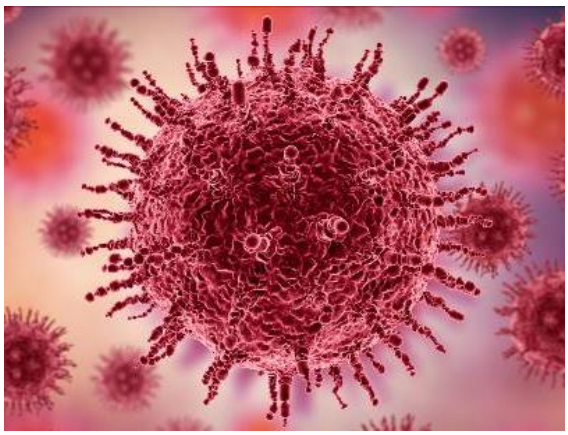
THE NEW CORONAVIRUS

Everything you need to know about this virus

Unknown to science until recently, the new type of coronavirus, also known as 2019-nCoV, has caused severe lung disease in hundreds of people around the world. The infection caused by this new virus can be similar to the common flu or present itself as a more serious illness, such as pneumonia. The first cases as well as the first casualties were reported in China, although the presence of the virus has already been confirmed in more countries in Asia, North America, and more recently in Europe.



Coronavirus: what is it?

Coronaviruses is one of the families of viruses that are known to cause respiratory illness, including the influenza virus, respiratory syncytial virus, the parainfluenza viruses, and the adenoviruses.
It gets its name from the fact that it appears to have a crown that surrounds the viral particle. Although the family of coronaviruses is large and well-known, this is a new strain (nCoV) that has not been previously identified in humans.

What are the symptoms?

Symptoms of infection with the new coronavirus in humans are usually similar to those caused by the flu:

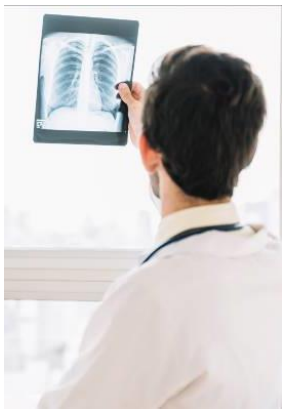
- Breathing problems including bronchitis and antibiotic-resistant pneumonia
- Cough
- Running nose
- Scratching throat
- Headaches
- Fever

In some cases, serious complications can arise in healthy people who have contracted the infection, which can be fatal, such as antibiotic-resistant pneumonia.

How does it spread?

According to the National Health Commission of China, the new coronavirus can spread before symptoms even appear. However, it's unclear how easily it spreads from person to person. This same Health Comission also alerts to the fact that the coronavirus's incubation period can vary between one to fourteen days.

What is the treatment?



There is no specific treatment, but research is underway. Most of the time, symptoms will go away on their own and experts advise seeking care early. If symptoms feel worse than a standard cold, see your doctor.

Doctors can relieve symptoms by prescribing pain or fever medication. The Centers for Disease Control and Prevention also states a room humidifier or a hot shower can help with a sore throat or cough. Drink plenty of fluids, get rest and sleep as much as possible.

How to protect yourself from getting infected according to the World Health Organization?

WHO's standard recommendations for the general public to reduce exposure to and transmission of a range of illnesses are as follows, which include hand and respiratory hygiene, and safe food practices:

• Frequently clean hands by using alcohol-based hand rub or soap and water;

• When coughing and sneezing cover mouth and nose with flexed elbow or tissue – throw tissue away immediately and wash hands;

• Avoid close contact with anyone who has a fever and cough;

• If you have a fever, cough and difficulty breathing seek medical care early and share previous travel history with your health care provider;

• When visiting live markets in areas currently experiencing cases of the novel coronavirus, avoid direct unprotected contact with live animals and surfaces in contact with animals;

• The consumption of raw or undercooked animal products should be avoided. Raw meat, milk or animal organs should be handled with care, to avoid cross-contamination with uncooked foods, as per good food safety practices.

What's the relation between heat and viruses?

The structure of viruses includes an envelope consisting of proteins and genetic material such as DNA and RNA. All of these components are temperature sensitive. Genetic material and proteins have complex structures to regulate their function, and a change in these structures can lead to a loss of function known as denaturation.

There are two basic means by which denaturation occurs: a change either in pH or temperature. Numerous studies confirm the inactivation of viruses with the application of heat. For example, the HIV virus in the blood will die when exposed to 77 °C for just 0.006 seconds. In another study, the "parvovirus" and "phage phiX174" viruses were completely inactivated when exposed to 103°C. In the case of the herpes virus, high temperatures inhibit the release of proteins necessary for the success of the infection.

Airborne viruses are no different. The SARS and MERS viruses (coronaviruses that cause Severe Acute Respiratory Syndrome or Middle East Respiratory Syndrome), have temperature sensitive proteins in their envelopes, which can be totally denatured at temperatures above 65 ° C, and remain inactive[5C], C. Similarly, proteins essential for the infectious transmission of the influenza virus are sensitive to PH variations and temperatures between 55 ° C and 70 ° C[6].

Studies:

Heat inactivation of the Middle East respiratory
Stability and inactivation of SARS coronavirus
Evaluation of inactivation methods for severe acute respiratory syndrome coronavirus in noncellular blood products

Source:

World Health Organization
Centers for Disease Control and Prevention