

H5N8 subtype of Influenza A Virus

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In news

The presence of the H5N8 subtype of the Influenza A virus was reported in ducks in Kottayam and Alappuzha districts of Kerala

What is H5N8?

It is a subtype of the Influenza A virus (sometimes called bird flu virus). Although H5N8 is considered one of the less pathogenic subtypes for humans, it is beginning to become more pathogenic.

What is the flu?

Flu/Influenza is an extremely contagious respiratory illness caused by influenza A or B viruses. flu/Influenza appears most frequently in winter and early spring. The flu virus attacks the body by spreading through the upper and/or lower respiratory tract.

Types of flu/Influenza viruses

There are four types of influenza viruses: A, B, C and D.

Human influenza A and B viruses cause seasonal **epidemics** of disease

Influenza A viruses

- Influenza A viruses are the **only influenza viruses known to cause flu pandemics**, i.e., global epidemics of flu disease.
- A pandemic can occur when a new and very different influenza A virus emerges that both infects people and

has the ability to spread efficiently between people.

Influenza B virus

- Influenza B virus is almost exclusively a human pathogen, and is less common than influenza A.
- The only other animal known to be susceptible to influenza B infection is the seal.
- This type of influenza mutates at a rate 2–3 times lower than type A and consequently is less genetically diverse, with only one influenza B serotype

Influenza type C

- **Influenza type C** infections generally **cause mild illness**
- The influenza C virus infects humans and pigs, and can cause severe illness and local epidemics.
- However, influenza C is less common than the other types and usually causes mild disease in children


Influenza D viruses

- **Influenza D viruses** primarily **affect cattle** and are not known to infect or cause illness in people. Cases of infections from the Type D virus are rare compared to Types A, B, and C.

More about Influenza A viruses

- Influenza A viruses are divided into subtypes based on two proteins on the surface of the virus: **Hemagglutinin (H) and Neuraminidase (N)**.
- There are 18 different hemagglutinin subtypes and 11 different neuraminidase subtypes (H1 through H18 and N1 through N11, respectively).
- While there are potentially 198 different influenza A subtype combinations, only 131 subtypes have been detected in nature.
- Current subtypes of influenza A viruses that routinely

circulate in people include: A(H1N1) and A(H3N2). Influenza A subtypes can be further broken down into different genetic “clades” and “sub-clades.”



Influenza Type A Viruses

Subtypes

- Hemagglutinin (HA)
- Neuraminidase (NA)

(Viruses are divided into subtypes on the basis of two proteins on the surface of the virus)

- 18 known HA subtypes
- 11 known NA subtypes

Different combinations of HA and NA proteins are possible

- An H7N2 virus designates an influenza A virus subtype that has an HA7 protein and an NA2 protein
- H5N1 virus has an HA5 protein and an NA1 protein

All known subtypes of Influenza A viruses can infect birds, except subtypes H17N10 and H18N11, which have only been found in bats

Influenza A H5

- There are nine known subtypes of H5 viruses
- H5N1, H5N2, H5N3, H5N4, H5N5, H5N6, H5N7, H5N8, H5N9

Does H5N8 spread to humans?

Although it is a lethal for birds, the H5N8 strain of avian influenza has a lower likelihood of spreading to humans compared to H5N1

Previous outbreaks of avian influenza in Kerala

In recent years, bird flu (H5N1 strain) outbreaks were reported in Kerala in 2014 and 2020. An H5N8 outbreak was reported in Kuttanad in Alappuzha, in 2016.