

Zoster (herpes zoster/shingles)

Zoster (also called shingles) is caused by varicella zoster virus (VZV), the same virus that causes varicella. After a person recovers from varicella VZV remains dormant in the dorsal root ganglia and can reactivate many years later causing zoster. Although zoster most often develops in persons with a history of varicella disease, the attenuated virus in the varicella vaccine can also establish latency and reactivate as zoster.

Almost 1 out of 3 people in the U.S. will develop zoster in their lifetime. Adults ≥ 50 years of age and immunocompromised persons are at increased risk of developing zoster and risk increases with increasing age, most likely due to a decline in VZV-specific cell-mediated immunity. Most people will only have zoster only once in their lifetime, but it is possible to have additional episodes. Zoster vaccine is recommended for persons ≥ 60 years of age regardless of their zoster history.

*Immunocompromised from illness or medications, such as HIV/AIDS, cancer, recent organ transplant, chemotherapy, immunosuppressive medications or long-term use of steroids.

Signs and symptoms

The first visible symptom of zoster is a painful vesicular rash. Vesicles typically dry and crust in 7-10 days, clearing completely within 2-4 weeks. In the 1-5 days prior to developing the rash, people often have pain, itching, or tingling in the location where the rash will appear.

People with zoster most commonly have vesicles in one or two adjacent dermatomes (localized zoster). The rash most commonly appears on the trunk along a thoracic dermatome. The rash typically doesn't cross the body's midline and develops on only one side of the face or body in a single stripe or belt spanning 1-2 adjacent dermatomes.

Laboratory diagnosis of VZV/zoster

Laboratory testing cannot distinguish between zoster and varicella since the same virus causes both; however, laboratory testing can determine whether VZV is present by:

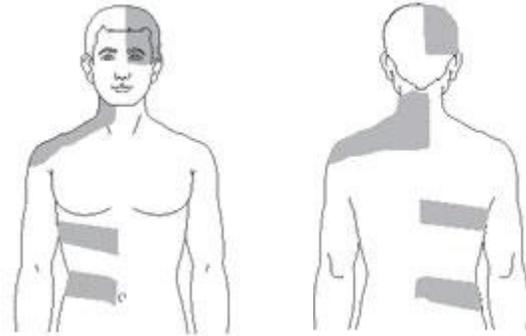
- Isolation of VZV from a clinical specimen; or
- VZV antigen detected by direct fluorescent antibody test; or
- VZV-specific nucleic acid detected by polymerase chain reaction (PCR).

Disseminated zoster

Zoster rash is more widespread and affects 3 or more dermatomes. This generally occurs only in immunocompromised people. Disseminated zoster can be difficult to distinguish from varicella.

Dermatomes

A dermatome is an area of skin that is mainly supplied by a single spinal nerve.



Zoster complications

- Postherpetic neuralgia (PHN)*
- Ophthalmic involvement with acute or chronic ocular sequelae (herpes zoster ophthalmicus)
- Bacterial superinfection of the lesions
- Cranial and peripheral nerve palsies
- Visceral involvement, such as meningoencephalitis, pneumonitis, hepatitis, acute retinal necrosis

*Pain that persists after resolution of zoster. The most common complication of zoster, PHN typically resolves after a few weeks or months, but can occasionally last for years. The risk of PHN increases with increasing age.

Treatment of zoster

- Antivirals, i.e., acyclovir, valacyclovir, and famciclovir, can reduce the length and severity of illness. To be effective, they must be started as soon as possible after rash onset.
- Analgesics may help relieve the pain. Wet compresses, calamine lotion, and colloidal oatmeal baths may help relieve itching.

Infectious period

Persons with zoster do not transmit zoster to others. However, they can transmit VZV, which can cause varicella in susceptible people. The infectious period begins when vesicles occur and ends when the vesicles have dried and developed crusts. A person is not infectious before vesicles appear.

VZV transmission from a person with zoster

Transmission of VZV from persons with zoster occurs via direct contact with fluid from zoster lesions or aerosolization of lesion material. There is also some evidence that VZV is shed in the respiratory secretions of persons with zoster. Persons with disseminated zoster are more infectious than persons with localized zoster.

Definition of zoster/VZV exposure

- Exposure to immunocompetent person with localized zoster
 - Contact with lesions; e.g., via close patient care, touching, or hugging.
 - If contact precautions are being implemented, it is not an exposure.
- Exposure to immunocompetent or with disseminated zoster; **OR**
- Exposure to immunocompromised person with localized or disseminated zoster
 - Contact with lesions, e.g., via close patient care, touching, or hugging; or
 - Sharing indoor airspace with the infectious person (for example, occupying the same room).
 - If contact and airborne precautions are implemented, it is not an exposure.

Preventing the spread of VZV from zoster cases

- Keep rash covered.
- Avoid touching or scratching the rash.
- Wash hands often, particularly after contact with the rash.
- Until crusting, avoid contact with high risk persons who are not immune to varicella, infants <1 year of age, immunocompromised persons (such as persons receiving immunosuppressive medications or undergoing chemotherapy, organ transplant recipients, and people with HIV infection).

Management of patients with zoster

Immunocompetent patients with:

- Localized zoster
 - Use standard precautions and completely cover lesions.
- Disseminated zoster
 - Use standard precautions plus airborne and contact precautions until lesions are dry and crusted.

Immunocompromised patients with:

- Localized zoster
 - Use standard precautions plus airborne and contact precautions until disseminated infection is ruled out, then use standard precautions until lesions are dry and crusted.
- Disseminated zoster
 - Use standard precautions plus airborne and contact precautions until lesions are dry and crusted.

Management of healthcare personnel with zoster

Immunocompetent HCP with:

- Localized zoster
 - Cover lesions; restrict from care of high-risk patients† until all lesions dry and crusted.
- Disseminated zoster
 - Restrict from patient contact until all lesions dry and crusted.

Immunocompromised HCP with:

- Localized or disseminated zoster
 - Restrict from patient contact until all lesions dry and crusted.

†Those who are susceptible to varicella and at increased risk of varicella complications, such as pregnant women, neonates, and immunocompromised persons of any age.

Management of infant care providers with zoster

- Persons with localized zoster working with infants <1 year of age
 - Cover lesions and restrict from care of infants less than 1 year of age

Postexposure prophylaxis for persons susceptible to varicella exposed to a patient with zoster

The recommendations are the same as those for susceptible persons exposed to varicella patients. Please consult the CDPH varicella quicksheet for information on assessing varicella immunity and recommendations for postexposure prophylaxis at: <http://www.cdph.ca.gov/programs/immunize/Documents/CDPHVaricellaQuicksheet.pdf>

State reporting requirements

- Zoster cases are NOT reportable, but CDPH is interested in learning about deaths or hospitalizations attributed primarily to zoster.