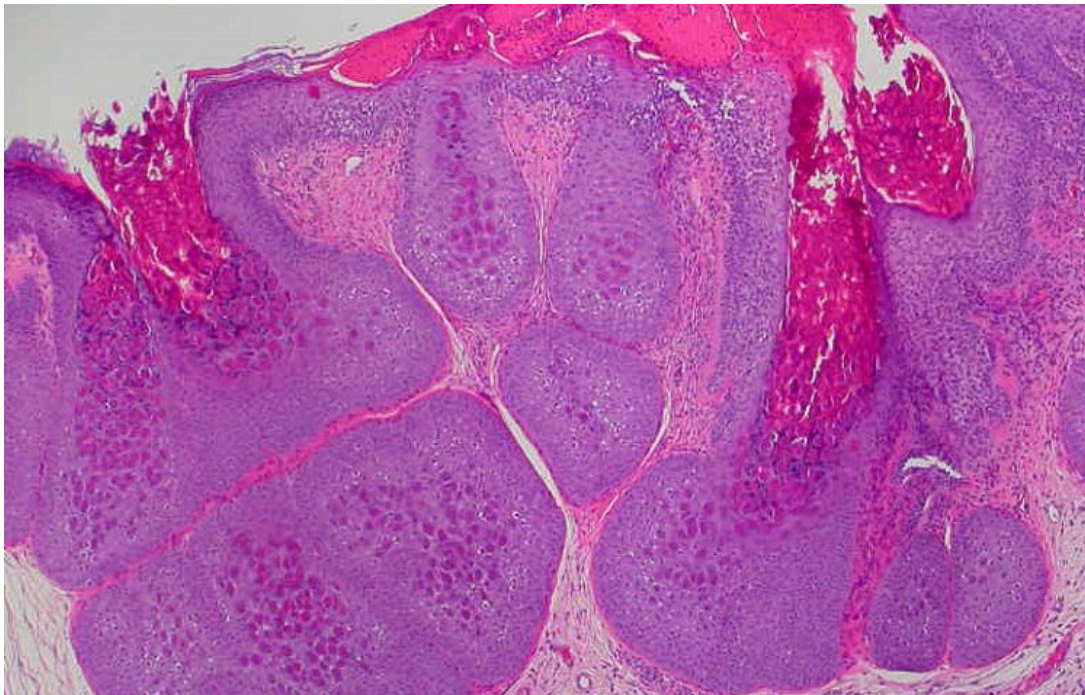


Skin Infections: Erysipelas and Molluscum Contagiosum — Symptoms and Treatment

[See online here](#)

Erysipelas and Molluscum Contagiosum are two different skin infections, the former caused by streptococci, the latter caused by one of the Molluscum Contagiosum viruses. While erysipelas is more common in diabetics and patients with preexisting medical conditions such as lymphedema, Molluscum Contagiosum infection can affect healthy children and adults. Erysipelas treatment includes antibiotics and symptomatic relief. Molluscum Contagiosum therapy consists of neglect, topical treatment, immune response modulators, or antiviral therapy.



Definition of Erysipelas and Molluscum Contagiosum

Erysipelas can be defined as **superficial skin infection** that affects the dermis in addition to the superficial cutaneous lymphatics. The condition is caused by **bacterial agents**.

Molluscum Contagiosum is defined as **viral infection of the skin** that only affects humans resulting in a mild skin rash. The disease is generally mild and should not be a reason for concern or worry. It is not serious and generally clears within 12 - 18 months without treatment. Molluscum Contagiosum causes multiple raised dome-shaped pink

skin lesions that are umbilicated. The virus belongs to the **Poxviridae** family.

Epidemiology of Erysipelas and Molluscum Contagiosum

Erysipelas incidence has been **decreasing** recently since the introduction of **antibiotics**. In the past, most cases of erysipelas occurred in the **face**. Nowadays, 80% of the cases occur in the **lower legs** most likely due to an **aging population**.

Possible **risk factors** for erysipelas include **poor hygiene**, **poor sanitation** and **history of lymphedema**. The peak incidence of erysipelas is in patients **older than 60 years**. History of recent **mastectomy**, **pelvic surgery** or **bypass grafting** increases the risk of erysipelas most likely because of the associated risk of lymphedema.



[Image](#): "Erysipelas of the left ear." by Evanherk - Own work. License: [CC BY-SA 3.0](#)

Molluscum Contagiosum is accountable for at least **1% of all skin conditions** presenting to the treating physician. Hence, the condition is considered as one of the most common skin infections in the United States. Prevalence of Molluscum Contagiosum is **higher in patients with HIV** especially if the CD4 count is less than 100 cells/microliter. Prevalence of Molluscum Contagiosum skin infection in AIDS patients is estimated to be **30%**.

Molluscum Contagiosum infection rates are **higher among whites** compared to other races. **Males** are also more likely to develop the condition. The highest incidence of Molluscum Contagiosum infection is reported to be in **children younger than 5 years** of age. The condition is very rare in children younger than 1 year most likely due to maternally transmitted antibodies against the virus.

Etiology of Erysipelas and Molluscum Contagiosum

The most commonly implicated organism in erysipelas is **streptococci**. Group A streptococci are responsible for most cases of facial erysipelas while non-group A streptococci are the etiology of lower limbs erysipelas. Newborns might also develop

erysipelas that is due to group B streptococci.

Risk factors for developing Erysipelas :

- People with lymphedema
- Nephrotic syndrome
- Arteriovenous insufficiency,
- Diabetes
- Compromised body immunity
- Paretic limbs

Molluscum Contagiosum skin infection is caused by the **exposure to infected people** who have the condition. The virus can be inoculated from other people or from the same patient, i.e. **auto-inoculation**. Most cases have history of **recent skin trauma**, i.e. shaving, because the virus is more likely to invade damaged skin rather than intact skin. Molluscum Contagiosum can also be transmitted sexually, hence it can be considered as a **sexually transmitted disease** in adults.

Three different viruses are thought to be responsible for Molluscum Contagiosum disease. **Orthopoxvirus, Parapoxvirus** and **unclassified Poxviridae viruses**.

Pathophysiology of Erysipelas and Molluscum Contagiosum

Once streptococci get entry to damaged skin, especially if the patient has lymphedema, the infection quickly invades the **lymphatic vessels** in the superficial layers of the skin. There, the bacteria start spreading in the lymphatic vessels, and the skin overlying the infected area develops streaking. **Regional lymphadenopathy** happens.



[Image](#): "Molluscum contagiosum." by Evanherk from nl. License: [CC BY-SA 3.0](#)

Molluscum Contagiosum viruses enter the cytoplasm of the epithelial cells where they replicate. The infected cells enlarge in size and develop **cytoplasmic inclusions**. The virus can only replicate in the epidermis and is thought to **exclusively affect humans**. While the virus initially resides in the basal cell layer, it is noted that viral replication and DNA synthesis only happen after 7 weeks. Therefore, it is suggested that the virus can only replicate once it is in the spindle and granular layers of the epidermis.

Viral replication and infection of the epidermis cause epithelial cell proliferation and the formation of **lobulated epidermal growth**. Additionally, **fibrous septa** between the

epidermal growths occur, which eventually leads to the formation of the characteristic skin lesions associated with the virus. The virus does not develop latency, instead, it evades the immune system by tricking it with **viral-specific proteins**.

Clinical Presentation of Erysipelas and Molluscum Contagiosum

Recent history of **minor skin trauma** can be noted in a few cases of erysipelas but most cases happen without any precedent event. Here are some of the common **prodromal systemic symptoms** often experienced by patients before the onset of skin infection ;

- **Chills**
- **High fever**
- Infected site is **tender to** palpation
- **Burning sensation**
- **Nausea**
- **Muscle pain** and headaches

Previous medical history of diabetes, hypertension, and lymphedema are usually present.

Patients infected with **Molluscum Contagiosum** are usually **asymptomatic**. If patients develop any symptoms, they usually complain of recent onset of **rounded dome-shaped skin lesions** that can be multiple or single. These lesions are **tender** and **painful**. Fever, nausea, and fatigue are not common in this condition.

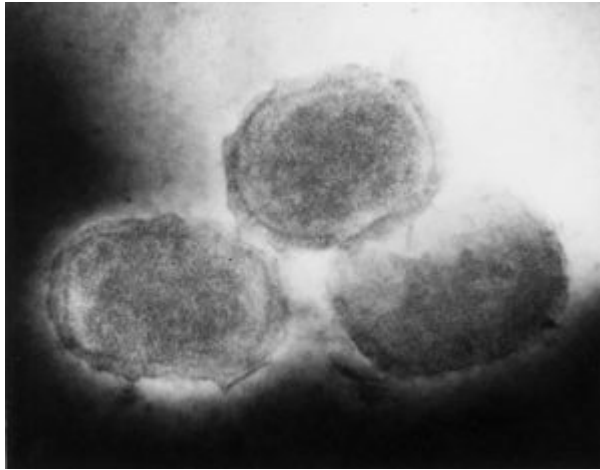
Patients with certain skin conditions such as **eczema** or **psoriasis** are more likely to have more spread of the viral infection. Once the patient scratches the skin lesions, **auto-inoculation** happens and new lesions can form in the scratched areas. Multiple lesions can last up to 3 years while single lesions usually resolve within two months. Recent history of **contact with an infected individual** might be elicited in a number of cases.

People with a history of **HIV infection** are at an increased risk of severe widespread erysipelas and Molluscum Contagiosum infections.

Diagnostic Workup for Erysipelas and Molluscum Contagiosum

Erysipelas is a clinical diagnosis and laboratory investigations are not needed. If **blood testing** is performed, patients can have **leukocytosis**, **elevated erythrocyte sedimentation rate** and **increased C-reactive protein levels** in the blood.

Patients with **severe joint pain** might have **septic arthritis** or **osteomyelitis**. In these patients, **magnetic resonance imaging** and **bone scintigraphy** can be helpful. Blood and skin cultures can confirm the presence of bacterial infection but are usually negative, therefore, they are not recommended.



[Image:](http://phil.cdc.gov/PHIL/Images/08061998/00006/B81-166_lores.jpg) "Transmission electron micrograph of poxvirus of molluscum contagiosum." by Unknown - http://phil.cdc.gov/PHIL/Images/08061998/00006/B81-166_lores.jpg. License: Public Domain

Similarly, Molluscum Contagiosum is also a clinical diagnosis. The skin lesions of Molluscum Contagiosum are very characteristic and are usually enough for the diagnosis. If a **biopsy** is performed, **intracytoplasmic inclusion bodies** can be seen on histologic examination.

Compression of the lesions can reveal a **pasty core** which if stained properly is usually abundant with the virus particles. **Serum specific antibodies** against Molluscum Contagiosum viruses are not clinically indicated but they are available for research indications.

Polymerase chain reaction testing is available for quick and accurate confirmation of the presence of the virus in the skin lesions. Viral cultures do not have a role in Molluscum Contagiosum because routine cultures are not known to grow the virus. Adults with Molluscum Contagiosum are at risk of other sexually transmitted diseases and should be examined and offered the appropriate diagnostic workup to exclude them.

Differential Diagnosis of Erysipelas

Erysipelas is a type of soft-tissue infection and should be differentiated from another similar dermatological condition, called: Cellulitis.

Cellulitis	Erysipelas
Acute infection of Dermis & Deep subcutaneous tissue	Acute superficial infection of Dermis & upper S.C tissue.
<ul style="list-style-type: none"> • Etiology : 1. Staphylococcal aureus & 2. Group A beta-hemolytic Streptococci are the most common agents. 	<ul style="list-style-type: none"> • Etiology : 1. Group A beta-hemolytic Streptococci (GAS) (Organism enter the skin through absrasions)

<ul style="list-style-type: none"> • Clinical features : 1. Systemic signs : - High-grade fever with rigors & malaise, fatigue, confusion 2. Local signs: - Generalized swelling which is erythematous, warm, tender, less well-demarcated than erysipelas. Lesions are primarily NOT raised, with ill-defined borders. Necrotic changes in deeper tissues are NOT seen. 	<ul style="list-style-type: none"> • Clinical features : 1. Local signs: - Erythematous, warm, tender , oedematous, indurated , Raised & Sharply-demarcated PLAQUE - In severe cases, overlying epidermis may show: Bullae, Pustules or Necrosis usually occurs over the cheek 2. Lymphatic involvement: - Overlying skin streaking & regional lymphadenopathy indicate lymphatic involvement.
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Treatment of Erysipelas and Molluscum Contagiosum

Erysipelas

Treatment of erysipelas consists of **two main components** - **prompt antibiotic administration** and **symptomatic treatment**. Symptomatic treatment for fever and headache, adequate hydration, cold compresses of the affected lower limb and elevation of the affected limb are essential to avoid the spread of the infection.

Penicillin administration orally or intramuscularly is the antibiotic of choice for the treatment of erysipelas. Patients with penicillin allergies can be prescribed a first-generation **cephalosporin**. **Clindamycin** is a second-line antibiotic because some group B streptococci might be resistant. **Roxithromycin** and **pristinamycin** are two recently approved drugs for the treatment of erysipelas. They are superior to penicillins and with fewer side effects.

Molluscum Contagiosum

Treatment options for Molluscum Contagiosum can be **neglect, direct lesion trauma, antiviral therapy** and **immune response stimulation**. Children and healthy individuals should be assured that the lesions will eventually disappear and should be advised to simply neglect them.

Those who refuse this approach can benefit from **minor direct lesion trauma**. **Cryotherapy** with liquid nitrogen and **curettage** are the most commonly used forms of direct lesion trauma. They are effective but can be painful and not comfortable for a child.

Imiquimod is a drug that was found to activate the immune response against Molluscum Contagiosum. Despite its efficacy, the cost of applying this product is deemed too high to be considered as first-line therapy for the disease in healthy individuals.

Immunocompromised patients with Molluscum Contagiosum are at risk of severe and extensive infections, therefore, **ritonavir** and **cidofovir intravenously** should be used. These antiviral drugs have been continuously shown to be effective in the treatment of

extensive Molluscum Contagiosum disease in AIDS patients.

References

[Molluscum Contagiosum](#) via medscape.com

[Erysipelas](#) via medscape.com

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Notes