Coronavirus and food safety

COVID-19 from a food safety perspective

25 September 2023

This report is based on the information available on 3 April 2020.
As more information becomes available, the conclusions presented in this report may over time turn out to be outdated.

Finnish Food Authority

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1. INTRODUCTION

At the end of December 2019, the Chinese health authorities reported an outbreak of acute pneumonia, i.e., a large number of infections outbursts in the same place at the same time. The cause was discovered to be a novel, previously unknown coronavirus, SARS-CoV-2. The disease rapidly spread from China to Europe and elsewhere in the world and resulted in the World Health Organization (WHO) declaring it a pandemic, or a global epidemic, on 11 March 2020.

Coronaviruses are a large group of RNA viruses that have been found in both humans and animals. The novel coronavirus was named after its relative the SARS coronavirus. The disease caused by the novel coronavirus is called COVID-19, from the words 'COrona VIrus DIsease 2019'.

The first coronavirus infection in Finland was discovered in late January 2020. Currently, the Uusimaa Region has the largest number of cases. As the coronavirus epidemic in Finland worsened, the Emergency Powers Act was activated on 17 March 2020 for the first time since the last war.*

*) THL: https://thl.fi/en/web/infectious-diseases-and-vaccinations/what-s-new/coronavirus-covid-19-latest-updates/risk-groups-for-severe-coronavirus-disease

2. COVID-19 IN HUMANS

COVID-19 causes an acute respiratory infection whose symptoms include a cough, a sore throat, fever, difficulty in breathing, muscle pain, and headaches. The disease is also sometimes associated with diarrhoea. Infected persons can also be asymptomatic.

The novel coronavirus is primarily transmitted via droplets when an infected person coughs or sneezes. The virus can also be transmitted via contact with surfaces on which droplets from the respiratory tract of an infected person have recently landed. Faecal transmission is considered possible but unlikely. Thus, the disease mainly spreads from person to person.

The elderly and those with medical conditions that affect the lungs, the circulatory system, and the immune system have been identified as risk groups for serious coronavirus disease. Obesity and smoking weaken lung function and can thus increase the risk of a serious form of the disease. More information about groups with an increased risk can be found on the website of the Finnish Institute for Health and Welfare.

3. FOOD PRODUCTS

According to the European Food Safety Authority (EFSA), nothing currently indicates that food products play a significant role in the spread of SARS-CoV-2. No foodborne infections have been reported. The German Federal Institute for Risk Assessment (BfR) has also stated that there have been no reported cases of the coronavirus being contracted by touching or eating contaminated food. According to the Swedish Food Agency (SLV), based on current information, SARS-CoV-2 does not spread via food or water, and the SLV concludes, based on previous epidemics caused by similar coronaviruses, that food is not a source of infection. According to the French Agency for Food, Environmental and Occupational Health and Safety (ANSES), it cannot be completely ruled out that a person could be infected with SARS-CoV-2 by eating surface-contaminated food so that the virus enters the respiratory tract from the mouth. However, the likelihood of being infected in this way is not considered high.

Food packaging and surfaces

According to BfR, ANSES and SLV, based on the spread of SARS-CoV-2-like coronaviruses, it can be concluded that infection is theoretically possible if after touching a contaminated product the eyes, nose, or mouth are touched with the same hand. However, no cases where food packaging was the source of infection have been reported.

According to BfR, the coronavirus can also be transmitted via contaminated serving utensils if an infected person sneezes on them, for example.

According to the European Centre for Disease Prevention and Control (ECDC), the virus can survive for several hours on surfaces such as desks and door handles. According to the US Centers for Disease Prevention and Control (CDC), indirect contact transmission from contaminated surfaces is possible, although it is not the primary route of transmission of the virus.

Hygienic food handling

The risk of infection can be effectively reduced with good kitchen hygiene practices such as cooking food properly, frequent handwashing, frequent cleaning of surfaces and equipment, and other regular measures that also reduce the risk of food poisoning. Persons with symptoms should avoid handling food. The infection and food contamination risks can be controlled with good hygiene practices

Although infection via food is improbable, strict adherence to regular hygiene practices such as regular handwashing and hygienic cooking practices is recommended. If a food industry employee develops symptoms, they should not enter work. It is also essential that persons with symptoms do not go to grocery shops or deliver food to risk groups.

Persistence of the virus

Whether the coronavirus can survive in the environment or on the surfaces of objects depends on several factors such as temperature and the material of the surface. Heat treatment (4 minutes at 63 °C or equivalent) kills coronaviruses, while refrigeration or freezing does not. According to studies, in ideal conditions, coronaviruses can survive on different materials for several hours – even days according to some studies – and for the longest on plastic surfaces. However, their ability to survive cleaning and disinfecting is not good, and no evidence yet exists that SARS-CoV-2 is any different from other coronaviruses. Factors affecting persistence vary between coronaviruses.

Because of its novelty, only a little information is available on SARS-CoV-2. The factors influencing its tolerance and transmission routes are not yet well known, nor is its minimum infectious dose for humans.

4. CONCLUSIONS

The following conclusions are based on currently available information and are associated with uncertainties.

Based on current information (2 April 2020), the following applies to SARS-CoV-2:

- The virus primarily spreads between humans via droplets in close contact with an infected person.
- A person can become infected by first touching a contaminated food product or food packaging and then touching their eyes, nose, or mouth; infection occurring in this way has not been proved, but the risk of it cannot be ruled out.
- The virus cannot spread via food that is eaten, or at least infection occurring in this way has not been proved, and the risk is deemed low.
- The virus can be transmitted via faecal matter, but infection occurring in this way is deemed unlikely.

SOURCES AND FURTHER READING

Recommended reading:

- The Finnish Food Authority's COVID-19 theme pages: https://www.ruokavirasto.fi/en/themes/coronavirus-covid-19/
- The Finnish Institute for Health and Welfare's instructions to citizens: https://thl.fi/fi/web/infektiotaudit-ja-rokotukset/ajankohtaista/ajankohtaista-koronaviruksesta-covid-19/ohjeita-kansalaisille-koronaviruksesta
- Finnish Institute of Occupational Health's guidelines for workers: https://hyvatyo.ttl.fi/en/koronavirus/en/guidelines-for-workers-to-prevent-coronavirus-infection
- Finnish Institute of Occupational Health's guidelines for employers: https://hyvatyo.ttl.fi/en/koronavirus/en/fioh-guidelines-for-workplaces-to-prepare-for-the-coronavirus-epidemic
- https://www.ruokavirasto.fi/henkiloasiakkaat/lemmikki--ja-harraste-elaimet/usein-kysyttya-elaimet-ja-koronavirus-covid-19/ (Only in Finnish and Swedish)

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