

# Fever of Unknown Origin

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## BASIC INFORMATION

### Description

A fever is a body temperature higher than the normal range. In dogs and cats, normal body temperature is approximately 100-102.5° F (38-39.5° C). Fever of unknown origin (FUO) is diagnosed when the fever is chronic (lasting for 3 weeks or longer) or recurs frequently and physical examinations and routine laboratory tests have not identified the source of the fever.

### Causes

The most common causes of fever are infection, immune disease, inflammation, and cancer. Infectious causes include, but are not limited to:

- Tick-related infections, such as Rocky Mountain spotted fever, ehrlichiosis, Lyme disease, and babesiosis in dogs
- Viruses such as feline immunodeficiency virus (FIV), feline leukemia virus (FeLV), and feline infectious peritonitis (FIP) virus in cats
- Bacterial or fungal infections from bite wounds, pneumonia, or infections of the heart valves, uterus, urinary tract, joints, or bones
- Infections with protozoal agents, such as toxoplasmosis (cats and dogs) and neosporosis (dogs), or blood parasites, such as hemobartonellosis (cats)

Inflammatory and immune-mediated causes include:

- Drug or vaccine reactions
- Immune-mediated anemia, thrombocytopenia, or joint disease

Any type of cancer can cause a fever from release of inflammatory chemicals or destruction of tissue by tumor cells.

### Clinical Signs

Clinical signs depend largely on the underlying cause but are often vague and nonspecific. Many patients are lethargic and have a poor appetite; they may lose weight and may become dehydrated. These patients tend to be ill for several weeks as the fever persists and the underlying cause goes unidentified.

### Diagnostic Tests

A very thorough history is needed to determine the cause of the fever, so be sure to relay to your veterinarian all the medications and supplements recently administered to your pet, its vaccine status and dates, travel history, and exposure to other animals. A detailed physical examination is done to look for potential sources of the fever. Numerous laboratory tests are usually needed to rule out the various causes of fever. Some of the most common tests are the following:

- Complete blood count, serum biochemistry panel, electrolytes
- Urinalysis, urine culture
- Viral testing for FIV, FeLV, FIP
- X-rays of the chest and abdomen, including the spine
- Specialized tests for the common tick-borne, fungal, and protozoal diseases in your geographic area

• Blood smear evaluation and specialized tests for blood parasites  
If these screening tests come back negative or nondiagnostic, then additional, more advanced diagnostics may be recommended, such as the following:

- Abdominal ultrasound and echocardiogram (heart ultrasound)
- Needle aspiration of glands (lymph nodes), tumors, or any abnormal tissue
- Bone marrow evaluation
- Cultures of the blood and certain body tissues
- X-rays of bones and joints, as well as joint taps
- Specialized testing for unusual or rare bacterial infections, such as brucellosis or tuberculosis
- Spinal tap and analysis of cerebrospinal fluid
- Advanced imaging, such as magnetic resonance imaging (MRI) or computed tomography (CT scan)

Diagnosing the cause of an FUO requires time, patience, and many different tests and procedures, especially if the most common causes of fever are ruled out.

## TREATMENT AND FOLLOW-UP

### Treatment Options

Once the cause is identified, specific treatment is aimed at the underlying cause. In some cases of FUO, even after many diagnostic tests, a specific cause for the fever is not identified. In these cases, a trial may be started with broad-spectrum antibiotics, antifungal agents, or anti-inflammatory drugs. Sometimes a diagnosis is assumed, based on a positive response to treatment (the fever disappears), or a disease can be ruled out because of a lack of response (the fever continues).

In cases of prolonged illness or very high fever, the animal may also require hospitalization for nutritional support, intravenous fluid therapy, and administration of antifever medications. Never give medications that are designed to treat fevers in people to your pets! Some human medications, such as ibuprofen and acetaminophen (*Tylenol*), are toxic to pets and can cause life-threatening problems.

### Follow-up Care

Follow-up visits and repeat testing depend on the underlying cause, the type of treatment instituted, and the response to that treatment. Some causes of FUO and certain infections require long-term or lifelong monitoring.

### Prognosis

Prognosis is good if a treatable cause is identified and the animal responds to treatment. Certain causes of FUO are untreatable (such as some forms of cancer) or pose a health risk to humans.