



# Rabbits and RHDV2

## WHAT YOU NEED TO KNOW

The purpose of this document is to inform you, the caretaker of rabbits, about Rabbit Hemorrhagic Disease Virus type 2 (RHDV2). RHDV2 is an extremely contagious and deadly disease caused by a calicivirus that affects both wild and domestic rabbits. Death is due to massive internal hemorrhaging and liver impairment. Of susceptible rabbits, 70-90% that develop the disease die. Rabbits of all ages are affected. It is not contagious to people or other animals. The virus is causing deaths in rabbits and hares native to North America. Having already spread throughout the United States, Mexico, and parts of Canada, it is expected to continue spreading. It is a disease that triggers state, federal, and international regulatory action.

RHDV2 is often a very swift and sudden killer, giving little warning. **Rabbits may die without showing any obvious symptoms.** Those who do not die immediately may demonstrate

- Fever
- Loss of appetite
- Inactivity and listlessness
- Jaundice
- Spasms
- Breathing difficulties
- Blue-colored lips or mucous membranes
- Bleeding from nose, mouth, or rectum

Later signs relate to organ failure and may include respiratory distress, diarrhea, weight loss, bloating, and death. The incubation period for RHDV2 is 3-5 days. **There is no known cure.**

Rabbits surviving infection are believed to shed the virus for at least 42 days and as long as 105 days. Exposed and surviving rabbits **may** have immunity to that viral strain for an unknown amount of time.

While RHDV2 only affects rabbits, it can survive and be transmitted to them through multiple means. This virus may be inhaled, ingested, or absorbed through conjunctiva or scrapes and wounds. Methods of transmission to rabbits include, but are not limited to:

- Direct contact or exposure to infected domestic or wild rabbits
- Indirect contact with objects (cages, feeders, grooming equipment, etc.)
- Consumption of contaminated hay, greens, and food
- Exposure to urine or feces from infected rabbits
- Exposure to infected rabbit products (meat, fur, skins, offal) or carcasses - fresh, frozen, or decayed

- Exposure to vermin, such as insects or rodents, wild animals, predators, or scavengers, or domestic animals or birds who are contaminated with the virus
- Exposure to contaminated clothing and shoes from humans
- Transference to different localities, including to YOUR HOME, on the tires of vehicles.

RHDV2 is a hardy virus. It persists in the environment for several months. It can remain stable and infectious for 105 days at room temperature (68°F) and 225 days at 39°F (just above freezing temperatures) on environmental surfaces, i.e. clothing and other objects. It is not killed by freezing, and it can survive heat of 122°F for an hour, which makes disease control efforts extremely challenging.

In this document, we will break down what rabbit owners and guardians can do to help keep their rabbit safe. Informing veterinarians, shelters, pet stores that sell rabbits, and fellow rabbit lovers about RHDV2 is important to help protect all rabbits. **Please help us spread the word about RHDV2** by sharing our handout with other rabbit guardians and anyone who may encounter rabbits.

**By working together, we can raise awareness about this deadly disease and help save more rabbit lives.**

## WHAT YOU CAN DO

### BIOSECURITY

**Even if a rabbit is housed only indoors, it is still at risk of becoming infected.** Fortunately, you can take many measures to help reduce the risk of your rabbit becoming infected with RHDV2, including:

- ▶ Keep all rabbits indoors with no outdoor playtime.
- ▶ Do not allow your rabbits to have playtime with rabbits from outside your home.
- ▶ Adopt a "no shoes in the house" policy and keep your rabbit from running in high traffic areas of your home. The virus can be spread to a healthy, indoor rabbit by shoes that have been in contact with ground that has been contaminated, or by other contaminated objects.
- ▶ Consider establishing a "rabbit area" in your home that cannot be entered without first taking precautions.
- ▶ Wash your hands thoroughly before and after handling rabbits.
- ▶ Change your clothes and wash them twice in hot water after contact with other rabbits.
- ▶ Clean and disinfect equipment, tools, footwear, feed and water containers, and pens/cages. Because of the hardy nature of the virus, and since bleach is inactivated by organic matter, removal of all organic material (bedding, feces, fur, material on hutches or pens, etc.) via scraping, brushing, sweeping, or digging, before cleaning and disinfection is critical for cleaning and disinfection to be effective.

Once organic material is removed, wash items thoroughly with soap and water and apply disinfectant for the recommended contact time. **Contact time is the amount of time a disinfectant needs to sit on a surface, without being wiped away or disturbed, to effectively kill germs.** Among USDA-listed effective disinfectants for RHDV2 are **10% bleach solution, 1% Virkon S, and accelerated hydrogen peroxide products (e.g., Rescue™)**. Rinse items well and allow to dry before allowing animal contact.

- To achieve a 10% bleach solution, use a 1:9 ratio. Add 1-part household disinfecting bleach (5.25-8% sodium hypochlorite) to 9 parts water. *Diluted bleach solutions should be mixed every 24 hours to maintain effectiveness.* **Contact time needed is at least 5 minutes.** Bleach concentrates lose potency over time. Be sure to store bleach concentrates in a cool, dark place, and only use recently purchased bleach concentrate to mix the solution to be used for disinfecting purposes.
  - Virkon S is a disinfectant often used by animal health officials and an increasing number of owners. To achieve a 1% use dilution, add Virkon S (depending on formulation type, either 1 sachet, 8 tablets, or 1.3 ounces of powder [or 1 Virkon S scoop]) to 1 gallon of water. Stir until fully dissolved, then use per label. **Contact time needed is at least 10 minutes.**
- ▶ Do not use materials gathered from outside for bedding or nesting.
  - ▶ Properly and frequently dispose of soiled and used bedding.
  - ▶ Quarantine any new rabbit for at least 14 days.
  - ▶ Do not allow other people who own rabbits to handle your rabbit.
  - ▶ Do not transport rabbits into or out of RHDV2 quarantine areas. If you are traveling, be aware of the rabbit disease status of the state or country you are visiting. Take steps to avoid introducing RHDV2 to your rabbits.
  - ▶ For all equipment or supplies you consider purchasing, be aware of the virus status of the state or country of origin.
  - ▶ If your rabbit is sick, always reach out to your veterinarian. Any sudden rabbit death is suspicious and should be reported to your veterinarian as a possible case of RHDV2.
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## RABBIT FOOD

Before making significant changes to your rabbit's diet, such as deciding to eliminate feeding greens, talk with your veterinarian.

Know the source of your hay. Contact your hay supplier to learn from where their hay is sourced, and if it is grown or stored in an outbreak area. If necessary, feed your rabbit packaged hay from a trusted manufacturer, after confirming their hay is safe. If in an outbreak area, ask whether the hay has been stored in an indoor, secure, controlled environment for more than four months.

- ▶ If possible, know the source of the produce sold at your grocery store -- a lot of produce sold in the U.S. is grown in Arizona, Mexico, and California - places where RHDV2 is known to be spreading.
  - ▶ Consider purchasing greens from a supplier in your area that grows their produce in controlled-environment greenhouses or consider growing your own vegetables indoors in your home, especially if you live in an outbreak area.
  - ▶ Wash vegetables thoroughly in a bowl for at least two minutes, changing the water several times.
  - ▶ Stop feeding your rabbits plants, grasses, or tree branches foraged from outside in outbreak or neighboring areas.
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## INSECTS

It is critical to minimize or eliminate insects from your home, since insects can spread RHDV2 by acting as indirect hosts transporting the virus from an infected rabbit to a healthy one. Fly feces containing RHDV2 can contaminate plants that rabbits eat and cause illness.

There are many ways you can keep insects out of your home:

- ▶ Control flies, fleas, and mosquitos.
  - ▶ Seal cracks and openings in your home.
  - ▶ Install window and door screens
  - ▶ Store trash in a bin with a lid and take it out regularly.
  - ▶ Clean, sweep, and vacuum regularly.
  - ▶ Use a monthly flea treatment for rabbits, cats, dogs, and other pets in your household, especially if any pets go outside. **Only Revolution or Advantage II can be applied to rabbits. Never apply Frontline to a rabbit.** Talk with your veterinarian to learn more and to get a prescription. Do this monthly for all the animals in your household, at least until your rabbit is vaccinated.
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## OTHER PETS

If your household has dogs, cats, or other pets, take additional precautions.

Keep cats indoors, so they can't bring in the virus from outside.

- ▶ When taking dogs out, keep them on-leash to ensure they don't directly interact with wild rabbits, alive or deceased. If your dog tolerates it, consider having him/her wear booties outside, or consider washing its paws when coming inside.
  - ▶ Designate separate areas in your home for your dog and block off its access to areas where your rabbit lives or exercises.
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## VACCINATION

A big question on everyone's mind is about the RHDV2 vaccine and its availability.

Since people, insects, birds, and other animals can spread the virus to a healthy rabbit, there are many safety precautions rabbit guardians should take to help protect their rabbit, including vaccination. **The best way to protect your rabbit from this deadly disease is to have it vaccinated.**

Although the vaccine may not prevent the disease in 100% of cases, when vaccinated, it helps rabbits survive if they have been exposed to RHDV2. **Biosecurity measures should still be taken to protect rabbits, even once they are vaccinated.**

- ▶ Per the House Rabbit Society, **“Regular vaccination is required for continuous protection against RHD.** Vaccination is low risk and is effective to the vast majority of rabbits... Currently, a vaccine that protects against RHD is available in most states in the United States. Medgene Labs manufactures this vaccine and supplies veterinarians in states where the vaccine has been approved for distribution. The vaccine has been given emergency use authorization and further studies are needed to determine how often the vaccine needs to be administered, but at this time it is believed that it will be annually.” Talk with your veterinarian about your rabbit's overall health history and ask about vaccination.
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## WILDLIFE

Besides sharing RHDV2 information with other rabbit guardians, another way you can help is to report any sightings of infected or dead wild rabbits to state wildlife officials and let others know they should do the same, so outbreak areas can be confirmed more quickly. This can help protect more domestic rabbits, since it can pinpoint where the disease is spreading.

If you see an infected or dead rabbit, **do not touch it!** Report sightings of sick or dead wild or feral rabbits to your state wildlife officials at **Wildlife Commission Wildlife Health Hotline - (866) 293-9282.**

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## FOR MORE INFORMATION

[https://www.aphis.usda.gov/publications/animal\\_health/fs-rhdv2.pdf](https://www.aphis.usda.gov/publications/animal_health/fs-rhdv2.pdf)

<https://rabbit.org/rhdv/>

[RHDV Information Page](#)

<https://rhdv2.org/>

<p>Suspected cases of RHDV2 should be reported to the Florida State Veterinarian. <b>Dr. Michael Short</b> Division of Animal Industry Phone: <b>(850) 410-0900</b> E-mail: <a href="mailto:RAD@FDACS.gov">RAD@FDACS.gov</a></p>	<p>Veterinarians should report suspected cases of RHDV2 to: <b>USDA APHIS Veterinary Services</b> <b>Dr. Michael Whicker</b> Phone: <b>(352) 415-4050</b> Email: <a href="mailto:Michael.E.Whicker@usda.gov">Michael.E.Whicker@usda.gov</a></p>
<p>To report sick or dead wild or feral rabbits, contact: <b>Florida Fish and Wildlife Commission - Wildlife Health Hotline - (866) 293-9282</b></p>	<p>If <b>YOUR rabbit</b> is sick, contact your <b>private veterinarian</b>.</p> <p>If you suspect that you have a possible death from RHDV2, <b>do not bury the body or take it out of the house</b>; call your vet immediately to ask what to do.</p>

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