

## **Coronavirus disease COVID19**

Virus SARS-CoV-2 causes human coronavirus disease COVID19. This virus belongs to a group of Betacoronavirus together with the agents causing the disease MERS – The Middle East respiratory syndrome - caused by coronavirus MERS-CoV and SARS – Sever Acute Respiratory Syndrome - caused by coronavirus SARS-CoV.

Coronavirus disease COVID19 was first detected in Wuhan in China in December 2019 and spread quickly around the world and caused pandemia.

The origin and first contamination of people with this infection is still not fully understood.

Human to human transmission of coronaviruses is primarily thought to occur among close contacts via respiratory droplets generated by sneezing and coughing. The interaction of the coronavirus spike protein with its complement host cell receptor is central in determining the tissue tropism, infectivity, and species range of the virus. The SARS coronavirus, for example, infects human cells by attaching to the angiotensin-converting enzyme 2 (ACE2) receptor. Some people who have the virus don't have symptoms, but they can still spread the virus.

The name "coronavirus" is derived from Latin corona, meaning "crown". The name refers to the characteristic appearance of virions (the infective form of the virus) by electron microscopy, which have a fringe of large, bulbous surface projections creating an image reminiscent of a crown or of a solar corona. This morphology is created by the viral spike peplomers, which are proteins on the surface of the virus. A core of virions consists of protein matrix which contains enclosed single strand of RNA.

Common signs of this infection include respiratory symptoms, headache, fever, dry cough, pain of muscle and joint, fatigue, breathing difficulties. In more severe cases of this infection can cause heavy pneumonia, severe acute respiratory syndrome, death.

It is important to follow the recommended preventive measures: wash your hands often with soap and warm water, or clean them with alcohol based disinfectant, cover mouth and nose with face mask or scarf. Elimination contact with other people and do not travel. Do not touch on your eyes, nose or mouth to elimination transfer virus in your body. Clean and disinfect surface you touch often and wear gloves when you clean.

It is recommended to strengthen the immune system, for example use supplements with vitamin C, vitamin D and omega3 acids.

Laboratory diagnostic: is necessary make swab from the neck and nose of the sick patients and do microbiologic examination by PCR test.

Treatment: now, we don't know effective medicine against this coronavirus. We can treat only symptoms but not the cause of this disease. Doctors recommended bed rest, medication to low temperature, medicine for cough, drink enough. Those with severe symptoms need to be cared for in the hospital.

Numerous clinical trials are under way to explore treatments used for other conditions that could fight COVID-19 and to develop new ones. Several studies are focused on an antiviral medication called remdesivir, which was first created to fight with Ebola. A study in China showed that hydroxychloroquine and chloroquine, which are used to treat malaria and autoimmune conditions like rheumatoid arthritis and lupus, helped people with COVID-19 pneumonia.

Now, there is not vaccine, but clinical trials are under way in the U.S. and in China to test vaccines for SARS CoV / COVID19. One vaccine called mRNA-1273 (which was developed by using messenger RNA) would tell your cells to pump out a protein that will kick-start your immune system to fight the virus. It's worked well in animals and is ready to test in humans.



## Vocabulary

Cause – způsobovat, příčina

Causing the disease – způsobující nemoc

Belongs to – patří

Origin- původ

Via respiratory droplets – prostřednictvím  
respiračních kapének

Determining – určování

Attaching - připojení

Derived – odvozené

Appearance – vzhled

Creating an image – vytvářející obraz

Reminiscent – připomínající

Viral spike peplomers – glykoproteinové výběžky na virovém povrchu

Enclosed single strand – uzavřený jediný řetězec

Common signs – běžné příznaky

Severe acute syndrome – těžký akutní příznak

Disinfect – dezinfikovat

Strengthen – posílit

Swab – výtěr

Clinical trials - klinické testy, zkoušky

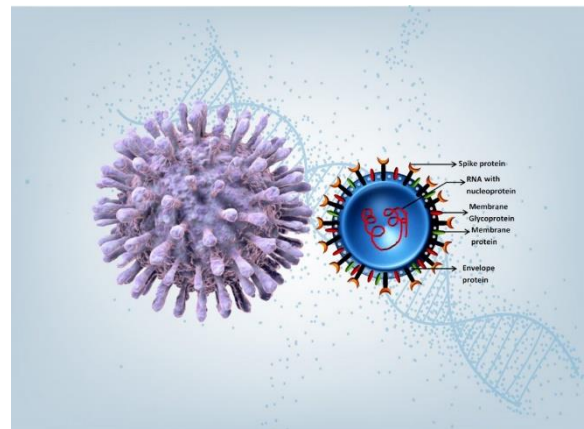
Focused on – soustředit, zaměřit se na něco

Created to fight – vytvořený k boji

Under way – probíhají „ jsou v plném proudu“

Kick- start your immune systém – nakopnout, nastartovat imunitní systém

Develop – vyvíjet, rozvíjet



## Exercises

### 1) Answer the questions:

**What are common signs of coronavirus disease COVID 19?**

*Common signs are respiratory symptoms, headache, fever, dry cough, pain of muscle and joint, fatigue, breathing difficulties. In more severe cases of this infection can cause heavy pneumonia, severe acute respiratory syndrome, death.*

**How does coronavirus CoV-2 spread?**

*Transmission is primary person to person through near contacts via respiratory droplets generated by sneezing and coughing.*

**Where was this disease COVID19 first detected?**

*Coronavirus disease COVID19 was first detected in Wuhan in China in December 2019.*

**Is this disease very infective for people?**

Yes, it is very infective and it spreads very quickly.

### 2) Complete the sentences:

The name "coronavirus" is ..... from Latin corona, meaning "crown". /derived /

It is important to follow the ..... preventive measures. /recommended /

Clean and ..... surface you touch often and wear ..... when you clean. /disinfect, gloves /

It is recommended to..... the immune system. /strengthen /

Several studies are ..... an antiviral medication called remdesivir, which was first created to fight with Ebola. /focused on /

..... are under way in the U.S. and in China to test vaccines for SARS CoV / COVID19. /clinical trials /

## References

<https://en.wikipedia.org/wiki/Coronavirus>

<https://www.webmd.com/lung/coronavirus>