaning contaminated equipment, always wear gloves, cover any cuts or grazes and wash your hands thoroughly afterwards.
- If your horse becomes sick, isolate it from other horses, other animals and people until a veterinarian's opinion is obtained.
- Always handling healthy horses before handling sick horses. Only handle sick horses after taking appropriate precautions.
- Practise good biosecurity (animal disease control). Do not travel with, work on or take sick horses to other properties or equestrian events.
- Do not allow visiting horse practitioners (e.g. farriers) to work on sick horses.
- Seeking veterinary advice before bringing any sick horse onto your property. Always remember that fruit bats have been known to travel up to 100 km from their colony at night to feed, so you might not be aware of bat activity on your property.

THE HENDRA VACCINE (Equivac HeV)

What is the Equivac HeV vaccine?

The Equivac HeV vaccine is a 1ml vaccine produced by Zoetis (formerly Pfizer Animal Health) that aids in the prevention of Hendra infection in healthy horses from four months of age. Horses will initially be vaccinated with two doses, 21 to 42 days apart, with protective immunity normally occurring 21 days after the second dose.

The vaccine contains a non-infectious protein component from the outer surface of the virus, plus what is known as an adjuvant. The Equivac HeV vaccine is registered for use under Permit by the Australian Government Veterinary Medicines Authority (APVMA).

Development and rigorous testing of the vaccine has been the result of many years of cutting edge scientific research and collaborative efforts between leading scientists in the United States, the CSIRO Australian Animal Health Laboratory, and Zoetis. The vaccine's development has received international and Australian scientific accolades.

How does the vaccine work?

The vaccine stimulates the immune system to produce protective antibodies and to recognise a future challenge with the virus. If the horse is subsequently exposed to Hendra, the antibodies will bind with and neutralise the viral particles, preventing them from establishing active infection in the horse. The viral particles bound to the antibody are then further eliminated by the immune system.

How effective is the vaccine?

Clinical trials have shown complete protection when vaccinated horses were exposed to a lethal dose of Hendra virus, much higher than levels of exposure which would occur under natural circumstances.

All vaccinated horses were protected from disease, and there was no evidence that infection had been established or that virus was shed from these horses. The trials show that the vaccine will be extremely effective in the prevention of Hendra disease in horses and in the prevention of Hendra transmission from horse to horse, and from horse to human.

How do I know if my horse should be vaccinated?

You should discuss the suitability of vaccination of your horse with your veterinarian. From a public health and equine health point of view, it is strongly recommended that horses are vaccinated against Hendra in Queensland and New South Wales, where there have been previous outbreaks.

Horse owners in other areas need to take into account the movement of their horse, bat population density, and the interaction of the two species when deciding whether they should vaccinate.

Is my horse guaranteed protection against Hendra if I choose to vaccinate?

As with all vaccinations for diseases in both humans and animals, protection cannot be guaranteed by vaccination, however clinical trial work to date has shown complete protection in vaccinated horses. An animal's ability to respond to vaccination can vary and it is often reduced when the animal is stressed or unwell, or its immune system is compromised.

Vigilance is still important. Vaccination is not a replacement for good biosecurity practices including hand hygiene, minimisation of contact with the horse's bodily fluids, and extreme caution when handling sick horses.

As of early 2015, Zoetis has released an Equivac Assurance program for all horse owners. Equivac HeV, Equivac T and Equivac 2in1 are all highly effective and safe vaccines. Equivac Assurance guarantees that in the highly unlikely event that your horse does become infected with either Tetanus or Hendra after receiving these vet administered vaccines, Zoetis will contribute up to \$5,000 to assist with treatment and other associated costs. This means that you as a horse owner can now vaccinate against these deadly diseases with added confidence.

How much will it cost to vaccinate my horse?

Pricing will vary between veterinarians and will depend on the number of horses being vaccinated, and the location. On average, the cost of the full course of vaccinations for the first year of protection is less than a dollar per day, and around 50c per day in subsequent years. This is roughly equivalent to the cost of two shoeing.

How is the vaccine administered?

The vaccine is administered via intramuscular injection into the side of the neck. Two 1ml doses must be given between 21 and 42 days apart to complete the primary course. Periodic boosters will then be administered. Currently, these doses are required at six monthly intervals.

What is the duration of immunity?

The duration of protective immunity has been proven to be a minimum of six months after the primary course, at which point the first booster is administered. Research is ongoing to assess immunity at twelve months. Booster injections will need to be given either every six months, or annually depending on the outcome of this research. The decision will be made by the APVMA.

Does my horse need to be microchipped?

Yes, it is a requirement that all vaccinated horses are microchipped, to ensure correct identification on the vaccine registry. If your horse is already microchipped, it will not require a second chip.

Why can't I administer the vaccine myself?

Under special permit conditions imposed by the APVMA, the Equivac HeV vaccine must only be administered by accredited veterinarians. This is to ensure that the vaccine is handled and stored correctly, that only healthy horses are vaccinated, and that the requirements of the registry are upheld. Due to the horse and human health benefits of this vaccine, and the importance of maintaining the integrity of the registry, Equivac HeV is unlikely to become available to non-veterinarians in the future.

Is the vaccine safe?

Yes. Equivac HeV is a safe and highly effective tool against Hendra infection.

Safety studies have been conducted in horses greater than 4 months of age, and these studies have shown no significant adverse reactions associated with the use of Equivac HeV. The majority of horses show no signs after vaccination. The most common side effects that have been reported have included small injection site reactions, painless lumps that subside after a few days, or general malaise, which is typical of vaccinations which stimulate the immune system.

It is possible that vaccinating horses whose immune systems are compromised may result in a display of clinical signs associated with other conditions. To date, the adverse reaction rate reported to the APVMA is only 0.27% of more than 250,000 administered doses.

Can the vaccine cause Hendra virus?

No. Equivac HeV is not a live vaccine and it cannot cause clinical disease. Live virus is not used at any stage in the production of the vaccine.

Equivac HeV is known as a "subunit" vaccine. Other "subunit" vaccines used in horses include Equivac Strangles vaccines.

How will vaccinating my horse protect human life?

The only recognised pathway of transmission of Hendra to people is from contact with infected horses. Vaccination of horses will therefore provide protection to people by interrupting Hendra transmission from flying foxes to horses, and then to humans.

Can vaccination affect my horses' performance?

This is very unlikely, given how safe the vaccine is and the reporting of only minor vaccine reactions to date. However, in line with other vaccination recommendations, it is wise to avoid administering Equivac HeV within seven days of competition in case mild temporary soreness develops at the injection site.

Is the vaccine safe for use in foals?

Yes, foals can be vaccinated from 4 months of age with two doses, between 21 and 42 days apart. Thoroughbred foals to be registered with the Australian Stud Book must only be microchipped with an ASB assigned microchip.

Is the vaccine safe for use in pregnant brood mares?

There are currently no associated label recommendations regarding broodmares, and the decision to vaccinate pregnant mares should be made by weighing the risk of Hendra infection against the risk of possible vaccine-related side effects on the pregnancy.

Field studies reported in The Australian Veterinary Journal in 2014 indicate that the vaccine is safe when administered after 45 days of gestation. In three trials involving approximately 50 broodmares, there was no evidence of any untoward issues of abortion or foal abnormalities occurring even when mares received higher than the normal recommended doses (double doses), and were more frequently vaccinated than normal (every 2 weeks) in some cases.

There is also strong evidence confirming safe use in broodmares, with no untoward effects on foals born from those mares, from some of the largest Australian studs in the Hunter Valley which instituted vaccination policies for their broodmares before the foaling season.

Export restrictions

At present, vaccinated horses can be exported to most countries, including the major destinations of New Zealand, Hong Kong, Singapore, South Africa, the United Kingdom, the European Union, USA and Canada. However, China, Malaysia and the United Arab Emirates have specific limitations regarding Hendra and the importation of horses. The Commonwealth Government Department of Agriculture, Forestry and Fisheries is in discussions with these countries regarding the approval of importation of vaccinated horses. In the meantime, export of vaccinated horses will be managed on a case-by-case basis. Dispensation can be requested.

Is the vaccine compulsory?

Individual equestrian associations and industry bodies can and have introduced mandatory Hendra vaccination within their organisation, including Equestrian NSW, the Royal Queensland Show ("the Ekka"), Samford Show Society (QLD), North Coast National A & I Society (NSW) and Pines River Show (QLD). Equestrian Australia and Racing QLD have previously announced that they are committed to introducing mandatory vaccination in the near future. Many private riding schools and agistment properties have also made vaccination a compulsory requirement.

Commonwealth and State Governments do not have mandatory Hendra vaccinations requirements at this time. Contact your equestrian organisation directly to enquire about their policy on Hendra vaccination.

My horse has been vaccinated. Now what?

There are two ways that your horse's vaccination status can be verified;

1. Following completion of the initial vaccination course, a certificate will be emailed to you
2. Your horse's vaccination status and microchip number will be recorded on the Vaccination Registry and accessible through www.health4horses.com.au

Who can access the vaccination data on the registry?

The date of every dose of the Hendra vaccine administered, along with the horse's microchip number, is recorded on the Vaccination Registry by the veterinarian who administers the vaccine. Only registered and accredited veterinarians can update any of the information listed on the Registry.

Other people or organisations wanting to look up the vaccination status of a particular horse can access this information by entering the horse's microchip number through www.health4horses.com.au. Importantly, the Health4Horses website now allows horse owner and vets to enter in other treatments under their horses file such as tetanus vaccinations and dentals.

Is there a way to tell the difference between vaccinated and unvaccinated horses?

Vaccinated horses must be microchipped and their details entered into the National Vaccination Registry. A vaccination certificate will also be provided to the owner.

If there is any confusion about the vaccination status of a horse involved in a Hendra outbreak, or if the horse is to be exported, blood samples can be taken to help differentiate naturally infected horses from vaccinated horses, with reference to what is entered on the Vaccination Registry.

**Vaccination is the single most effective way to prevent Hendra infection in you and your horse.
Talk to your veterinarian about vaccination today.**