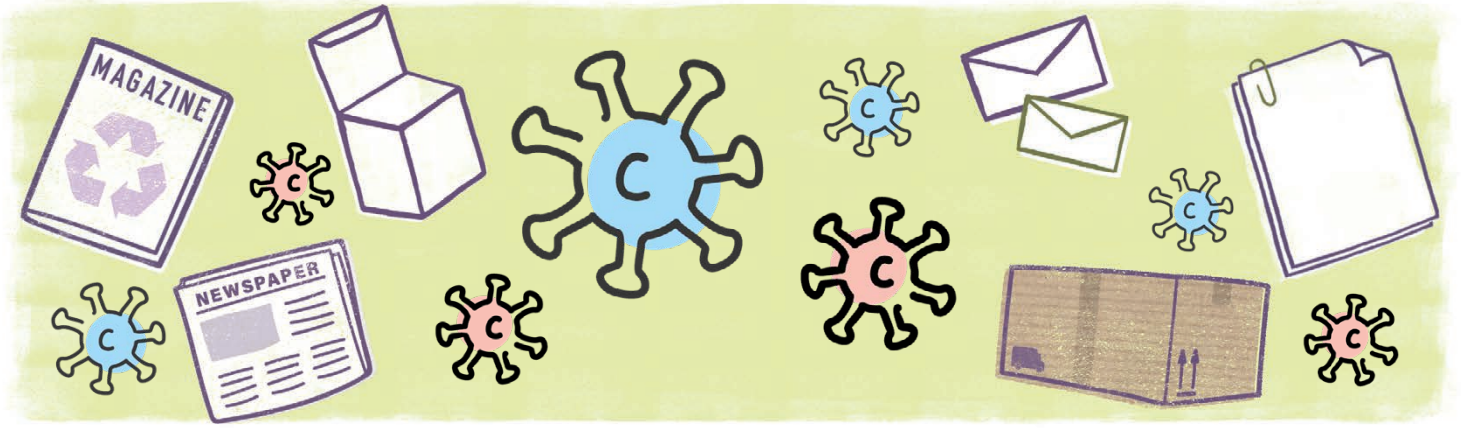


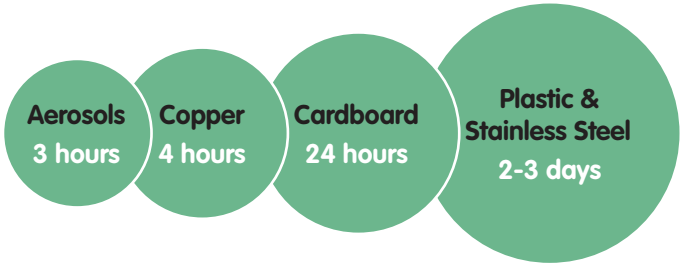
CORONAVIRUS (SARS-COV-2) TRANSMISSION THROUGH PAPER AND CARDBOARD SURFACES

There has been a lot of attention to how the surfaces of everyday items we handle may carry and transmit SARS-CoV-2, the coronavirus that causes COVID-19. Since paper and card are very physical mediums, concerns have been expressed about whether people can catch coronavirus simply by touching or handling mail, magazines and paper packaging. Below, we have gathered the information available regarding the transmission of the virus through paper, cardboard and other surfaces.

A study published in April in The New England Journal of Medicine[1] evaluated the surface stability of SARS-CoV-2 on plastic, stainless steel, copper and cardboard, and compared it with the SARS-CoV-1 virus, the most closely related human coronavirus.

On cardboard, no viable SARS-CoV-2 was measured after 24 hours. The virus could be detected in aerosols up to three hours post aerosolization, up to four hours on copper, and up to three days on plastic and stainless steel. Both viruses show relatively long viability on stainless steel and polypropylene (plastic) compared to copper or cardboard.

Coronavirus (SARS-CoV-2) surface stability results:



Source: The New England Journal of Medicine, 2020. *Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1.*

"The likelihood of an infected person contaminating commercial goods is low and the risk of catching the virus that causes COVID-19 from a package that has been moved, travelled, and exposed to different conditions and temperate is also low."

The World Health Organisation, 2020

An additional study published in The Lancet[2] titled "Stability of SARS-CoV-2 in different environmental conditions" reported on the stability of SARS-CoV-2 on various surfaces in different environmental conditions.

No infectious virus could be recovered from printing and tissue papers after a 3-hour incubation, whereas no infectious virus could be detected from treated wood and cloth on day 2.

By contrast, SARS-CoV-2 was more stable (survived longer) on smooth surfaces. No infectious virus could be detected from treated smooth surfaces on day 4 (glass) or day 7 (stainless steel and plastic). The authors also note that special techniques were required to recover the virus from objects and, therefore, this recovery of the virus does not necessarily reflect the potential to pick up the virus from casual contact.

Print and Paper have a great environmental story to tell

TWO SIDES

"In a laboratory experiment, the conditions are pretty carefully controlled and constant. By comparison, in the real world, conditions fluctuate — conditions like temperature, humidity and light. So, the survivability may vary, too. For instance, if the virus contaminates a sunny windowsill or countertop, it may not last as long."

Dr Lloyd-Smith, author of the 'Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1'

Addressing the concerns

Public Health England state that "the virus does not survive well for long periods outside the body and so it is highly unlikely that COVID-19 can be spread through post or packages."[3]

Additionally, the manufacturing conditions of paper, plus the printing and distribution processes significantly decrease the amount of viable particles required to infect someone, the material itself is not a good location for the virus to exist.

The research so far suggests that the virus lasts longest on smooth, non-porous surfaces, such as plastic and stainless steel. Since paper and cardboard are porous, they carry the lowest potency for the shortest period of time.

There will undoubtedly be more research on the relationship between COVID-19 and surfaces in the months and years to come. But it is important to follow government guidelines to ensure the reduction of transmission from person to person.

Government guidelines

- Avoid close contact with people who have COVID-19.
- Avoid touching your eyes, nose and mouth.
- Wash your hands regularly.
- Self isolate when you or someone in your household has the virus.
- Cover coughs or sneezes with a tissue, and dispose of the tissue.
- Clean and disinfect frequently touched objects and surfaces using disinfectant products.

Visit www.gov.uk/coronavirus for the latest advice and guidance regarding coronavirus.

Sources

1. The New England Journal of Medicine, 2020. Aerosol and Surface Stability of SARS-CoV-2 as Compared with SARS-CoV-1. https://www.nejm.org/doi/full/10.1056/nejmc2004973
2. Science Direct, 2020. Stability of SARS-CoV-2 in different environmental conditions. https://www.sciencedirect.com/science/article/pii/S2666524720300033
3. Public Health England, 2020. Guidance to assist professionals in advising the general public. https://www.gov.uk/government/publications/novel-coronavirus-2019-ncov-guidance-to-assist-professionals-in-advising-the-general-public/guidance-to-assist-professionals-in-advising-the-general-public