

**ADDITIONAL TECHNICAL INFORMATION**  
**Questions -- Answers -- Facts**  
**November 2005**

***Q. What is avian influenza?***

**A.** Avian influenza (AI) is a disease found among poultry. AI viruses can infect chickens, turkeys, pheasants, quail, ducks, geese and guinea fowl as well as a wide variety of other birds, including migratory waterfowl. Each year, there is a flu season for birds just as there is for humans and, as with people, some forms of the flu are worse than others. AI viruses can be classified into low pathogenicity and highly pathogenic forms based on the severity of the illness they cause in poultry. Most AI strains are classified as low pathogenicity avian influenza (LPAI) and cause few clinical signs in infected birds. In contrast, high pathogenicity avian influenza (HPAI) causes a severe and extremely contagious illness and death among infected birds.

---From the USDA website ([www.usda.gov](http://www.usda.gov))

***Q. Besides HPAI and LPAI, is avian influenza divided into other groupings?***

**A.** Yes, there are 144 different characterizations of the virus based on two groups of proteins found on the surface of the virus. One group is the hemagglutinin proteins (H), of which there are 16 different types (H1-H16); the other group is the neuraminidase proteins (N), of which there are 9 different types (N1-N9). The virus detected in several Asian and European countries is an H5N1 type of highly pathogenic (HPAI) virus.

---From the USDA website ([www.usda.gov](http://www.usda.gov))

***Q. Is it possible for an LPAI strain to become highly pathogenic?***

**A.** Some low pathogenic subtypes have the capacity to mutate into more virulent strains. While LPAI is considered lower risk, low pathogenic strains of the virus - the H5 and H7 strains - can mutate to highly pathogenic forms.

---From the USDA website ([www.usda.gov](http://www.usda.gov))

***Q. What kind of test is used to diagnose avian influenza in birds?***

**A.** Samples are usually taken by swabbing the mucus that coats the throat of live birds, which does not harm the birds. With wild birds, a fecal sample can be taken instead. These samples go into sealed tubes and are taken to USDA-approved laboratories where a polymerase chain reaction (PCR) test is run. A PCR test is a rapid method of identifying the virus, typically producing results within three hours. If a sample from an area where avian influenza has not been previously detected tests positive on a rapid test, an additional confirmatory test is performed. This test involves growing the sample in embryonated chicken eggs, which then provides the material to allow detailed identification of the strain of virus and whether it is HPAI (high pathogenicity) or LPAI (low pathogenicity). This test can take 3-5 days to produce results.

---From the USDA website ([www.usda.gov](http://www.usda.gov))

***Q. How is Asian H5N1 highly pathogenic avian influenza being kept out of the United States?***

**A.** The United States has multiple lines of defense against Asian H5N1 HPAI:

Transmission from live animals: The importation of birds or bird products from the affected area has been banned or placed under strict control by the U.S. government.

Transmission from poultry products: None of the affected countries in Southeast Asia are permitted to export poultry products to the United States. (Virtually all of the chicken and turkey sold in the United States is produced in the United States. The U.S. is a large poultry exporter and imports very little poultry.)

Transmission via human beings: The virus has not yet developed the ability to pass easily from human to human. If it does so, that will be considered a public health emergency and appropriate steps will be taken, presumably including restrictions on travel from the affected areas. It is possible that infected humans could bring the H5N1 highly pathogenic avian influenza from Southeast Asia to the United States. However, no one who has been to the affected areas in Southeast Asia will be allowed to set foot on a poultry farm in the United States. In addition, President Bush has taken the precaution of adding this type of avian influenza to the list of diseases for which a person can be quarantined while attempting to enter the United States.

---From the National Turkey Federation website ([www.eatturkey.com](http://www.eatturkey.com))

***Q. What is the H5N1 bird flu that has been reported in Asia and Europe?***

**A.** Outbreaks of influenza H5N1 occurred among poultry in eight countries in Asia (Cambodia, China, Indonesia, Japan, Laos, South Korea, Thailand, and Vietnam) during late 2003 and early 2004. At that time, more than 100 million birds in the affected countries either died from the disease or were killed in order to try to control the outbreak. By March 2004, the outbreak was reported to be under control. Beginning in late June 2004, however, new outbreaks of influenza H5N1 among poultry were reported by several countries in Asia (Cambodia, China [ Tibet ], Indonesia, Kazakhstan, Malaysia, Mongolia, Russia [ Siberia ], Thailand, and Vietnam). It is believed that these outbreaks are ongoing. Most recently, influenza H5N1 has been reported among poultry in Turkey and Romania. Human infections of influenza A (H5N1) have been reported in Cambodia, Indonesia, Thailand, and Vietnam.

---From the Centers for Disease Control website ([www.cdc.gov](http://www.cdc.gov))