

# Chickenpox

**Chickenpox** (**varicella**, Slovak **sheep pox**) is one of the most common pediatric infectious exanthema diseases. It is caused by the varicella-zoster virus (VZV) family *herpesviruses*. It is a highly contagious disease that is transmitted primarily through direct contact. The incubation period is about 2 weeks. It is manifested by itchy vesicular rash and enanthema, which appears in waves, so all stages (macula, papule, vesicle, crust) are present on the body at the same time. It can be severe in immunocompromised individuals. The disease leaves lifelong immunity. When the virus is reactivated, it is formed **shingles**. Vaccination against varicella is voluntary. <sup>[1]</sup>

## General characteristics

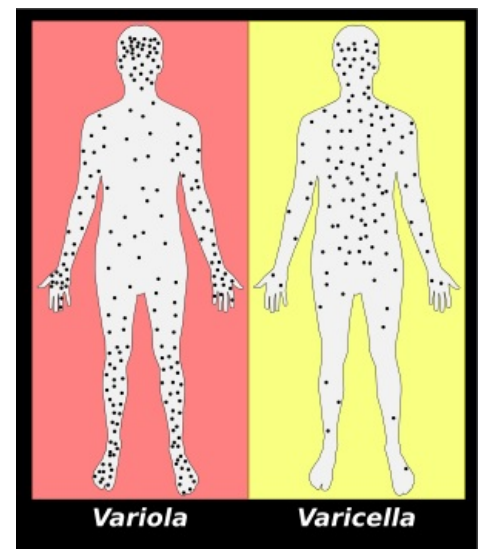
- typically aged **1-6 years**<sup>[2]</sup>;
- *highest incidence*: during winter and spring;
- *transmission*: **droplets** or **direct contact** with lesions;
- *incubation*: **14-16 days**,<sup>[2]</sup> more usually 1-3 weeks <sup>[3]</sup>;
- infectivity starts 2 days before the onset of blisters and ends together with the covering of the last blisters with crusts <sup>[2]</sup>;
- occurs after the disease **long-term immunity**;
- during *primary infection* the disease occurs with **generalized rash** – chickenpox - after *healing* the virus persists in the cells of the sensitive ganglia of the cerebral and spinal nerves and may reactivate;
- **reactivation** of the virus causes **shingles**.

## Epidemiology

- The reported incidence of varicella in the Czech Republic in the years 2000–2009 is 33,500–52,500 cases per year, ie 330-515 patients per 100 000 population per year. <sup>[4]</sup>

## Clinical picture

- the **rash** usually starts at **head and torso**, from where it **spreads** throughout the body;
- *development of rash*: red **macules** → **papules** → **vesicles** → **pustules** → **crusts**<sup>[2]</sup>;
- the simultaneous **occurrence of different stages** is typical (sowing in several waves for 2-5 days);
- the rash also appears in *forehead*, it tends to be more on the torso and in places of skin irritation;
- also on the *mucous membranes* of the mouth - it quickly turns into small **sores**;
- *other symptoms*:
  - headache,
  - **anorexia**,
  - **upper respiratory tract infection**,
  - fever,
  - **itching**<sup>[2]</sup>,
- in *adults* often prodromes - fever and greater alterations in general condition, **more complications**;
- in *healthy children* it usually takes place without complications;
- we will encounter a **more difficult course**:
  - in *neonates* and *infants of mothers* who did not have varicella;
  - in *malnourished* and *weakened* (congenital immune defects], malignancies, immunosuppression, etc.):
    - rich distribution of efflorescences on the skin and mucous membranes;
    - lungs or liver involvement;
    - development of hemorrhagic diathesis - this is called *progressive varicella* .



chickenpox (varicella)

## Diagnostics

- *clinically* : typical **rash**, its distribution and development;
- *serology* : VZV **IgM**;
- *direct detection of virus* : **electron microscopy** blister fluid <sup>[2]</sup>.

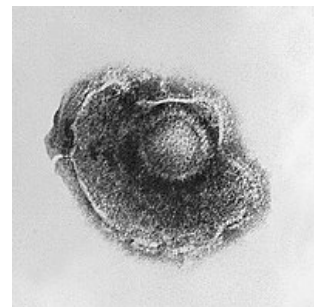
## Differential diagnostics

- Streptococcus impetigo,
- folliculitis,
- insect stings,

- enterovirus vesicular rash,
- disseminated HSV,
- allergic rashes.

## Treatment

1. **symptomatic** (fever, itching):
2. \* *topical* (liquid powder, antiseptic ointment);
3. \* *general* (paracetamol, antihistamine, ATB in bacterial superinfection);
4. \*\* we make sure there is a sufficient "fluid supply";
5. \*\* **we isolate the sick at home**;
6. \*\* we mainly **protect children with reduced immunity** from infection - we give **specific immunoglobulins** to the infection *no later than 72 hours after exposure* ← *this either prevents infection or prolongs the incubation and then alleviates the course*;
7. u *immunosuppressed* and in severe **acyclovir**, possibly **immunoglobulin** [2];
8. \* **varicella-zoster immunoglobulin** is administered prophylactically:
9. \*\* *pregnant women with a negative history of varicella* who have been exposed to the infection;
10. \*\* *neonates of seronegative mothers* who have been exposed to the infection for the first 6 weeks of life;
11. \*\* *premature infants* exposed to infection regardless of maternal history [3].



Electron microscope:  
Varicella-zoster virus

## Complications

- **efflorescence impetiginization**;
- **hepatitis**;
- **pneumonia** - mainly in cystic fibrosis, otherwise rare;
- **encephalitis** - often affects the cerebellum [3];
- in adults mainly **interstitial pneumonia** and **serous arthritis**;
- Orchitis as a complication of chickenpox is very rare [5], or there is no association with orchitis after or during VZV infection [6].

## Prevention

- voluntary vaccination (measles + rubella + mumps + varicella)

## Infections in pregnancy

- infection in the first **5 months** of pregnancy:
  - 2% risk of fetal harm;
  - defects of the nervous system, eye, skeleton, scarring of the skin;
  - is not a reason for abortion;
- infection last **5 days before delivery or 2 after delivery** :
  - in the newborn, the course of the varicella may be more severe than in the postnatal infection due to the absence of transmitted maternal antibodies [3].



Smallpox Blister - Early Stage

 For more information see *Fetus endangering infection*.

## Links

### External links

- DermNet Varicella (<https://www.dermnetnz.org/viral/varicella.html>),
- Pediatrics for practice: Viral exanthemas of childhood (<https://www.pediatriepropraxi.cz/pdfs/ped/2008/06/03.pdf>)
- Pediatrics for practice: Infectious exanthematous diseases in childhood (<https://www.pediatriepropraxi.cz/pdfs/ped/2009/03/09.pdf>)

## Reference

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2. TASKER, Robert C. – MCCLURE, Robert J. – ACERINI, Carlo L.. *Oxford Handbook of Paediatrics*. 1. edition. New York : Oxford University Press, 2008. pp. 688. ISBN 978-0-19-856573-4.
3. KELBLEROVÁ, Aneta. Infekční exantémová onemocnění v dětském věku. *Pediatric pro praxi* [online]. 2009, y. 10, p. 176-179, Available from <<https://www.pediatriepropraxi.cz/>>. ISSN 1803-5264.
4. Státní zdravotní ústav. *Vybrané infekční nemoci v ČR v letech 2000-2009* [online]. ©2010. [cit. 2010-08-15]. <<http://www.szu.cz/publikace/data/vybrane-infekcni-nemoci-v-cr-v-letech-1998-2007-absolutne>>.
5. GRAY, J A. Orchitis in chickenpox. *Br J Gen Pract* [online]. 1990, vol. 40, no. 341, p. 522, Available from

<<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1371462/?tool=pubmed>>. ISSN 0960-1643.

6. ORMISTON, G. Orchitis as a complication of chicken-pox. *Br Med J* [online]. 1953, vol. 1, no. 4821, p. 1203-4, Available from <<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2016300/?tool=pubmed>>. ISSN 0007-1447.

Template:Navbox - exantémová onemocnění

## Source

- ws: Plané neštovice