

# Contagious Ecthyma

*Orf, Ecthyma Contagiosum, Contagious Pustular Dermatitis, Contagious Pustular Stomatitis, Infectious Labial Dermatitis, Soremouth, Scabby Mouth*

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## Importance

Contagious ecthyma is a highly contagious, zoonotic, viral skin disease that affects sheep, goats and some other domesticated and wild ruminants. The skin lesions are painful and often occur on the mouth and muzzle, where they can cause anorexia or starvation. Lesions on the udder may result in the abandonment of offspring, and foot lesions can cause transient lameness. Secondary bacterial infections can occur and, in rare cases, the lesions may extend into the internal organs. Severe generalized infections have been described in Boer and Boer cross goats. Although contagious ecthyma usually resolves spontaneously and the mortality rate is generally low, fatality rates up to 10% have been reported.

Most infections in humans are localized and heal spontaneously; however, large, poorly healing lesions can occur in people who are immunosuppressed.

## Etiology

Contagious ecthyma results from infection by the orf virus, a member of the genus *Parapoxvirus* in the family Poxviridae.

## Geographic Distribution

Contagious ecthyma has been found worldwide in all countries that raise sheep. In the U.S., this disease is seen most often in the Western states.

## Transmission

The orf virus, which is found in skin lesions and scabs, is thought to enter the skin through cuts and abrasions. This virus can be carried by clinically normal sheep as well as sick animals. It can be transmitted by direct contact or on fomites. The orf virus remains viable on the wool and hides for approximately one month after the lesions have healed. It is very resistant to inactivation in the environment and has been recovered from dried crusts after 12 years.

Contagious ecthyma vaccines contain live virus and can infect humans. Recently vaccinated animals can also transmit infections to humans.

## Disinfection

The best disinfectants for the poxviruses are detergents, hypochlorite, alkalis, Virkon® and glutaraldehyde.

## Infections in Humans

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### Incubation Period

The incubation period in humans is 3 to 7 days.

### Clinical Signs

In humans, contagious ecthyma usually occurs as a single skin lesion or a few lesions. The initial lesion is a small, firm, red to blue papule at the site of virus penetration, most often a finger, hand or other exposed part of the body. The papule develops

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## Diagnostic Tests

Infections in animals are usually diagnosed symptomatically. The diagnosis can be confirmed by electron microscopy of the scabs, which should be collected from animals in earlier stages of the disease. PCR tests are available from some laboratories.

Uncommonly used tests include virus isolation and serology. Virus isolation can be attempted in a variety of cell cultures or embryonated eggs, but the orf virus grows slowly and cannot always be isolated. Serological tests include serum neutralization, agar gel immunodiffusion (AGID), complement fixation and agglutination. ELISA tests have been developed but are rarely used for diagnosis.

## Treatment

There is no specific treatment for contagious ecthyma. Diathermy and cryosurgery have been used to treat intraoral lesions in lambs but may not be economical. Repellents can be used to keep flies away from the wounds, and antibiotics are given for secondary infections. Supportive care, including tube feeding, may be necessary.

## Prevention

To prevent contagious ecthyma from entering an uninfected herd, new animals should be quarantined; some car-

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