CONDITION

Deerfly fever

Deerfly fever is a bacterial infection that causes fever, a skin ulcer, and swollen lymph nodes after an infected fly bite.

WHAT IT IS
Ulcer-and-swollen-gland form of tularemia spread by biting flies

BODY SYSTEM
Skin, lymph nodes, and whole body

MAIN SYMPTOMS
Fever, skin ulcer, swollen lymph nodes, fatigue

WHAT CAUSES IT
Francisella tularensis bacterial infection

HOW IT IS DIAGNOSED
Antibody tests, PCR, or specialised bacterial culture

MAIN TREATMENT
Antibiotics active against tularemia

CAN IT BE CURED?
Yes - appropriate antibiotics usually clear infection

IS IT AN EMERGENCY?
Sometimes - breathing trouble, confusion, or severe weakness

LONG-TERM OUTLOOK
Most recover; swollen nodes and fatigue may linger

Overview

Deerfly fever is a form of tularemia , an infection caused by the bacterium Francisella tularensis . It usually develops after the bite of an infected deer fly. Other biting flies and ticks can spread the same form of tularemia.

The infection typically affects the skin where the bite occurred and the nearby lymph nodes. Lymph nodes are small parts of the immune system found in areas such as the neck, armpits, and groin. The medical name for this pattern is ulceroglandular tularemia .

A small sore or ulcer may form at the bite site. Nearby lymph nodes can become enlarged and painful. Fever, chills, headache, and marked tiredness are also common.

Tularemia can be serious without suitable treatment, but it can usually be cured with

antibiotics like amoxicillin or doxycycline . Early recognition matters because some antibiotics commonly used for routine skin infections do not work reliably against this bacterium.

Symptoms

Symptoms usually begin several days after exposure, although the time can be shorter or longer. You may not remember being bitten because the original bite can seem minor.

The most typical features are:

The skin lesion may begin as a red bump. It can become blister-like or develop a dark crust before forming an ulcer. The sore is often on an exposed area, such as an arm, leg, head, or neck. Its appearance alone cannot confirm deerfly fever because other infections and insect bites may look similar.

The affected lymph nodes are usually in the area that drains fluid from the bite. A bite on the hand or arm may lead to swollen nodes near the elbow or in the armpit. A bite on the leg may affect nodes in the groin. The nodes can remain enlarged after the fever improves. Occasionally, they fill with pus and drain through the skin.

Some people develop swollen lymph nodes without a clear ulcer. Less commonly, tularemia affects the eyes, throat, lungs, or digestive system, depending on how the bacteria entered the body. Cough, chest discomfort, or breathing difficulty may suggest lung involvement rather than uncomplicated deerfly fever.

- Sudden fever, sometimes with chills
- A raised bump that develops into an open sore or ulcer
- Painful, swollen lymph nodes near the bite
- Headache, muscle aches, weakness, or fatigue

Causes and risk factors

Deerfly fever is caused by Francisella tularensis . The bacterium can infect wild animals, particularly rabbits, hares, and rodents. Deer flies can pick up the bacteria while feeding on an infected animal and then pass them to a person through another bite.

A person may have a higher chance of exposure if they:

Tularemia can also spread through tick bites, direct contact with infected animals, contaminated water, or breathing in contaminated dust. For example, mowing over an infected

animal carcass may release bacteria into the air. These exposures may produce a different pattern of illness.

There is no known routine person-to-person spread of tularemia. Living with or caring for someone with deerfly fever does not usually place you at risk of catching it from them.

- Spend time outdoors where deer flies, ticks, and infected wildlife are present
- Hunt, trap, skin, or handle rabbits, hares, or rodents
- Work in landscaping, farming, wildlife management, or veterinary settings
- Handle animal carcasses without gloves
- Drink untreated surface water in an affected area

Diagnosis

A healthcare professional may consider deerfly fever when fever, a skin ulcer, and swollen lymph nodes occur after a possible fly or tick bite. Information about outdoor activities, travel, animal contact, hunting, or landscaping can help identify the likely exposure.

Testing may include:

Antibody tests can be negative early in the illness because the body needs time to produce detectable antibodies. A second blood sample may be needed several weeks after the first if suspicion remains.

Culture can confirm the infection, but F. tularensis requires special laboratory precautions because it can infect laboratory workers. The healthcare professional collecting the sample should alert the laboratory if tularemia is suspected. This allows the sample to be handled safely and tested appropriately.

Samples may come from an ulcer, blood, or fluid taken from an enlarged lymph node. Imaging, such as a chest X-ray, may be used if there are breathing symptoms or concern that the infection has affected the lungs.

Other conditions can cause similar findings, including ordinary bacterial skin infections, cat-scratch disease, certain fungal infections, and other illnesses carried by ticks. Testing and the exposure history help separate these possibilities.

- Antibody blood tests , which look for an immune response to the bacteria
- PCR testing , which looks for bacterial genetic material in a sample
- Culture , which attempts to grow the bacteria from blood, an ulcer, or lymph-node material

Treatment and management

Deerfly fever is treated with antibiotics that are active against F. tularensis . Options include medicines from the aminoglycoside, tetracycline, and fluoroquinolone antibiotic groups. The choice depends on the severity and location of the infection, age, pregnancy, immune health, and whether oral or intravenous treatment is needed.

Treatment may begin before test results return when the symptoms and exposure strongly suggest tularemia. This is because early tests may be negative and bacterial culture may take time.

It is important to take the prescribed antibiotic for the full planned course, even if the fever improves quickly. Stopping early or using an antibiotic that does not work against tularemia can allow symptoms to return. Many antibiotics used for common skin infections are not reliable treatments for this condition.

Fever and general illness often improve before the skin ulcer and lymph nodes do. The ulcer should be kept clean and covered if it is draining. Avoid squeezing or trying to drain swollen lymph nodes yourself.

A lymph node that fills with pus may need drainage by a healthcare professional. This is not necessary for everyone and does not replace antibiotic treatment.

Follow-up may be used to check that the fever has settled, the ulcer is healing, and the lymph nodes are becoming smaller. Repeat testing may also be needed if the first antibody result was negative.

Complications

Most people recover with appropriate treatment. Complications are more likely when treatment is delayed, the infection is severe, or the person has another condition that affects immunity.

Possible complications include:

Severe infection can cause sepsis, an extreme whole-body response to infection that may affect blood pressure and organ function. This is not the usual course of treated deerfly fever, but it requires emergency care.

- An abscess, which is a pocket of pus, in an affected lymph node
- Persistent drainage from a lymph node or skin ulcer

- Infection involving the lungs
- Spread of bacteria into the bloodstream
- Inflammation around the brain and spinal cord, which is rare
- A return of symptoms after incomplete or ineffective treatment

Prevention

Deerfly fever cannot always be prevented because infected flies and ticks may be difficult to see or avoid. You can lower your chance of exposure.

Use an insect repellent registered for protection against biting insects, following its label instructions. Wear long sleeves, long trousers, and closed shoes in wooded, grassy, or brush-filled areas. Check your skin and clothing for ticks after outdoor activity, although tick checks do not prevent deer-fly bites.

Wear gloves when handling rabbits, hares, rodents, or animal carcasses. Wash your hands afterward. Cook wild game thoroughly, and avoid drinking untreated water from lakes, rivers, or streams.

Do not mow or brush-cut over a dead animal. If a carcass must be moved, avoid direct contact and follow local public-health or animal-control advice.

Keep pets protected from ticks and prevent them from handling wildlife when possible. Pets can carry infected ticks or become ill after contact with infected animals, although ordinary contact with a healthy pet is not a common route of infection.

A tularemia vaccine is not routinely available to the general public.

Living with it and what to expect

With effective antibiotic treatment, fever and chills often begin to settle before the visible skin and lymph-node changes. Recovery is not always immediate. Tiredness, reduced stamina, and enlarged lymph nodes can continue for weeks.

The ulcer usually heals gradually and may leave a small scar. A swollen lymph node may take longer to return to its usual size. In some cases, the node softens, drains, or requires a procedure. Persistent enlargement does not always mean that the antibiotic failed, but it should be reviewed if it is worsening or accompanied by renewed fever.

You can usually return to regular activities as your energy and symptoms allow. Cover a

draining lesion with a clean dressing. Ordinary contact with family members, friends, or coworkers does not spread tularemia.

Routine follow-up is important if symptoms have not steadily improved, if laboratory confirmation is still pending, or if a repeat antibody test was planned. A return of fever after treatment should be assessed because relapse can occur.

Most treated cases do not become a chronic infection. However, the pace of recovery differs, especially after a severe illness or delayed treatment.

When to get medical help

Arrange prompt medical assessment if you develop a fever with an unexplained skin ulcer or painful swollen lymph nodes, especially after:

Tell the healthcare professional about the possible exposure. Do not wait for a skin ulcer to appear if you are unwell after a high-risk exposure.

Contact your healthcare professional promptly if treatment has started but fever is not improving, symptoms return, the ulcer is spreading, or a lymph node becomes increasingly painful, red, soft, or draining. These concerns usually need timely review rather than emergency transport.

Seek emergency care for:

These symptoms can occur with severe infection and need immediate assessment.

- A deer-fly or tick bite
- Handling a rabbit, hare, rodent, or animal carcass
- Mowing or brush-cutting near a dead animal
- Drinking untreated surface water
- Outdoor activity in an area where tularemia occurs
- Trouble breathing or new chest pain
- Confusion, fainting, or difficulty staying awake
- Severe weakness or inability to stand
- Blue, grey, or unusually pale lips or skin
- Signs of shock, such as cold clammy skin or very rapid breathing

Common questions

Is deerfly fever the same as tularemia?

Deerfly fever is a form of tularemia. The name usually refers to ulceroglandular tularemia acquired through a deer-fly bite, with a skin ulcer and nearby swollen lymph nodes.

What does a deerfly fever bite look like?

The bite site may start as a red bump and later become a blister, crusted sore, or open ulcer. Nearby lymph nodes may swell. Appearance alone cannot identify tularemia because ordinary bites and other skin infections can look similar.

Can I catch deerfly fever from another person?

Person-to-person spread of tularemia is not known to occur in ordinary circumstances. You do not usually need to avoid someone who has it. A draining wound should still be kept clean and covered.

Will deerfly fever go away without antibiotics?

Symptoms may change over time, but untreated tularemia can last for weeks and may cause serious complications. Suspected infection should be medically assessed because it requires an antibiotic known to work against F. tularensis .

How long does recovery take?

The fever may improve before the ulcer, swollen lymph nodes, and fatigue. Skin and lymph-node changes can take several weeks or longer to settle. Renewed fever or worsening swelling needs follow-up.

Can my dog or cat give me deerfly fever?

Pets can encounter infected wildlife or carry ticks into the home. Direct transmission from pets is uncommon, but bites, scratches, or contact with an animal's mouth after it handles wildlife may create exposure. A sick pet should be assessed by a veterinarian.

Sources

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