Can the new type of coronavirus be transmitted via food and toys?

Updated BfR FAQ dated 24 February 2020

After the outbreak of the respiratory disease COVID-19 caused by an infection with the new type of coronavirus (SARS-CoV-2), and the subsequent epidemic in various regions of China, first infections in humans have also now been diagnosed in Germany and Europe. Concerned consumers have asked the German Federal Institute for Risk Assessment (BfR) whether the virus can also be transmitted to humans via food and other imported products such as children's toys, mobile telephones, tools etc. Against this background, the BfR has summarised the most important questions and answers on the topic.

What do we know so far about the new type of virus-related respiratory tract disorder?
The new type of respiratory tract disorder COVID-19 is based on an infection with the new type of coronavirus (SARS-CoV-2), according to the current state of knowledge. Knowledge about the exact transmission methods of this coronavirus is still limited. However, the transmission method of other closely related coronaviruses are well known. Different types of coronavirus typically trigger conventional colds in humans. Moreover, other coronaviruses, such as the SARS and MERS coronaviruses, have occurred in the past which have led to severe respiratory tract disorders. The main target organs of the coronavirus in humans are the respiratory tract organs. The most important transmission method is a 'droplet infection', where coronaviruses are emitted by humans or animals into the air via droplets, and then inhaled. Different respiratory tract pathogens can also be transmitted via smear infections. In those cases, pathogens located on the hands enter the mucus membranes of the nose or eyes, where they may lead to an infection.

The Robert Koch Institute is in close contact with the World Health Organisation (WHO) and monitors all up-to-date news about the event

- https://www.rki.de/DE/Home/homepage_node.html and
- https://www.rki.de/SharedDocs/FAQ/NCOV2019/FAQ_Liste.html.

Are there other possible transmission methods?
There are currently no cases which have shown any evidence of humans being infected with the new type of coronavirus by another method, such as via the consumption of contaminated food or via imported toys. There are also no known reports for other coronaviruses about infections due to food or contact with dry surfaces. Transmission via surfaces which have recently been contaminated with viruses is, nonetheless, possible through smear infections. However, this is only likely to occur during a short period after contamination, due to the relatively low stability of coronaviruses in the environment.

Can imported goods from regions where the disease has spread be sources of an infection in humans?
Due to the transmission methods recorded thus far, and the relatively low environmental stability of coronaviruses, it is unlikely that imported goods such as imported foods or consumer goods and toys, tools, computers, clothes or shoes may be sources of an infection with the new type of coronavirus, according to the current state of knowledge. This assessment is still valid after the most recent publication on the persistence of the known coronaviruses by scientists from the Universities of Greifswald and Bochum

- https://www.uni-greifswald.de/en/university/information/current-news/details/n/how-long-coronaviruses-persist-on-surfaces-and-how-to-inactivate-them-60255/

- https://www.sciencedirect.com/science/article/pii/S0195670120300463?via%3Dihub

How can we protect ourselves from being infected by the virus via food and products?
Although it is unlikely that the virus will be transmitted via contaminated food or imported products, general everyday hygiene rules, such as regular hand washing, and hygiene rules for food preparation (https://www.bfr.bund.de/cm/364/protection-against-foodborne-infections.pdf) should be observed when handling them. As the viruses are sensitive to heat, the risk of infection can also be further reduced by heating foods.

Can coronaviruses survive and remain infectious on fixed and dry surfaces, outside human or animal organisms?
The stability of coronaviruses in the environment depends on several factors, such as temperature, air humidity and surface conditions, as well as the specific virus strains and the virus quantity. In general, human coronaviruses are not particularly stable on dry surfaces. Inactivation in dry conditions generally occurs within a period from a few hours to a few days. However, there is currently still no more specific data about the new type of coronavirus (SARS-CoV-2).

Can dock workers, haulage company workers handling containers, or workers who deal with the further processing of semi-finished products, components or other prefabricated products imported from China, be infected by the new type of pathogen?
Due to the low environmental stability of coronaviruses, a transmission of the pathogen via this method seems unlikely in most cases. The German Federal Institute for Occupational Safety and Health, and the Committee for Biological Agents, are responsible for assessing possible risks concerning infectious agents in the workplace

- https://www.baua.de/DE/Angebote/Aktuelles/Meldungen/2020/2020-01-30-Coronavirus.html.

Can coronaviruses be transmitted from animals to humans?
Essentially, it is possible that infected animals emit coronaviruses into the environment via their breath or excretions. Therefore, it is also conceivable that humans can be infected in this way on close contact. It is not yet known exactly whether animals have represented a source of infection for the epidemic in China, although the virus is suspected to have originated from wild animals. Information on those pathogens which can be transferred from animals to humans can be obtained from the presiding Friedrich Loeffler Institute (FLI)

- https://www.fli.de/en/news/short-messages/.

Further information on the topic of viruses is available from the BfR website

- https://www.bfr.bund.de/en/a-z_index/viruses-130212.html

BfR "Opinions app"

About the BfR

The German Federal Institute for Risk Assessment (BfR) is a scientifically independent institution within the portfolio of the Federal Ministry of Food and Agriculture (BMEL) in Germany. It advises the German federal government and German federal states ("Laender") on questions of food, chemical and product safety. The BfR conducts its own research on topics that are closely linked to its assessment tasks.

This text version is a translation of the original German text which is the only legally binding version.