



Frequently asked questions on Ebola virus disease

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What is Ebola virus disease?

Ebola virus disease (EVD), formerly known as Ebola haemorrhagic fever, is a human illness caused by infection with an Ebola virus. There are five known species of Ebola viruses, four of which cause human illness. The Zaire Ebola virus was the first Ebola virus ever isolated. The virus caused the first reported outbreaks of the EVD in 1976 in the Democratic Republic of the Congo and the Sudan. The name of the disease comes from the first recorded outbreak in 1976 in an area that lies on the Ebola River. For more information, see the Centers for Disease Control and Prevention (CDC) website About Ebola Virus Disease: www.cdc.gov/vhf/ebola/about.html

How does EVD affect humans?

For symptoms and all other human health information, please refer to the World Health Organization (WHO) Ebola Virus Disease website: www.who.int/news-room/fact-sheets/detail/ebola-virus-disease

How are Ebola viruses spread?

Ebola viruses are spread among humans through direct contact of broken skin or mucous membranes with body fluids from infected people who are sick with or have died from the disease, or contact with surfaces and materials that are contaminated with bodily fluids from infected people. See WHO Ebola Virus Disease website: www.who.int/news-room/fact-sheets/detail/ebola-virus-disease

What should be done to protect humans from Ebola viruses?

FAO recommends following WHO guidelines with regard to human health concerns. See WHO Ebola Virus Disease website: www.who.int/ebola/en/

Is it safe to travel to Ebola infected areas?

For travel advice, please refer to WHO: www.who.int/csr/disease/ebola/faq-ebola/en/
www.who.int/csr/don/en/

How is EVD associated with animals?

EVD is a zoonotic disease, or a disease that can be transmitted between animals and humans. The natural reservoir host of Ebola has not yet been confirmed, but certain species of fruit-eating bats are believed to be the principal animal reservoirs of Ebola viruses. Research has demonstrated that bats can carry the virus without showing clinical signs of illness.

Ebola viruses have also been detected in forest dwelling wildlife species such as non-human primate (apes and monkeys), and duikers (i.e. a small wild antelope).

The way the virus first infects a human at the start of an outbreak is unknown. However, the virus can spread to people through direct contact with the blood, body fluids and tissues of infected fruit bats or non-human primates. It is believed that the first human becomes infected through contact with an infected animal, such as a fruit bat or a non-human primate in what is called a spillover event. Spillover from wildlife to humans is rare and almost always occurs as an isolated incident. Although animals do not play a significant role once EVD starts to spread among humans, infected wildlife that are hunted and prepared for human consumption may infect those that dress and prepare the carcass prior to cooking.

Pigs are the only domestic livestock species that are currently known to be susceptible to any Ebola viruses. In the Philippines and in China pigs have been found to be naturally infected with Ebola-Reston virus, a species of Ebola that is not known to cause human illness. Pigs are not known to be naturally infected with or transmit the more dangerous Zaire Ebola virus species. Under laboratory conditions, pigs have been infected with extremely high doses of Zaire Ebola virus and were able to transmit the disease to other pigs. However, an FAO analysis determined the risk of domestic pigs becoming naturally infected and acting as carriers of the disease to be very low.

There are no reports of dogs or cats becoming sick with Ebola or spreading Ebola to people or other animals. Antibodies against Ebola viruses have been found in dogs in Ebola-affected areas which may point to exposure (not necessarily infection) when they have fed on infected carcasses: FAO analysis determined the risk of human exposure to Ebola through contact with dogs to be very low to low.

For further information on susceptibility of domestic or wild animal species see FAO's risk assessment: www.fao.org/3/a-i4364e.pdf

Is wild meat safe to eat?

Wild meat, also called “bush meat”, refers to meat of wild animals harvested in tropical and subtropical countries, for food and non-food purposes, including medicinal use. Many different wildlife species are hunted as wild meat for consumption and sale, including bats, rodents, antelopes, gorillas and chimpanzees.

When assessing risk, it is important to distinguish between the many different animal species considered as wild meat. Currently, fruit bats pose a risk to humans, since they are considered the likely reservoir of the Zaire Ebola virus. Therefore, FAO recommends people in affected and at-risk areas not hunt, dress or eat bats. Other wild animals in areas where Ebola viruses have been detected can play a role in virus circulation at the animal-human interface. For this reason, wild animals that are sick or have

died from unknown causes should not be handled or eaten. These animals should not be given or sold or used to feed other animals.

With the exception of bats, healthy, wild animals hunted, slaughtered, handled and consumed as wild meat present little to no risk to humans if good hygiene, proper protection and appropriate cooking practices are followed. People should not handle, slaughter, dress, sell, prepare or consume meat that originates from wild animals, or livestock, that are sick or that have died from unknown causes.

Under no circumstances should raw wild meat or uncooked dishes based on the blood of wild animals be consumed, since these practices place people at high risk of contracting any number of infections.

Do wild animals pose a threat to humans of contracting Ebola?

With the exception of bats, live wild animals pose little Ebola threat to humans as it is highly unlikely to contract an Ebola virus from these species.

What are good food preparation practices?

Ebola viruses, as well as other microbes, are not transmitted through consumption of well-cooked food. Ebola viruses are inactivated by normal temperatures used for cooking (so that food reaches 60°C in all parts – “piping” hot – for at least 30 minutes); it is safe to eat properly prepared and cooked meat.

Proper food preparation includes:

- washing hands with soap before and after handling food
- washing hands with soap between handling raw food and cooked or ready-to-eat food
- keeping raw meat separated at all times from cooked or ready-to-eat foods
- keeping utensils and surfaces used to prepare raw meats separated at all times from those used for other foods (e.g. chopping boards, knives and plates)
- promptly washing with soap and disinfecting all surfaces and utensils that have been in contact with raw meat

Source: WHO Food Safety website: www.who.int/foodsafety/en/

What specific precautions should be taken by individuals involved in the wild meat trade?

FAO stresses the importance of proper precautions when hunting, handling, transporting and selling wild meat. Existing legal restrictions on the hunting or capture of wild species, particularly if endangered, should be strictly enforced.

- Hunting, handling of bats should be avoided.
- Wild meat hunters, transporters, sellers and all other intermediaries should wear gloves when dressing and handling carcasses or meat to minimize the risk of contact with bodily fluids or secretions from wildlife.

- As a general rule, sick or dead wild animals should never be handled, sold or consumed.
- Anyone who encounters significant numbers of dead wildlife should alert the proper authorities.
- Clean surfaces, knives, and other utensils should be used as good practice; refrigeration to avoid spoilage during transport would decrease the opportunities for other microbes to contaminate the meat.

**Are my livestock safe from EVD?
How can I protect them?**

Information is limited on the ability of the Ebola viruses to infect livestock, such as cattle, sheep and goats or chickens. Field surveillance studies undertaken to date did not find evidence of infection and EVD, or antibodies against Ebola viruses in these species. Other, more common diseases pose more risk to livestock. Consult the veterinary authorities for a comprehensive list of the zoonotic disease threats in your area. Farmers should protect their livestock from diseases and other health threats by implementing good animal health practices, including biosecurity and hygiene, vaccination regimes where available, limited exposure and mixing with other animals by keeping livestock in enclosures, and no feeding of raw meat, scraps or dead animals.

For more information:

- FAO Biosecurity Fact Sheet: www.fao.org/documents/card/en/c/dece81cb-988b-56a1-af14-6699cd1bc0f2/
- FAO and OIE Guide to Good Farming Practices for Animal Production Food Safety: www.fao.org/documents/card/en/c/4237ec8b-f340-5488-a510-44ce3b38dcd3/

Can scavenging or stray animals place my family or me at risk?

The main risk of Ebola spread and infection is through human-to-human transmission. Information on the ability of scavenging animals to carry the virus is limited. However, scavengers like stray dogs can pose a risk by physically moving the remains of infected animals or people closer to human populations.

Can a pig farmer infected with Ebola transfer the infection to pigs?

The potential for Ebola-infected humans to subsequently infect pigs with the Zaire Ebola virus is unknown. The only Ebola virus found to infect pigs in nature is the Ebola-Reston virus found in parts of Southeast Asia, which has never been reported to cause human disease. Pigs are not known to be naturally infected with or transmit the Zaire Ebola virus species, even though laboratory infection studies with extremely high doses of Zaire Ebola virus suggest this may occur. However, an FAO analysis determined the risk of domestic pigs becoming naturally infected and acting as carriers of the disease to be very low. In areas where Ebola is confirmed, FAO strongly advises people to keep animals in enclosures.

What is the potential impact of Ebola on agriculture and food security?

EVD outbreaks can place undue strain on health and medical services, economies, livelihoods and food systems across the most affected countries. The tragic loss of life is one of many negative impacts. During

the epidemic in West Africa from 2014–2016, attempts to control the epidemic, fears of infection and overall panic caused many people to abandon their activities, including farming, taking care of livestock and marketing of products, such as milk or eggs. These can translate into loss of income and a decrease in food production and sale. Depending on the scale and duration of the outbreak, prolonged disruption of the current harvest and subsequent planting season can drive hundreds of thousands of vulnerable people deeper into poverty and hunger as food sources dwindle.

What can be done to reduce the impact of Ebola outbreak-related crises on food security and livelihoods?

As soon as any outbreak is fully controlled, interrupted agriculture practices must be revived where possible and alternative sources of food and income identified to safeguard the livelihoods and food security of those most affected.

FAO stands ready to help countries cope with food security crises related to disease outbreaks, and revive disrupted livelihoods. FAO works with governments to provide training, inputs, tools and expertise to promote food security via support to the agriculture sector.

What are the negative repercussions of stigma/fear of EVD survivors on agriculture?

Survivors of EVD do not pose a threat to their community, and all survivors, their partners and families should be shown respect, dignity and compassion. The stigma faced by Ebola survivors represents a serious threat to food security. Scientifically unwarranted fear of infection via an Ebola survivor can cause customers to stop frequenting a survivor's shop, to cease to purchase produce or animal products from agrarian survivors and to exclude survivors from agriculture and income generating activities.

For more information, please refer to WHO:
www.who.int/ebola/survivors/en/

What is FAO doing to reduce the likelihood of epidemics of EVD and other zoonotic diseases in the future?

Improving global health systems is key to safeguarding the health of future generations. FAO works with WHO, UNICEF, United Nations Office for the Coordination of Humanitarian Affairs, *Médecins Sans Frontières*, World Organisation for Animal Health and other partners, including regional technical agencies and economic communities, as part of the international effort under the One Health umbrella to improve preparedness and capacities in the animal health sector for disease surveillance and rapid response.

FAO is working with national governments, international and local partners to improve the understanding of the drivers and emergence of zoonotic diseases, and to build animal health sector capacities in early warning and response at the human-animal-ecosystem interface to improve their ability to timely detect and respond to future outbreaks of zoonotic diseases such as Ebola.

Increased awareness and adaptation strategies for at-risk communities who depend on wildlife for food should also be a priority of future work to reduce the risk of spillover of Ebola viruses and other zoonotic diseases

from wildlife to human populations.

FAO will support countries to reduce the impact of food security crises related to outbreaks of Ebola or other diseases, and revive disrupted livelihoods. FAO works with governments to provide training, inputs, tools and expertise to promote food security via support to the agriculture sector.

Where can I get more information about Ebola?

- CDC Ebola Virus Disease website: <https://www.cdc.gov/vhf/ebola/>
- FAO *Addressing Zaire Ebola virus (EBV) outbreaks*: <http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/276799/>
- FAO *Investigating the Role of Bats In Emerging Zoonoses*: <http://www.fao.org/docrep/014/i2407e/i2407e00.pdf>
- European Centre for Disease Prevention and Control *Ebola and Marburg fevers*: <https://ecdc.europa.eu/en/ebola-and-marburg-fevers>