

# Common cold

Infectious rhinitis ( *rhinitis* or *common cold* ) is the most common acute human disease. It is mainly caused by viruses from the genus *Rhinovirus* (accounting for more than half of cases). About a quarter of cases are caused by coronaviruses, followed by influenza viruses and adenoviruses.

## Pathogenesis and pathogenicity

The incubation period of an infectious cold is 12-72 hours (usually 2 days for rhinoviruses, 3 days for coronaviruses). The first symptoms include a sore throat, stuffy nose, swelling of the nasal mucosa, increased secretion (inflammatory mediators are responsible for nasal discomfort, not the viral infection itself). They are accompanied by headaches, pressure in the face and ears, loss of taste and smell. Cough also occurs in 30% of cases and hoarseness in 20%. Fever is uncommon.

### Cold task

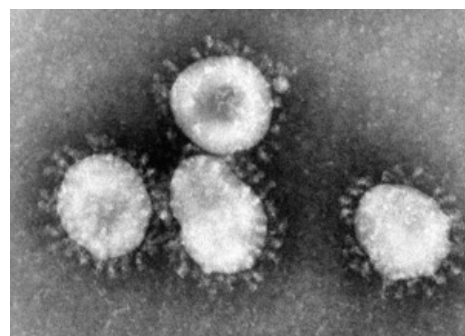
Empirically, an infectious cold is often preceded by cold feet. Pathophysiologically, we could explain it by the fact that the coldness of the limbs causes a reflex vasoconstriction of the vessels in the nasal mucosa, which cools it down. If there are rhinoviruses on it at that time, they multiply more (the optimum is 33 °C, at 37 °C they die) and at the same time, the activity of the ciliated epithelium decreases at a lower temperature.

### Corona viruses

It belongs to the family *Coronaviridae* . They are enveloped RNA viruses with helical symmetry. Virions are lined with cone-shaped projections. The glycoprotein HE is located on the surface, which binds to the cell membrane and is responsible for hemagglutination and hemadsorption, and also cleaves acetyl groups. The envelope contains protein M. In human coronaviruses, the glycoprotein S of the protrusion binds to the cell receptor – aminopeptidase. Subsequently, the viral envelope and cell membrane merge.

In addition to infectious rhinitis, they cause frequent diseases of farm and domestic animals. They can cause pneumonia in humans .

**SARS** – Severe Acute Respiratory Syndrome is also a disease caused by a coronavirus. However, the causative agent of SARS is completely different from other human coronaviruses. Therefore, it is assumed that it came to humans from its animal host - civet. (The virus isolated from healthy civet was almost identical to the causative agent of SARS.) The disease occurred mainly in China, Hong Kong and Taiwan - areas where civet meat is considered a delicacy. The virus was also easily transmitted to nursing staff and spread by airplanes to other countries - such as Canada. Effective therapy is not known yet.



Coronavirus – the agent of SARS

## Epidemiology

In young children, the common cold is caused mainly by rhinoviruses, while in adults it is mainly caused by coronaviruses. Transmission occurs mainly through droplets from sneezing, but also through contaminated objects or contaminated hands, for example through the conjunctiva. The most susceptible are young children, who catch a cold on average 6 times a year. Colds are more common in the cold season. An untreated cold lasts approximately 10 days.

## Diagnostics

Cultivation of rhinoviruses is not necessary, serology is type-specific. Culture of coronaviruses and serology are not routinely performed. Treatment and prevention

Treatment is usually symptomatic. Immunity is type-specific and short-lived. Many serotypes (especially in rhinoviruses) cause enormous problems in vaccine development . Increasing non-specific resistance (e.g. by sauna) is debatable.

## Links

## Related articles

- Flu
- Angina
- Corona viruses

## External links

- <http://www.lf2.cuni.cz/info2lf/ustavy/ulm/predn/virologie.htm>

## References

- VOTAVA, Miroslav, et al. *Medical microbiology special*. 1st edition. Brno: Neptun, 2003. 495 pp. ISBN 80-902896-6-5 .
- RAJNIK, Michael, Clinton MURRAY, and Duane HOSPENTHAL. *Rhinoviruses* [online]. WebMD LLC, Last Revised 2008-06-30, [cit. 2011-02-26]. < <https://emedicine.medscape.com/article/227820-overview> >.