



# Antibodies against Nipah Virus in Bats

## Why in News

A recent survey has found the **presence of antibodies** against the **Nipah virus (NiV)** in some **bat species** from a cave in **Mahabaleshwar**, a popular hill station in **Maharashtra**.

- The survey was conducted by the [Indian Council of Medical Research \(ICMR\)](#) - **National Institute of Virology (NIV)**.

## Key Points

### ▪ About the Survey:

- The NIV team looked at **Rousettus leschenaultii** and **Pipistrellus pipistrellus** bats that are common in India.
  - **Pteropus medius** bats, which are large **fruit-eating bats**, are the **reservoir for NiV in India** as both **NiV RNA** and antibodies were detected in the samples of these bats collected during previous NiV outbreaks.
- A **bat's immune system** is especially **adept** at withstanding **viral infection** because of its **ability to limit excessive inflammation** — which uniquely allows viruses to thrive without proving deadly to the mammal.

### ▪ Nipah virus (NiV):

#### ◦ About:

- It is a **zoonotic virus** (it is transmitted from animals to humans).
- The **organism which causes** Nipah Virus encephalitis is **an RNA or Ribonucleic acid virus** of the family **Paramyxoviridae**, **genus Henipavirus**, and is **closely related to Hendra virus**.

- Hendra virus (HeV) infection is a **rare emerging zoonosis** that causes severe and often fatal disease in both **infected horses and humans**.

- It **first broke out in Malaysia and Singapore in 1998 and 1999**.

- It **first appeared in domestic pigs** and has been found among several species of domestic animals including dogs, cats, goats, horses and sheep.

#### ◦ Transmission:

- The disease **spreads through fruit bats** or **'flying foxes,'** of the genus **Pteropus**, who are natural reservoir hosts of the Nipah and Hendra viruses.
- The virus is present in bat urine and potentially, bat faeces, saliva, and birthing fluids.


#### ◦ Symptoms:

- The human infection presents as an **encephalitic syndrome** marked by fever, headache, drowsiness, disorientation, mental confusion, coma, and potentially death.

◦ **Prevention:**

- Currently, there are **no vaccines** for both humans and animals. Intensive supportive care is given to humans infected by Nipah virus.

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<b>FIRST NIPAH DETECTION IN MAHARASHTRA</b>		<b>The Disease</b>
<p><b>THE VIRUS</b></p> <p>Nipah Virus (NiV) is on the top 10 pathogen list of WHO</p> <p>➤ First identified in Malaysia in 1998-99 during an encephalitis-like outbreak among pigs and pig handlers, with a case fatality rate (CFR) of 40%</p>	<p><b>NIPAH IN INDIA</b></p> <p>India has experienced four NiV outbreaks, with CFR ranging from 65 to 100%</p> <p>2001 in Siliguri district, West Bengal</p> <p>2007 in Nadia district in West Bengal</p> <p>2018 in Kozhikode district in Kerala with 18 deaths</p> <p>2019 in Kozhikode</p>	<p>➤ Infected bats shed the virus in excretion &amp; it can jump to humans</p> <p>➤ NiV can be fatal, causing swelling of brain (encephalitis) after signs of respiratory illness</p>
	<p><b>MAHABALESHWAR FINDINGS</b></p> <p>➤ Large fruit-eating Pteropus medius bats said to be NiV reservoir in India</p> <p>➤ 65 Rousettus leschenaultii (medium fruit-eating) bats and 15 (tiny, insectivorous) Pipistrellus pipistrellus</p>	<p>from a Mahabaleshwar cave tested in 2020</p> <p>➤ Antibodies found in 33 leschenaultii and one Pipistrellus bat</p> <p>➤ First report of possible NiV infection in R leschenaultii bats in India</p>
 <p>Researchers test bats in Kozhikode in 2018</p>		

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