

## BASIC INFORMATION

### Description

Canine influenza (CI) is a newer influenza strain that was first reported in 2004 at a Florida greyhound track. The virus first affected pet dogs in 2005. Dogs are the only known susceptible species. This strain (H3N8) is not known to infect humans.

### Cause

Canine influenza is caused by an H3N8 strain of the influenza A virus family. It is a mutated strain of an equine influenza virus. Healthy dogs of all ages are susceptible. The influenza is thought to be transmitted by an infected dog sneezing or coughing on another dog, much the same way as influenza is spread among humans. It can also be transmitted via contaminated inanimate objects (fomites) and by people who touch both infected and uninfected dogs.

The incubation period is usually 2-5 days. Infected dogs shed the virus for 7-10 days after clinical signs appear. Since the virus is new, all dogs are considered susceptible to infection, and most dogs exposed to CI become infected. Approximately 80% of infected dogs develop clinical signs. Infected dogs that do not exhibit clinical signs can still shed the virus and spread the infection.

### Clinical Signs

The disease may be mild or severe. Most dogs exhibit the mild form of the disease. The most common clinical sign is a cough that lasts 10-30 days despite treatment with antibiotics and cough suppressants. Most dogs have a soft, productive (moist) cough, but others have a dry cough that is similar to kennel cough. Many dogs have a nasal discharge that is purulent (contains pus) and a low-grade fever. Some dogs are more severely affected and may develop pneumonia with a high fever (104-106° F) and difficulty breathing.

### Diagnostic Tests

Serologic tests that measure antibodies in the blood are commonly used to confirm a CI infection. Antibodies can be detected as early as 7 days after the onset of clinical signs. The first sample is tested within these 7 days, and a second sample is taken 2-3 weeks later. A fourfold increase in antibody levels from the first (acute) sample to the second (convalescent) sample indicates a positive diagnosis of CI. If no early sample was obtained, a positive convalescent sample confirms that the dog was exposed but does not indicate whether an infection was present.

A disadvantage of serology is that it cannot be used to confirm the presence of an acute, active infection. A rapid test is available that can be used to tentatively diagnose an active infection. The test can be run on a nasal swab and is most sensitive during the first 2-3 days of illness. Polymerase chain reaction tests done at outside laboratories are more accurate.

## TREATMENT AND FOLLOW-UP

### Treatment Options

Treatment is mostly supportive. In the mild form of the disease, nasal discharge may indicate a secondary bacterial infection, so treatment with a broad-spectrum antibiotic may be recommended. Pneumonia associated with the severe form of the disease can also be complicated by a bacterial infection, so broad-spectrum antibiotics are also commonly recommended in those cases. Intravenous fluids may be needed for dehydrated dogs. Cough suppressants are not very helpful in most cases.

Antiviral drugs developed for treatment of influenza in humans, such as *Tamiflu*, are not used to treat CI, because the appropriate dose and duration of treatment in dogs are unknown. In addition, when used in humans, the drug needs to be started within 48 hours of infection, and canine influenza is rarely diagnosed that early.

### Follow-up Care

Dogs showing signs of CI should be isolated as soon as possible, to prevent spread of the disease to other dogs. Do not take these dogs to dog parks, boarding facilities, or other places where other dogs can be exposed to the virus. Recovering animals are also isolated for a couple of weeks to prevent transmission or possible reinfection before the dog has time to build up an adequate immune response to the virus. Wash your hands thoroughly after handling each dog. Thoroughly disinfect areas where the dog is housed with dilute bleach or another suitable disinfectant. All surfaces, equipment, and cages that have come in contact with an infected dog should be thoroughly cleaned and disinfected.

### Prognosis

Prognosis is good in most cases. Good nursing care and nutrition are essential for a full recovery. Approximately 5-8% of clinically ill dogs die of this disease.