

This similar virus induces a degree of protection against myxomatosis. It is not a new principle to use a similar virus to control disease. For instance, Edward Jenner made the first successful vaccination in 1796 against smallpox by immunising a patient with the cowpox virus. There are several other examples of related viruses being used to control diseases in animals and man.

Is this vaccine live or dead?

Nobivac® Myxo is a live vaccine containing the Shope Fibroma Virus. However, the virus does not readily spread from one animal to another and all rabbits in a group should be individually vaccinated.

Does the vaccine cause disease?

No. Nobivac® Myxo does not cause illness in vaccinated rabbits. The only clinical signs that may be seen are sometimes a slight lump at the site of vaccination. This is a good sign as it shows that the virus has actually caused a swelling in the skin and this should confer a strong protection against myxomatosis.

Does vaccination guarantee protection against disease?

No, vaccination can never guarantee protection against any disease but Nobivac® Myxo when properly used, offers the best available chance of producing immunity against myxomatosis. Rabbits that are exposed to myxomatosis, but have a degree of immunity, do not usually develop the disease myxomatosis. However, they may develop a form of myxomatosis (atypical myxomatosis) which presents as small skin lumps/nodules which resolve over a period of time. Extreme care must be taken to avoid stress and other ailments. It must always be remembered that rabbits are very susceptible to stress. Rabbits also suffer from common ailments which can prove fatal, one of which is pasteurellosis. Pasteurella bacteria are present in the majority of rabbits usually without making their presence known, but at times of stress or illness, can cause signs of disease - most commonly respiratory disease. This organism is the cause of "snuffles" in rabbits.

What is the vaccination schedule?

A single vaccination should be given to rabbits over six weeks of age. Rabbits should not be vaccinated during pregnancy. Only healthy rabbits should be vaccinated. The vaccine may not be effective in rabbits incubating the disease at the time of vaccination. Following initial vaccination rabbits should not be exposed to infection for at least 14 days. Some animals may be immunologically incompetent and fail to respond to vaccination.

Are boosters necessary?

Boosters are suggested annually for rabbits which are not under a heavy challenge from the disease. However, animals which are likely to be heavily challenged by the disease e.g. rabbits in a rabbit sanctuary, rabbits close to wild rabbits with myxomatosis, rabbits with a heavy flea population or rabbits in an area where myxomatosis is rife are best vaccinated twice a year. Incidentally, most myxomatosis in Britain occurs in the late summer, autumn and early winter months. When giving a single annual vaccination it is probably best to vaccinate in May or June so that animals have the best protection during the autumn and early winter months. However, do remember that myxomatosis can affect animals during any month of the year.

Nobivac® Myxo

Nobivac® Myxo is available from veterinary surgeons in the United Kingdom. It is a prescription only medicine (POM) and upon vaccination owners will be provided with a certificate of vaccination. The vaccine is available in single dose vials for easy administration.

Microchipping

You vaccinate your rabbit against the risk of disease. But what do you do to identify your pet and guard against the risk of your rabbit getting lost? Microchipping is administered in the same way as a vaccination by simple injection and places a tiny microchip under the skin of your rabbit. If your rabbit should get lost, this unique microchip number can be retrieved by a simple portable scanner held by all charity, welfare and animal organisations who can use this number to link to your personal details stored on the national database. Thereby your pet becomes uniquely identifiable to you following one simple visit to your vet.

Further information
is available from your veterinary surgeon



the future of vaccination



the future of vaccination

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Myxomatosis and its control



What causes myxomatosis?

The disease myxomatosis in rabbits is caused by a virus. The virus is a type of pox virus which grows best in the skin of rabbits. Like all viruses the organism is minute and can only be seen under the electron microscope.

What are the signs of myxomatosis?

The very first signs we can see are puffy, fluid swellings around the head and face. 'Sleepy eyes' are a classic sign along with swollen lips, tiny swellings on the inside of the ear and puffy swellings around the anus and genitalia. Within a day or so, these swellings can become so severe as to cause blindness and there may be some distortion around the face, mouth, ears and nose.

Which rabbits are susceptible to myxomatosis?

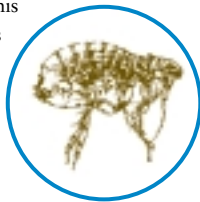
In this country, the European rabbit (*Oryctolagus*) is highly susceptible to the disease. The European brown hare is sometimes, but rarely, affected with myxomatosis.

What breeds of rabbit are affected?

All breeds of rabbit are affected, including our wild rabbit found in the country, all breeds of pet and show rabbits including Dwarf rabbits, Lop Eared rabbits and Exotics. There is little evidence that one breed is more susceptible than another.

Where did myxomatosis come from?

Originally, myxomatosis was imported from Brazil (where it was first discovered in the 1930's) to Australia in 1950. This was to control the massive populations of rabbits in that sub-continent. In Brazil, the Cotton Tailed rabbit (*Sylvilagus*) is affected by the disease to a minor degree as only tiny lumps are produced by this self-limiting disease. However, in Australia the disease was devastating and markedly reduced the rabbit population.

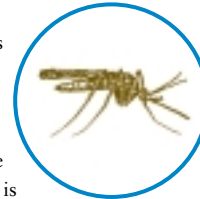


How did the disease get to Britain?

The disease was transmitted from Australia by a French Physician, Dr A Delille, who wished to control the rabbit population on his country estate near Paris. The disease rapidly spread into the wild population in France and then was brought, entirely by accident, from France in 1953. There is no evidence that the disease was intentionally brought into Britain but there is no doubt that some farmers moved the disease around using diseased rabbits to control the population of the rabbits locally.

How is the disease spread?

Myxomatosis is spread by blood sucking insects. A major insect parasite which transmits the disease in this country is the rabbit flea which is frequently found on wild rabbits although is less common on pet rabbits. In other countries, including some European countries, it is known that mosquitoes are a major insect vector of myxomatosis. Although this has never been proved in Britain, there is strong circumstantial evidence that mosquitoes transmit myxomatosis in the United Kingdom. Incidentally, myxomatosis is not easily spread by simple contact from one rabbit to another. For instance if a myxomatosis-infected rabbit is placed in the same hutch as a healthy rabbit and neither animal is parasitised by fleas or mosquitoes, then the disease is virtually never transmitted by contact. Myxomatosis virus can remain alive in the blood of fleas for many months and it is probably by over-wintering of fleas in rabbit burrows that the disease is transmitted from year to year.



What happens when a myxomatosis-infected flea bites a susceptible rabbit?

As the mosquito or flea bites the rabbit a small amount of the live virus is placed in the skin of the rabbit as the insect sucks blood. Within a few days the virus is transmitted to a local lymph node and then passes into the blood of the rabbit which enables it to be moved around to several sites. The virus mainly multiplies in the skin around the eyes, the nose, the face, the soft skin inside the ears and also the skin around the anus and genitals of the rabbit.

What is the incubation period of myxomatosis?

The incubation period varies slightly from one animal to another but can be as short as five days and as long as fourteen days (incubation period is the time from the point of introduction of the virus into the animal to the first time that clinical signs of illness are seen).

After infection how long do rabbits usually survive?

This also varies. Some animals may survive for weeks or months after infection but, in general, if an infection is severe in a susceptible rabbit, death occurs within 12 days.

How does the disease progress?

Within a short space of time, affected rabbits become blind because of the swelling around the eyes and for this reason feeding and drinking is often difficult. However, one can sometimes see wild

rabbits suffering from myxomatosis quietly grazing. Of course, at this stage many rabbits become prey to animals such as foxes and other predators. Other rabbits may well become injured or killed on roads but the common cause of death is a secondary lung infection which often occurs around day 8 after the initial incubation of the disease. In pet rabbits, the disease often progresses more slowly and death is not so rapid because of the care which the owner gives the rabbit.

Do all affected rabbits die?

Not all affected rabbits die. Although recovery is rare in the wild (probably less than 10% of wild rabbits eventually recover from myxomatosis) recovery may be more common in pet rabbits with intensive nursing. (If care is taken with feeding, making sure that water is available and medical care to combat pneumonia is given, then recovery rates in pet rabbits are higher than in the wild but are variable depending on the severity of the disease.)

However, a word of warning - myxomatosis can be a very protracted disease and affected animals may take weeks or months to recover. Even then there may be severe scaling, scabbing and scarring on the head and body.

How can the disease be controlled?

The disease can be controlled by two main methods:

1. Control of insect parasites.
2. Use of vaccines.

Controlling insects

Flea control is important and may involve not only keeping wild rabbits away from pet animals but also positive use of flea control measures such as sprays, dips and insect repellent strips. Incidentally, there is some evidence that the domestic cat, which can often be affected with rabbit fleas, may be a secondary transmitter of the rabbit flea. Obviously, isolating pet rabbits from possible close contact with wild rabbits is sensible. Do not forget to control mosquitoes - it may be possible to use mosquito nets and insect repellent strips. Care should be taken that the bedding of animals is kept dry and that pet rabbits are not kept in moist conditions which favour mosquito activity. Veterinary surgeons will be able to give advice on flea and mosquito chemical control.

Use of vaccine against myxomatosis

In Britain Nobivac® Myxo is licensed for the control of myxomatosis. This vaccine utilises a virus called the Shope Fibroma Virus which is closely related to the myxomatosis virus but does not cause disease. Occasionally, it is possible to see a tiny swelling at the site of vaccination but usually no signs are obvious after vaccination.