



## H5N1 VIRUS: SCIENCE & TECHNOLOGY

**NEWS:** Emerging H5N1 mutations raise risk of human infections

### WHAT'S IN THE NEWS?

H5N1 avian influenza, primarily affecting birds, has recently mutated (PB2-E627K), enhancing its replication in human cells. The virus has spread globally, infecting over 200 mammalian species, but human-to-human transmission remains limited.

### H5N1 Avian Influenza:

- **H5N1 Virus:** A subtype of the influenza A virus, causing severe flu in birds and occasionally in mammals, including humans.
- **Enzootic and Panzootic:** The virus is enzootic in bird populations and panzootic, affecting multiple species across regions.
- **Human Infections:** The virus can infect humans exposed to infected birds, often leading to severe symptoms or death. However, it currently lacks mutations making it easily transmissible between humans.
- **Emergence of New Clade:** The H5N1 (clade 2.3.4.4b) emerged in 2020 and caused a global outbreak, primarily spread by migratory birds.
- **Mammalian Infections:** H5N1 has been detected in over 200 mammalian species, including humans, and has resulted in millions of bird deaths.
- **Genomic Mutation:** The PB2-E627K mutation has been identified, associated with enhanced replication in human cells and increased adaptability to humans.

## Types of Influenza Virus

Types	A Subtypes	H5A1 vs L5A1
<b>Influenza A</b> (Infects a wide range of animals including birds)	Avian (Can infect humans) H5N1 H7N3 H7N7 H7N9 H9N2 H10N8	H5A1 H5N1 L5A1 H5N1 H5A1 H5N8 L5A1 H5N8
<b>Influenza B</b> (Mainly infects humans)	Swine (Can infect humans) H1N1 H1N2 H3N2	Subtypes can be classified as high path or low path based on the ability of the specific virus strain to kill chickens in the lab setting.
<b>Influenza C</b> (Infects humans and pigs but more rare than types A and B)	Most common human H1N1 H3N2	
<b>Influenza D</b> (Infects cattle)		

**Note:** -H5A1 stands for Highly Pathogenic Avian Influenza and L5A1 stands for Low Pathogenic Avian Influenza.

### How Infected Backyard Poultry Could Spread Bird Flu to People

Human Infections with Bird Flu Viruses Rare But Possible

