



YOUR QUESTION

How long can the COVID-19 virus exist on surfaces and what infection control precautions should be implemented?

What is the best evidence currently?

WHO assert that the transmission of novel coronavirus may remain viable for hours to days on surfaces made from a variety of materials and that the bioburden of such microorganisms can be reduced by cleaning.

In a recent review by Kampf et al. an analysis of 22 studies reveals that human coronaviruses such as Severe Acute Respiratory Syndrome (SARS) coronavirus, Middle East Respiratory Syndrome (MERS) coronavirus or endemic human coronaviruses (HCoV) can persist on inanimate surfaces such as metal, glass or plastic for up to 9 days, but can be efficiently inactivated by surface disinfection procedures with 62–71% ethanol, 0.5% hydrogen peroxide or 0.1% sodium hypochlorite within 1 minute.

It is worth noting that in a Q and A interview, Carolyn Machamer, a cell biologist who specialises in coronaviruses, states: "What's getting a lot of press and is presented out of context is that the virus can last on plastic for 72 hours — which sounds really scary. But what's more important is the amount of the virus that remains. It's less than 0.1% of the starting virus material. Infection is theoretically possible but unlikely at the levels remaining after a few days. People need to know this."

However, regular cleaning followed by disinfection is recommended, using hospital disinfectants active against viruses; cleaning in patient rooms is particularly important for frequently touched surfaces. Cleaning of visibly dirty surfaces followed by disinfection is a best practice measure for prevention of COVID-19 and other viral respiratory illnesses in households and community settings. The Centers for Disease Control and Prevention recommend cleaning and disinfection of high-touch surfaces daily in household common areas: eg tables, hard-backed chairs, doorknobs, light switches, remotes, handles, desks, toilets, sinks.

The importance of indirect contact transmission involving contamination of inanimate surfaces is uncertain and warrants further study.



SOURCES

Produced by the members of the National Health Library and Knowledge Service Evidence Team.[†] Current as at 26 March 2020. This evidence summary collates the best available evidence at the time of writing. Emerging literature or subsequent developments in respect of COVID-19 may require amendment to the information or sources listed in the document. Although all reasonable care has been taken in the compilation of content, the National Health Library and Knowledge Service Evidence Team makes no representations or warranties expressed or implied as to the accuracy or suitability of the information or sources listed in the document. This evidence summary is the property of the National Health Library and Knowledge Service and subsequent re-use or distribution in whole or in part should include acknowledgement of the service.

The following PICO(T) was used as a basis for the evidence summary:

	Inanimate surface contamination
	SARS-CoV-2
	Length of survival of virus and what infection control procedures should be implemented?

World Health Organization (2014)

https://apps.who.int/iris/bitstream/handle/10665/112656/9789241507134_eng.pdf?sequence=1. [Accessed 25 March 2020].

World Health Organization (2020) <https://www.who.int/docs/default-source/coronaviruse/who-china-joint-mission-on-covid-19-final-report.pdf> [Accessed 25 March 2020].

European Centre for Disease Prevention and Control (2020) <https://www.ecdc.europa.eu/sites/default/files/documents/COVID-19-infection-prevention-and-control-healthcare-settings-march-2020.pdf> [Accessed 25 March 2020].

Centers for Disease Control (2020) <https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html> [Accessed 25 March 2020].

Centers for Disease Control (2020) https://www.cdc.gov/coronavirus/2019-ncov/prepare/cleaning-disinfection.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcommunity%2Fhome%2Fcleaning-disinfection.html [Accessed 25 March 2020].

Health Protection Surveillance Centre (2020) <https://www.hpsc.ie/a-z/respiratory/coronavirus/novelcoronavirus/guidance/infectionpreventionandcontrolguidance/Infection%20Prevention%20and%20Control%20Guidance%20for%20novel%20coronavirus%20MERS%20and%20Avian%20Influenza%20V2.0.pdf> [Accessed 25 March 2020].

UpToDate (2020) <https://www.uptodate.com/contents/coronavirus-disease-2019-covid-19#H3784053209> [Accessed 25 March 2020].

Kampf et al. (2020) <https://www.ncbi.nlm.nih.gov/pubmed/32035997> [Accessed 25 March 2020].

Van Doremalen et al. (2020) <https://www.nejm.org/doi/full/10.1056/NEJMc2004973> [Accessed 25 March 2020].

Volkin (2020) <https://hub.jhu.edu/2020/03/20/sars-cov-2-survive-on-surfaces/> [Accessed 25 March 2020].

Otter et al. (2016) <https://www.ncbi.nlm.nih.gov/pubmed/26597631> [Accessed 25 March 2020].

Center for Biocide Chemistries, American Chemistry Council (2020) <https://www.americanchemistry.com/Novel-Coronavirus-Fighting-Products-List.pdf>



The following search strategy was used:

[ABBREVIATED] COVID-19 OR coronavirus or "corona virus" or (Wuhan N3 virus) or ("2019-nCoV" or "2019 ncov") or "severe respiratory syndrome coronavirus2" or ("2019" and (new or novel) and coronavirus)
(HCoV-19) AND (surface or surfaces or transmission or "surface exposure" or "environmental transmission" or contamination or "inanimate surface" or "hard surface" or "soft surface" or "dry surface") AND (survival or lifecycle or "life cycle" or existence or survive or "life span")

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