

# Respiratory syncytial virus

**Human respiratory syncytial virus (RSV)** is an antigen-stable virus that causes serious respiratory diseases in humans. It belongs to the RNA-enveloped viruses in the family *Paramyxoviridae*, subfamily *Pneumovirinae*, genus *Pneumovirus*. The infection occurs worldwide and mainly affects infants and young children. When the virus replicates, multinucleated syncytia are formed.

## Pathogenesis

It is a common cause of severe respiratory infections in pediatrics, especially in preschool children. It causes bronchitis, bronchiolitis and pneumonia. The infection is spread by droplets. They multiply primarily in the cells of the airway mucosa. From there, especially during primary infection, it spreads further into the paranasal sinuses, the Eustachian tube, the middle ear and the lower respiratory tract. The mucosa responds to virus replication by edema, hypersecretion, and epithelial necrosis, which can secrete into the lumen. These factors can lead to bronchial and bronchiole obstruction and pulmonary atelectasis. Immunological protection against infection is provided by specific secretory IgA, maternal serum antibodies are not protective. When IgA decreases, re-infection often occurs, which occurs in older children and adults inapparently or as a mild inflammation of the upper respiratory tract.

## Clinical signs

The incubation period is 2-8 days. Thereafter, RSV infection may manifest as nasopharyngitis, bronchitis, bronchiolitis or pneumonia. The disease is often complicated by otitis media. In older children and adults, the disease is mild or the infection is completely inapparent. We must expect a serious course in the elderly and patients with immunodeficiency.

## Therapy and prevention

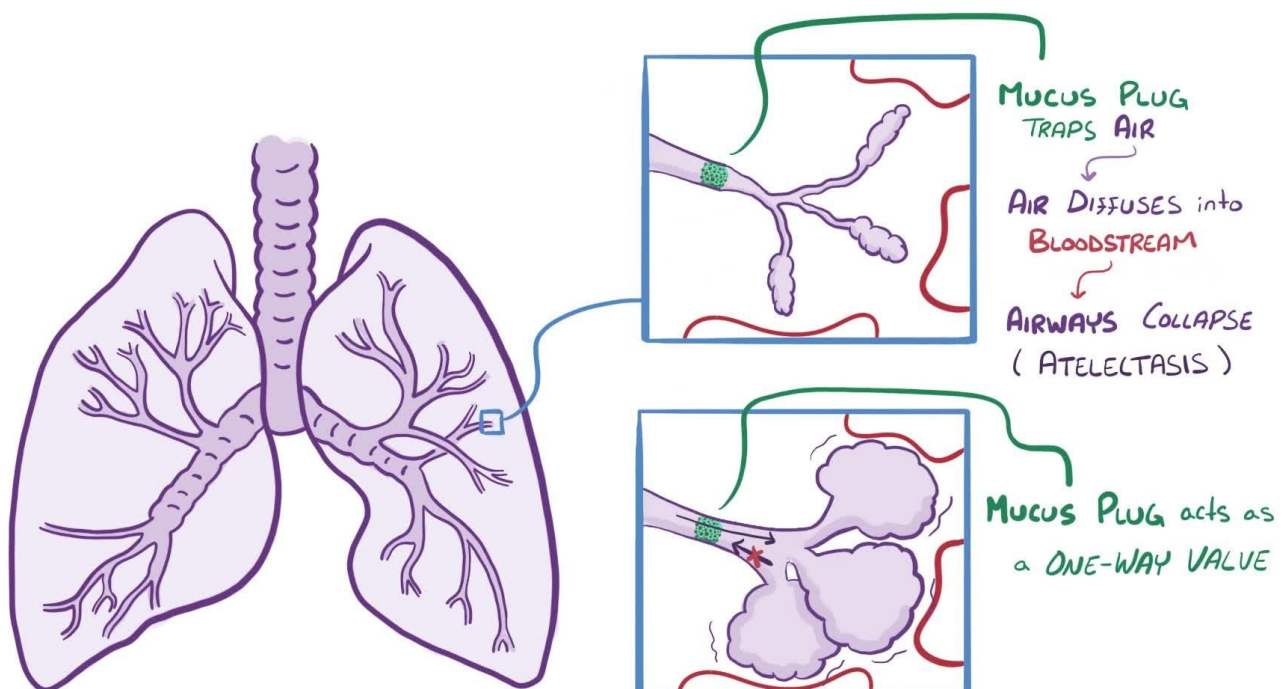
Mild respiratory infections are treated symptomatically, for greater conditions with a severe course we apply ribavirin in aerosol. The use of inactivated vaccines has not been successful. A live-attenuated vaccines or recombinant are not yet available for wider use.

Immunoprophylaxis by palivizumab (specific monoclonal anti-RSV antibody) is used for premature infants, low birth weight infants and with bronchopulmonary dysplasia.<sup>[1]</sup>



Newborn viral pneumonia caused by RSV

## Video



# Links

## References

1. KOPŘIVA, František – MIHÁL, Vladimír. Respirační syncytiální virus – možnosti prevence a léčby. *Klinická farmakologie a farmacie* [online]. 2012, vol. 4, p. 179, Available from <<http://www.klinickafarmakologie.cz/pdfs/far/2012/04/05.pdf>>. ISSN 1803-5353.

## Bibliography

- BEDNÁŘ, Marek, et al. *Lékařská mikrobiologie : bakteriologie, virologie, parazitologie*. 1. edition. Praha : Marvil, 1996. 558 pp. pp. 431–432. ISBN 8023802976.