

Wuhan coronavirus infection – what you can do to protect yourself against infection – and how to make sure you do not spread infection to others

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Coronaviruses are common across the world. Typical symptoms of coronavirus infection include fever and cough that may progress to a severe pneumonia causing shortness of breath and breathing difficulties. In the event that cases start to appear in your community – or if you are travelling to an infected area - here are some things you can do to reduce your risk of becoming infected – and equally important – in the event that you do become infected - preventing the spread of the virus to other people and helping to halt the spread of the outbreak

“Wuhan novel coronavirus” is a new strain of coronavirus first identified in Wuhan City, China. Typical symptoms are the same as for other coronaviruses and include a cough, sneezing, shortness of breath, or a fever. Coronavirus like other respiratory viruses can cause more severe symptoms in people with weakened immune systems, older people, and those with long-term conditions like diabetes, cancer and chronic lung disease.

Information about the global and local situations on the spread of the virus can be found on the [UK Department of Health](#) which is regularly updated and [WHO](#)

How are respiratory viruses like coronavirus spread?

Currently the suspected source of the virus is a market in Wuhan selling live animals. Scientists believe the virus probably jumped species from animals to humans and is now spreading from person to person. It is assumed that the routes of transmission from person to person are the same as for colds and influenza viruses:

Airborne transmission involves very small infected droplet nuclei (droplets of size < 5µm) which are expelled into the air from the infected person by sneezing. The droplets can spread via air currents and settle from the air slowly. During this time the virus can be drawn down directly into the lungs where they cause infection. How long the virus remains infectious in droplet nuclei is not known, but the viruses will gradually die out.



Contact transmission involves hands and surfaces. Infected droplets of mucous can settle or be deposited on surfaces (either by settling of airborne droplets or being touched with contaminated fingers). An individual can pick up the virus if they touch a contaminated surface or shake hands with an infected individual with contaminated hands. They can then become infected if they rub their eyes or the lining of their nose with contaminated hands when the virus infects the nasal mucosa.

Surfaces which, if contaminated by droplets of infected mucous shed from the nose, are most likely to spread infections include frequent touch surfaces such as handkerchiefs and tissues, tap and door handles, telephones, mobile devices, television remotes etc

Droplet transmission occurs when the infected individual directly sprays large droplets of infected mucous by coughing or sneezing, which propels the droplets onto conjunctiva of the eye of an uninfected person (the virus enters the tear fluid and drains down a duct into the nose) or the lining of the nose of a susceptible host. Compared with airborne transmission this transmission route requires close face-to-face contact with the infected individual.

Currently there is no information on which pathway/s are the most important for spreading coronavirus, so we must assume that all 3 may be involved

Practical advice to prevent the risk of infection

In time it is likely that an effective vaccine will be available (one expert estimated it could be within 6 weeks). Meanwhile, public health agencies worldwide believe that the support of the public will play a crucial role in halting the spread of the epidemic.

1. How to reduce the risk of becoming infected

There are a number of things you can do to help protect you from becoming infected – which can really work. The more people who follow the advice, the greater the impact on preventing spreading the infection

TACKLING THIS OUTBREAK IS EVERYONE'S RESPONSIBILITY!

Here are some things you should do

If you are living in an infected area (currently Wuhan)

- Avoid spending unnecessary time in crowded places which is where the virus will spread most easily
- Anyone travelling to China should avoid visiting animal markets or people who are ill with respiratory symptoms.

For many people, avoiding crowded places is not possible if they are to continue their daily employment, but there are many things you can do if you are. Crowded places can range from offices and schools to airports, trains and aeroplanes.



- Avoid shaking hands with people you meet – fist bumps are an alternative way to greet people
- Wash your hands frequently or use a hand sanitizer*. It is impossible to define what is meant by frequently, but there are certain times when it is obvious. e.g as soon as you get to work or arrive home, always after moving around in the cabin on a flight etc. Carrying a hand sanitizer with you at all times means you can practice good hand hygiene even if you do not have access to soap and running water.
- Avoid touching your eyes, nose and mouth as much as you can. This is very difficult. Research shows we do this all the time without even realising.
- If you are travelling in a confined space for a significant period of time with a lot of people (long haul flight or train journey) use a “cold and flu defence nasal spray” (available from Pharmacies) and use it prophylactically before during and after your journey. This helps ensure that if you transfer any virus to the mucosa of the nose without knowing, it will prevent the virus from infecting via this route
- In an aircraft, keep the personal ventilation system going above your seat. This help to ensure that any viruses circulating around you are directed away from you down to the floor of the cabin
- Health agencies are not advising people to wear face masks in order to reduce the risk of breathing in the virus. However, the wearing of face mask could help to reduce risks of being infected by preventing you from touching the lining of your nose with your fingers.

2. What to do if you think you are infected

Health agencies are advising anyone who a) is experiencing respiratory symptoms and b) has visited an infected area (currently Wuhan) within the past 14 days to contact their local medical facility (UK phone NHS 111). People who are concerned should phone ahead before going to any medical facility and mention their recent travel to the city.

“Good respiratory hygiene” (“catch it, bin it, kill it”) together with other measures reduces the risks or spread of infection to others. This means:

- stay at home until you receive advice from you medical facility
- avoid touching your nose as much as possible.
- block coughs or sneezes preferably with a tissue, or if you don’t have a tissue, use the crook of your arm to save your hands from becoming contaminated
- use disposable tissues rather than a cotton handkerchief to blow your nose. Dispose of tissues immediately and ‘safely’ flush down the toilet if possible. DO NOT leave them lying around for other people to pick up and become infected.
- wash your hands thoroughly using soap and water. Make sure you use good mechanical action and rinse your hands under clean running water to remove any infected mucus. Make sure your hands are dry, as wet or moist hands are more likely to spread germs.
- If a washbasin is not available, use a hand sanitiser* to clean your hands.

Other things which can help to protect spread if someone is infected are:

- avoid close contact with other family members
- Remember that you can transmit the virus to other people in your home via computer keyboards, TV remotes, telephones, door handles tap handles, toilet



seats and flush handles etc. – so wash your hands frequently and disinfect these high frequency touch surfaces with a suitable disinfectant product or wipe that kills viruses** - or if this is not possible (e.g the surface or object would be damaged) avoid touching the surface at all, if possible.

- cleaning cloths and sponges can readily spread viruses from one surface to another. Make sure that cloths are disinfected immediately after use using a bleach disinfectant or other disinfectant that kills viruses**. Thoroughly dry the cloth until next use. Alternatively use a disposable cloth or wipe.
- do not share your towels, facecloths, toothbrushes, eating utensils, etc. with other family members.
- wash your laundry (especially handkerchiefs, towels, face-cloths) used by ill people separately from other laundry, and at a higher temperature (at least 60°C) to ensure viruses are inactivated.
- if you are infected with influenza, stay indoors and keep contact with other people to a minimum until seven days after your symptoms have improved and you have had no fever for at least 48 hours.

***Waterless hand sanitizers** (also called hand rubs) which are effective in inactivating respiratory viruses on the hands include alcohol-based gels (or other products) containing not less than 62% v/v alcohol. Not all products are effective against viruses, so check the label.

****Disinfectants and disinfectant cleaners** – If you use a disinfectant, (disinfectant, disinfectant/cleaner, disinfectant spray or wipe) use a product such as a bleach-based product, which is active against respiratory viruses. Check the claims on the labels to be sure. To use bleach (hypochlorite) products as a surface disinfectant, dilute to 0.5% w/v or 5000ppm available chlorine. Household bleach (both thick and thin bleach) for domestic use typically contains 4.5 to 5.0% w/v (45,000-50,000 ppm) available chlorine. Bleach/cleaner formulations (e.g. sprays or wipes) are formulated to be used “neat” (i.e. without dilution).

Remember:

ANTIBIOTICS DO NOT WORK AGAINST VIRAL INFECTIONS.

The International Scientific Forum on Home Hygiene (IFH, www.ifh-homehygiene.org) is a not-for-profit educational trust which is working to develop and promote hygiene in home and everyday life based on sound scientific evidence

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