

Coronavirus: What are the worst symptoms and how deadly is covid-19?

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It has been two months since China's health officials described a mysterious virus spreading in Hubei. As of 2 March, the new coronavirus has infected nearly 89,000 people across 65 countries, according to the World Health Organization.

Cases of the covid-19 virus seem to be levelling off in China. But elsewhere, infections – and deaths – are rising. We now have a better idea of just how contagious covid-19 is, and the main symptoms to look out for.

[Use a tissue to blow your nose and put it in the bin](#)

But there is still a lot to learn. How much do symptoms vary? Just how deadly is the virus? Who is most vulnerable and why? And will there be lasting consequences for those who recover from an infection?

The most commonly reported symptoms include a fever, dry cough and tiredness. In the most severe cases, people with the virus can develop difficulty breathing, and may ultimately experience organ failure. Some cases are fatal.

But many other individuals will just get a runny nose or a sore throat. Some people with the virus don't seem to show any symptoms at all. This might be because they have stronger immune systems, says Osamah Alwalid, a radiologist at Wuhan Union Hospital, who has been studying the impact of the virus on lung health.

A report covering 82 deaths linked to covid-19 in Wuhan found that 80 per cent of those who had died were over the age of 60, and three-quarters of these individuals had other disorders that may have made them more vulnerable, including high blood pressure, diabetes, heart disease and cancer.

Young people, on the other hand, appear to be better protected against the virus. A report by the World Health Organization and China, based on the 75,465 cases reported up to 20 February, found that only 2.4 per cent of cases were in those aged 18 or under. We don't yet know if children aren't catching the virus at the same rate as adults, or if they just don't show symptoms when they do have the virus.

It is also difficult to estimate how fatal the virus is. Most estimates put the rate at somewhere between 1 and 2 per cent of infections. This is higher in older populations – a report covering 44,672 cases put the fatality rate at 8 per cent for those in their 70s and 14.8 per cent for people aged 80 or over. But the exact figure is impossible to calculate, because we can't be sure how many people have caught the virus, says Mark Woolhouse at the University of Edinburgh, UK.

For a start, China has repeatedly changed the way it reports the number of confirmed cases of the virus. Some of the reported cases have been confirmed with tests, while others have been included on the basis of the person's symptoms. And other people who may have tested positive for the virus, but don't show symptoms, are being excluded from the official count.

The virus's fatality rate appears to be much higher in China, especially in Hubei, where the outbreak began. But this is probably due to differences in the way people are tested and cases are confirmed in different regions and countries. When more milder cases are picked up, the fatality rate will look lower. In a place where tens of thousands of people are unwell, it is possible that resources are focused on the sickest, which could skew the result in the other direction.

Even when infections aren't fatal, they can still cause serious illness. So far, more than 42,000 people are known to have recovered from the virus. But we don't know if the infection will have lasting consequences for these individuals, says Alwalid.

Alwalid and his colleagues have been assessing CT lung scans of people in Wuhan who have caught the virus. In the first week of infection, before symptoms start to show, signs of inflammation become apparent in the lungs. This spreads from one site in one lung to multiple areas of both lungs in the first few weeks of becoming infected, before it starts to improve.

"We found some fibrosis [scarring] in the lungs, but we don't know if that is reversible," he says. "Is it something that will resolve, or will it stay in the lungs? And what might the consequences be?"

For now, the health advice in most countries is the same – avoid areas experiencing an outbreak, cough or sneeze into tissues before binning them, and wash your hands. It is sound advice for avoiding bugs, but it is unlikely to totally stop the spread of the virus.

The total number of currently infected people is likely to be higher than official reports suggest, and one epidemiologist is predicting that 60 per cent of the world's population could eventually be affected.

Public health measures – such as testing, treating and quarantining at risk individuals – will hopefully put a dent in such figures. But it is impossible to know the eventual extent of the virus's spread. "It's very difficult for anyone to judge their risk," says Woolhouse. "I do this for a living and I can't predict my risk."