

# Manifestations of Viral Diseases of the Oral Mucosa, Herpes Simplex and Herpes Zoster, Herpangina, Clinical Features, Comparative Diagnosis and Treatment

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**Annotation:** Shingles, also known as herpes zoster, is a viral infection that occurs when the varicella-zoster virus becomes active and remains dormant in the body after a chickenpox infection. The virus enters the body through the skin and mucous membranes, causing characteristic symptoms such as redness, itching, blisters, and a painful rash. The intercostal or trigeminal nerves are most often affected. The rash is accompanied by severe pain.

Herpes spreads through the body, as if following the nerve trunk, which is why it got its name. The incubation period of this disease can last from several days to several weeks, during which the virus actively multiplies in skin cells and nerve endings. Shingles occurs mainly in people over 50 years old, both women and men, because with age the immune system weakens and the body is unable to resist the virus. The development and course of the disease cannot be predicted, its initial symptoms can vary significantly and depend on the form of the disease and its severity.

**Keywords:** Dermatologist, Venereologist, Forms, types and degrees of shingles, Specific symptoms and appearance of shingles, The main form of lichen in clinical

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practice, Typical and atypical forms.

### Login part:

The typical form is gangliocutaneous, the most common form of the disease. It begins acutely and is manifested by general malaise, fever, mild itching, tingling, and severe pain in the areas of future rashes. Against the background of these spots, pink spots with a diameter of 3-5 cm form along individual sensory nerves. After 18-24 hours, vesicles with a transparent content appear, which later become turbid.[1]

The rash is most often localized on the chest, but can also occur along any sensory nerve, mainly on one side, in a belt-like pattern. These rashes disappear within 2-4 weeks. The blisters dry up and form crusts, which then fall off, leaving a light pigmentation. The pain sometimes reaches such intensity that it is difficult to endure; It is aggravated by light touch, cold or movement.[2]



In some cases, the disease is accompanied by toxic symptoms and neuropathic pain, although the rash may be absent. Once the rash appears, the pain usually becomes less severe.

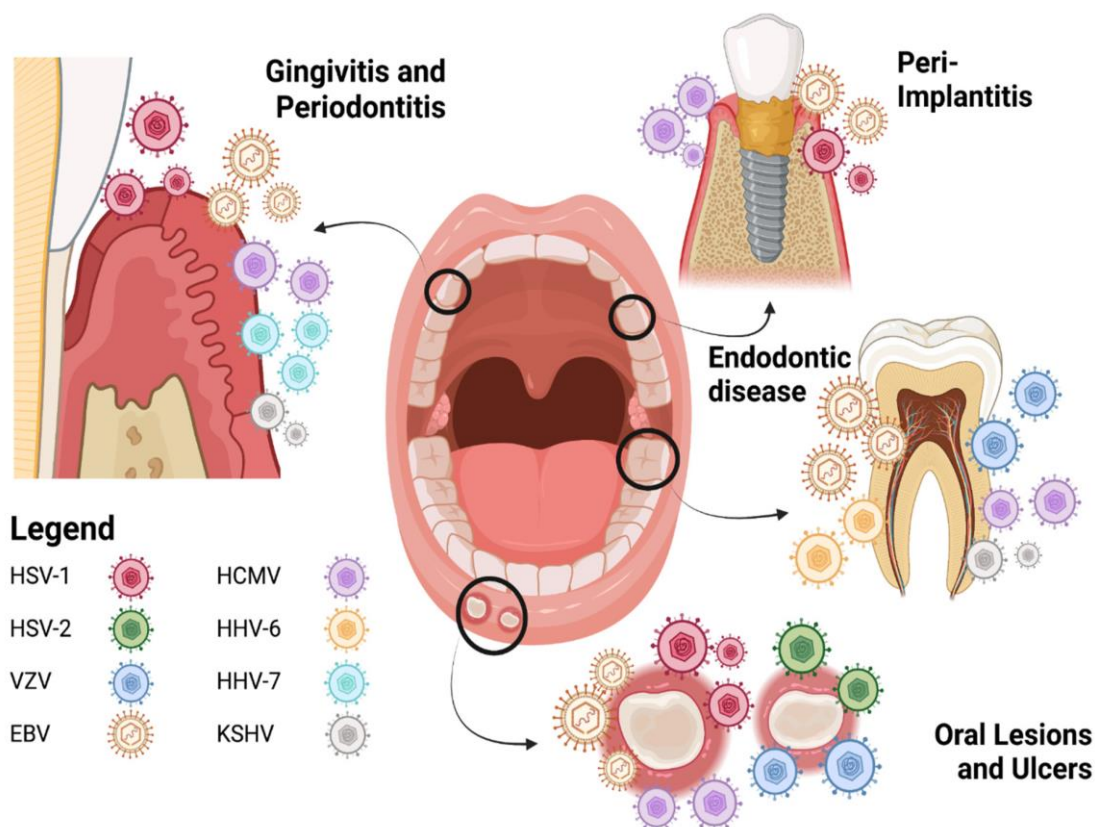
- a. The gangliocutaneous form, in turn, is divided into types:
- b. Abortion - no rash or a single lesion.
- c. Vesicular - redness of the skin and the formation of blisters.
- d. Pustules - red skin and vesicles, often with purulent contents.

Bullosis is a more severe form, in which the vesicles merge into large blisters with hemorrhagic or purulent contents.[3]

All types of the disease can affect the nodes of the autonomic nervous system, which leads to the appearance of symptoms that are rare for this disease: problems with urination, constipation or diarrhea.:

Eye and ear forms - rashes are localized along the branches of the trigeminal nerve and appear on the skin and mucous membranes of the eyes, nose and face. Most often, the eyeball itself is affected. In addition to the rash, severe pain and swelling of the eyelids, corneal ulcers and photophobia appear.[4]

In the aural form of the disease, the geniculate ganglion is affected, and a rash appears in and around the auricle, and can also be observed in the external auditory canal. Before the rash appears, patients have symptoms of general intoxication and an increase in body temperature. With this form of the disease, facial nerve paralysis may develop. In this case, the face becomes asymmetrical and is tilted to one side.



Hemorrhagic - the blisters are filled with bloody exudate and heal, forming scars.

Gangrenous (necrotic) - most often observed in elderly patients and people with weakened immunity. This type is characterized by severe damage to the skin tissue, which leads to necrosis and scarring. It can be assumed that bacterial infection plays an important role in the development of this form of the disease.[5]

Diffuse (generalized) - a rash in the form of bubbles, localized bilaterally throughout the body.

#### Research methods and materials:

The meningoencephalitic form is very rare. This form is severe, with a mortality rate of more than 60%. The initial stage is characterized by gangliocutaneous manifestations, which most often occur in the intercostal and cervical regions. After some time (usually from 2-3 to 20 days), meningoencephalitis develops, which indicates brain damage. These include: ataxia (impaired coordination of movements), hallucinations (patients may see things that are not there), and loss of consciousness leading to coma.[6]

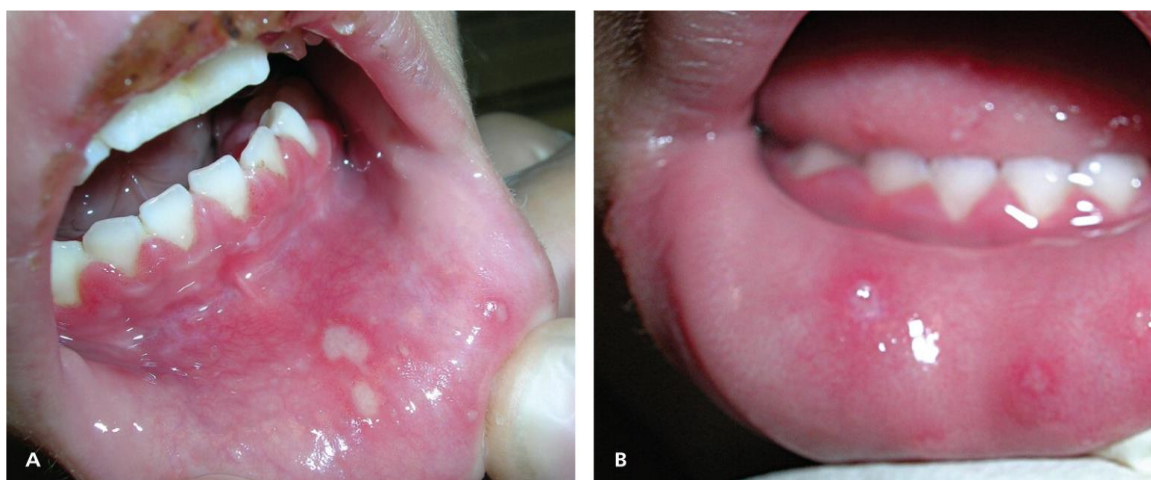
Shingles can be one of the first signs of HIV infection and can be more severe. These patients often develop herpes zoster, a common form of chickenpox. The time it takes for the rash to appear can be as long as a week, and the scabs may begin to dry as early as the third week after the onset of infection.

Mild - a skin rash appears, which can appear anywhere on the body, but is most often observed on the chest and abdomen.[7]

Moderate - This type of rash is characterized by severe pain and burning that covers a large area of the skin and runs along the nerves. Patients may experience headaches, fever, and muscle and joint discomfort. Symptoms can last for three to four weeks.

Severe form - this stage is characterized by severe pain and burning, which can limit mobility and worsen the patient's general condition. The rash affects a large part of the body and can be very painful. Symptoms can last up to six weeks and may require hospitalization to relieve pain and prevent complications.[8]

Unlike chickenpox, shingles does not cause a sudden onset of the disease, especially in children in children's groups, and does not show a clear seasonal pattern. However, some researchers have found that the disease is more common in the warm season and late autumn. The severity of the disease varies with age: adolescents and children who have previously had chickenpox usually have milder shingles than older patients.



The main symptom of this disease is a painful red rash that appears on one side of the body. The rash appears in the form of small fluid-filled blisters that gradually dry out and crust over. Depending on the affected nerve, the rash can be localized in different areas: the back, head, neck, abdomen, chest, face in the area of the eyes, mouth and ears. Postoperative neuralgia may develop: a person may develop postherpetic neuralgia - chronic pain in the area where the symptoms previously appeared.[9]

Most people who get sick experience a general malaise, including fever, headache, muscle aches, nausea, weakness, and swollen lymph nodes. The severity of these symptoms varies among patients, and the initial stage of the illness lasts about four to five days.[10]

Clinical signs may resemble pleurisy, trigeminal neuralgia, or acute appendicitis, which require emergency medical attention. Proper treatment can help reduce fever and eliminate symptoms of intoxication in adults.

The rash usually disappears within 2-3 weeks. The prognosis is favorable in young and relatively healthy people. However, the elderly are at increased risk of developing complications. Particularly at risk are cancer patients who have undergone radiation and chemotherapy. In chronic cases, symptoms may persist longer, but eventually the pain, rash, and other clinical manifestations disappear. When the organs of vision are damaged, a decrease in visual acuity may occur. The presence of complications negatively affects the prognosis.[11]

### **Causes of shingles**

The pathogen that causes chickenpox and shingles is transmitted from person to person by airborne droplets, direct contact, and can also be transmitted from mother to child through the placenta.

Primary infection usually leads to chickenpox. The virus penetrates through the skin and mucous membranes, after which it reaches the intervertebral nodes and dorsal roots of the spinal cord through the blood and lymphatic vessels, where it can remain in a latent state for a long time, like the herpes virus. There it begins to actively multiply. After recovery, the virus remains in the body in an inactive form for life.[12]

**The main reasons contributing to the development of the disease:**

- a. general hypothermia of the body;
- b. prolonged exposure to stress and physical fatigue;
- c. use of immunosuppressants;
- d. malignant neoplasms;
- e. effects of radiation and chemotherapy;
- f. human immunodeficiency virus (HIV);
- g. organ and bone marrow transplantation.

Predisposing conditions include age over 55 years, pregnancy, and long-term treatment with antibiotics and glucocorticosteroids. Patients with weakened immune systems, the elderly, and those who have experienced severe stress should be under special supervision.[13]

In most cases, the diagnosis does not present any difficulties for the doctor. After a careful questioning and examination of the patient, everything becomes clear. The specialist pays attention to the characteristics of the rash (one-sidedness, location), the appearance of blisters, and complaints of severe burning pain.[14]

In cases of atypical course of the disease, the diagnosis is more difficult to establish. With latent manifestations, neurological symptoms may not be present. If neurological disorders are observed, the diagnosis can be established on the basis of laboratory tests.

To confirm the viral nature of the rash, a Tzanck test is used, in which a scraping is taken from the base of the vesicles, where multinucleated giant cells can be identified. However, this method does not allow to determine the type of virus.

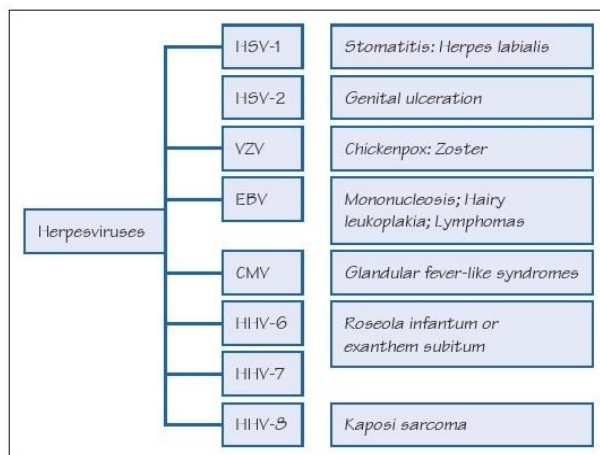


Figure 9.1 Herpesviruses and their diseases.

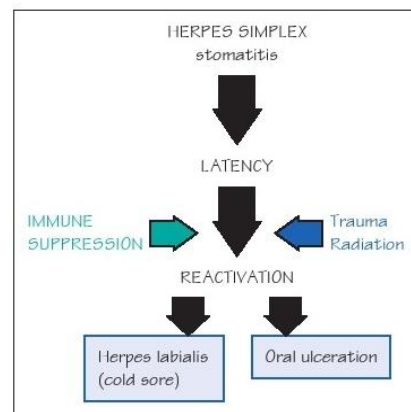


Figure 9.2 HSV pathogenesis.



Figure 9.3 Herpetic stomatitis.



Figure 9.4 Primary herpetic gingivostomatitis.

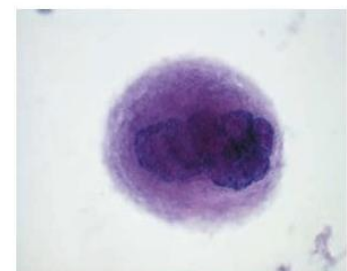


Figure 9.5a Herpes cytology.

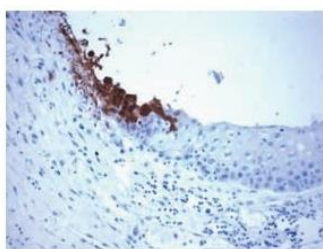


Figure 9.5b Herpes immunostaining.

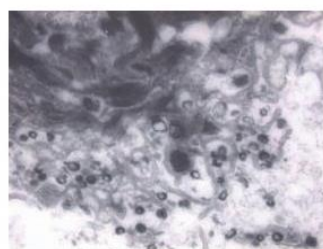


Figure 9.5c Herpes electronmicroscopy.



Figure 9.6 Herpes simplex recurrence (herpes labialis).

If appropriate indications are present, ELISA or PCR may be recommended.

In the early stages, before the rash appears, it is important to make a differential diagnosis with trigeminal neuralgia, pleurisy, and acute appendicitis. If the rash does not correspond to the distribution of nerves, it is necessary to differentiate from infections caused by the herpes simplex virus and chickenpox.

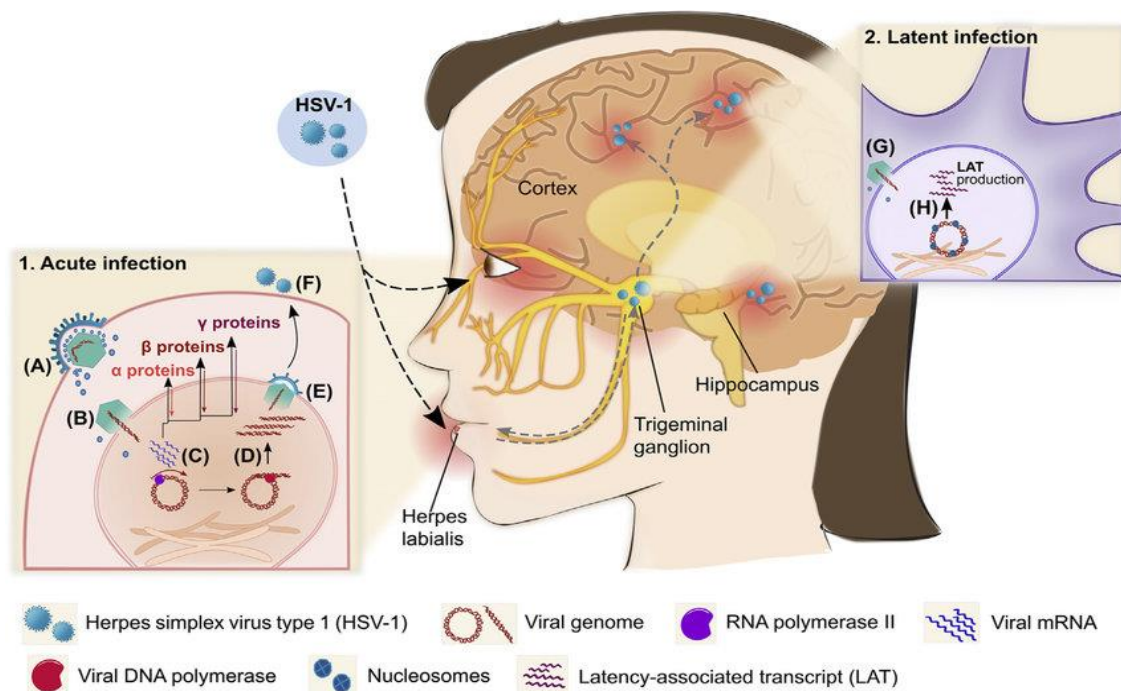
If you experience any of these symptoms, we recommend that you make an appointment with your doctor. Timely consultation can prevent negative consequences for your health.

You can get detailed information about the disease, treatment costs, and make an appointment with a specialist by calling the following numbers:

Most patients with a generalized form of the disease can be treated at home. Hospitalization in an infectious diseases department is required only in severe cases of herpes zoster. The approach to treating this condition should be comprehensive, with an emphasis on reducing symptoms and shortening the duration of the disease.

Treatment should be started as early as possible - no later than seven days after the onset of the first symptoms and no later than three days after the appearance of the rash. If therapy is started later, its effectiveness is significantly reduced, as the virus reaches its maximum level of

proliferation and causes immuno-neuropathological reactions.



The main way to combat the disease is to use high doses of antiviral drugs such as acyclovir, valacyclovir, and famciclovir, which slow the spread of the virus and speed up the healing of the skin rash. Pain management is also important: NSAIDs or analgesic therapy are prescribed to reduce discomfort associated with nerve damage. Stronger opioid drugs may be prescribed for severe pain.

In addition, glucocorticosteroids may be prescribed to reduce inflammation, and antihistamines to improve the patient's condition. For local use, acyclovir-based ointments and gels are prescribed, which help relieve itching. You can also use zinc oxide powder and brilliant green solution. Physical therapy and home remedies may be useful, but their use should be discussed with a doctor.

### Results:

Symptoms of shingles in pregnant women are similar to those in non-pregnant women, but may be more severe due to the weakened immune system associated with pregnancy. They include:

Prodromal period (a few days before the rash appears) - weakness, headache, fever, malaise, pain at the site of the future rash (often described as burning, tingling, or itching). This period can be especially pronounced in pregnant women.[15]

Figure 9.1 Herpesviruses and their diseases.



Figure 9.3 Herpetic stomatitis.



Figure 9.4 Primary herpetic gingivostomatitis.

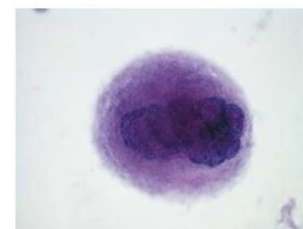
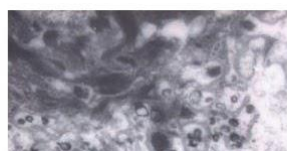


Figure 9.5a Herpes cytology.



Severe pain is a characteristic symptom that often precedes the appearance of the rash and continues after it has healed. The pain can be unbearable and long-lasting (postherpetic neuralgia).

The appearance of the rash may be accompanied by hyperthermia.

Causes of shingles in pregnant women

The main cause is the reactivation of the varicella-zoster pathogen, which "sleeps" in the nerve endings after chickenpox. Pregnancy itself can contribute to the activation of the virus for the following reasons:

Emotionally stressful situations.

Chronic diseases that weaken the immune system.

Age - pregnant women over 40 years old.

Treatment is prescribed by a general practitioner in conjunction with an obstetrician-gynecologist. Commonly used:

Antiviral drugs - Acyclovir - its use during pregnancy should be carefully considered by a doctor, taking into account the potential risk to the child and the benefit to the mother. In some cases, other antiviral drugs may be prescribed.

Analgesics - painkillers approved for use by pregnant women - may be prescribed to relieve pain.

Antiseptic agents and creams are prescribed to reduce itching:

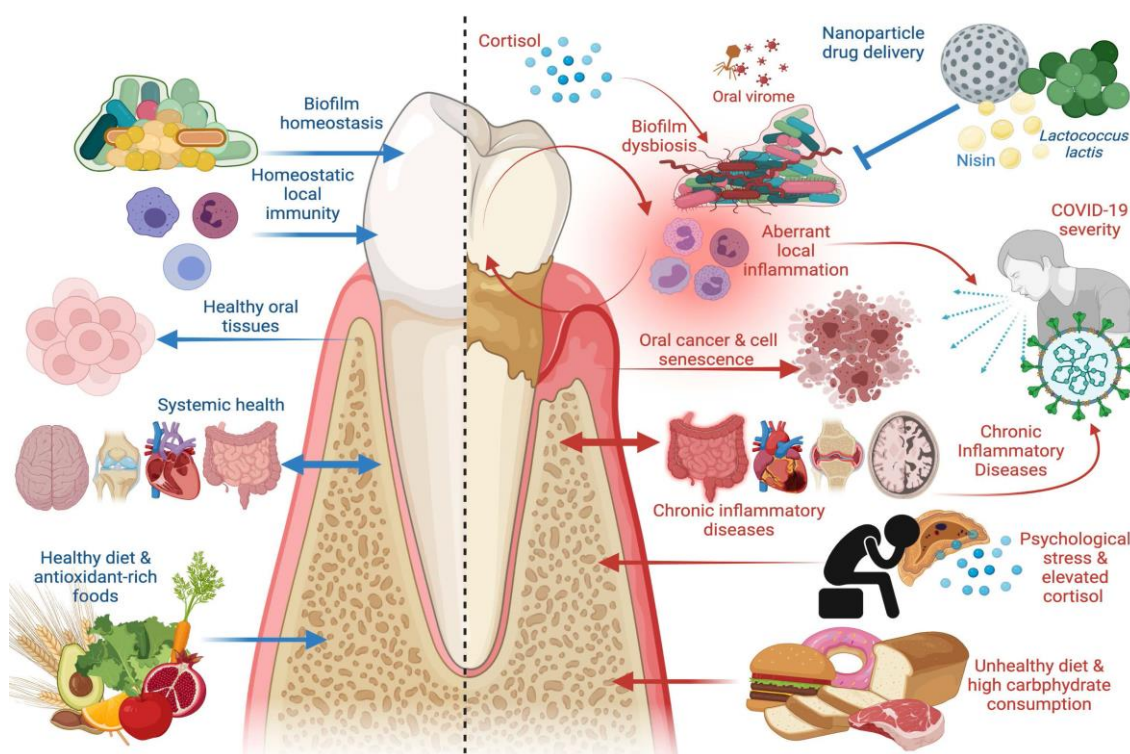
If a woman has not had chickenpox before becoming pregnant and has not been vaccinated against it, it is best to get vaccinated before becoming pregnant. Vaccination is strictly contraindicated if pregnancy has already occurred.

Avoiding contact with people who have chickenpox is especially important for pregnant women, who are not immune to the disease.

It is important to note that if a pregnant woman experiences symptoms similar to shingles, she should immediately consult a doctor for diagnosis and appropriate treatment. An early visit to the doctor significantly reduces the likelihood of complications for the mother and her baby.

For the mother: The main risk is severe pain that significantly impairs quality of life and sleep. In rare cases, serious complications such as bacterial skin infections, encephalitis (inflammation of the brain) or disseminated encephalomyelitis (inflammation of the brain and spinal cord) can occur.

For the fetus: Shingles is most dangerous in the first and third trimesters. If a pregnant woman gets shingles 5 days before or within 5 days of giving birth, there is a risk of transmitting the virus to her newborn, which can lead to the development of congenital chickenpox. Congenital chickenpox is very dangerous and can lead to serious consequences: physical defects, premature birth, and even death of the newborn. In addition, if the mother has shingles during pregnancy, the fetus can be infected through the placenta, but this is rare.



### Discussions:

Shingles prevention is key to staying healthy, especially for those who have had chickenpox. To reduce the chances of developing this disease, it is recommended to follow a few simple but effective tips:

- a. Shingles vaccination significantly reduces the risk of contracting the disease. Vaccination is especially recommended for those over 50 years of age and those with weakened immune systems;
- b. separate sick people from healthy people, especially those without a history of chickenpox;
- c. avoiding any contact with people with active chickenpox or shingles to reduce the risk of infection;
- d. observe hygiene standards - do not use other people's things and hygiene products;
- e. strengthening the immune system - hardening, physical activity and walking in the fresh air;
- f. maintaining a balance between work and leisure;
- g. eat right - eat five to six times a day in small portions, minimize fast food products and increase the share of fresh fruits and vegetables;
- h. giving up bad habits;
- i. control stress levels;
- j. adequate sleep;
- k. timely treatment of viral infections.

### Conclusion:

In addition, it is necessary to monitor the condition of the skin and treat any damage with antiseptics to prevent infection. People with weakened immune systems should carefully monitor their health and immediately consult a doctor if the first signs of ill health appear. Following these tips will significantly reduce the likelihood of contracting shingles, which in turn will help maintain a high quality of life and prevent unnecessary suffering.

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