

# Copper's Known to Combat Viruses—Can it Help With Public Health?

By [Jennifer Pattison Tuohy](#) – March 17, 2020, DWELL magazine

**Copper's comeback could be beneficial for more than just interior design.**

The humble doorknob has become a symbol of danger in recent weeks, as we've learned exactly how long viruses can live on surfaces—COVID-19 can survive for two to three days on stainless steel, [according to unpublished studies](#). This discovery has also led to renewed interest in copper as a tool for combating nasties.

Copper and copper alloys like brass, bronze, and copper-nickel, have long been known to have health benefits—but did you know these metals are [naturally antimicrobial](#)<sup>1</sup>? Some research has even gone so far as to show that copper kills certain viruses on contact. Meaning they can't be transferred to the next person who touches that copper doorknob. (This type of contact transmission is thought to be [one way the novel coronavirus is spreading](#) so quickly.)

"We've seen viruses just blow apart [on copper]," Bill Keevil, professor of environmental healthcare at the University of Southampton, told [Fast Company this week](#)<sup>2</sup>. "They land on copper and it just degrades them."

## **Brass hardware and fixtures could help prevent the spread of viruses**

Does this mean we should all immediately replace our hardware with on-trend brass? Well, not solely for medicinal purposes.

According to the American Society for Microbiology, [research has firmly established the antimicrobial properties of copper surfaces](#), and the EPA has registered almost 300 different copper surfaces as antimicrobial. Numerous viruses and bacteria experience contact killing upon exposure to copper and copper alloy surface studies show, [including MRSA, Staph, Influenza A and E-Coli](#). However, the length of time it takes to be effective varies significantly, from 30 seconds to many hours. So it's not something you can rely on to keep your home germ-free. (Here's a list of [EPA-recommended disinfectants](#) for use against COVID-19). Where it would be best deployed, according to Keevil, is in hospitals and medical facilities. His research follows up on [work done by Dr. Phyllis J. Kuhn in the 1980s](#).<sup>3</sup>

"Sleek and shining stainless steel doorknobs and push plates look reassuringly clean on a hospital door," [Kuhn wrote](#). "By contrast, doorknobs and push plates of tarnished brass look dirty and contaminating. But even when tarnished, brass—an alloy typically of 67% copper and 33% zinc—is bactericidal, while stainless steel—about 88% iron and 12% chromium—does little to impede bacterial growth."

"The process involves the release of copper ions (electrically charged particles) when microbes, transferred by touching, sneezing, or vomiting, land on the copper surface," [Keevil wrote in a research article](#)<sup>4</sup>—for which he received funding from the International Copper Association and the Copper Development Association.

Keevil goes on to demonstrate numerous studies to have shown that when copper alloy is used on "regularly touched surfaces in busy hospital wards and intensive care units," combined with routine

cleaning, there is up to a 90% reduction in live bacteria on those surfaces. Additionally, studies in three US intensive care units [showed a 58% reduction in infection rates](#).<sup>5</sup>

Soft, antique brass and rustic, rugged copper are durable, versatile, and beautiful materials—ideal for light fixtures, door hardware, faucets, and fittings in your home. But these metals could make the biggest difference (and potentially help prevent future pandemics) if we incorporated them into our hospitals and nursing homes.

#### ***Related Reading:***

Bacterial Killing by Dry Metallic Copper Surfaces

▼ <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3028699/>

*Appl Environ Microbiol.* 2011 Feb; 77(3): 794–802.

PDF copy: <https://kopernio.com/viewer?doi=10.1128/aem.01599-10&route=6>

**Effects of temperature and humidity on the efficacy of methicillin-resistant *Staphylococcus aureus* challenged antimicrobial materials containing silver and copper**, H.T. Michels, J.O. Noyce and C.W. Keevil, *Letters in Applied Microbiology*, 23 March 2009

**Copper Bracelets:** <https://tinyurl.com/yx4koagi> Simple 4 and 8 gauge copper wire bracelets from Etsy or \$20 each from Integrity Research Institute, [www.BioenergyDevice.org](http://www.BioenergyDevice.org)

#### **References**

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<sup>1</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3067274/>, *Appl Environ Microbiol.* 2011 Mar; 77(5): 1541–1547. Metallic Copper as an Antimicrobial Surface ▼ Gregor Grass,<sup>1</sup> Christopher Rensing,<sup>2</sup> and Marc Solioz<sup>3,\*</sup>

<sup>2</sup> <https://www.fastcompany.com/90476550/copper-kills-coronavirus-why-arent-our-surfaces-covered-in-it>, 03-16-20, EVIDENCE, Copper kills coronavirus. Why aren't our surfaces covered in it?, Fast Company

<sup>3</sup> [https://www.researchgate.net/publication/265158098\\_Doorknobs\\_A\\_Source\\_of\\_Nosocomial\\_Infection](https://www.researchgate.net/publication/265158098_Doorknobs_A_Source_of_Nosocomial_Infection), Doorknobs: A Source of Nosocomial Infection?, ResearchGate, December 1982, Phyllis Kuhn

<sup>4</sup> <https://theconversation.com/copper-is-great-at-killing-superbugs-so-why-dont-hospitals-use-it-73103> Copper is great at killing superbugs – so why don't hospitals use it? The Conversation, February 24, 2017

<sup>5</sup> <https://journals.sagepub.com/doi/10.1177/1937586715592650>, From Laboratory Research to a Clinical Trial: Copper Alloy Surfaces Kill Bacteria and Reduce Hospital-Acquired Infections, Harold T. Michels, MS, PhD, PE, C. William Keevil, PhD, Cassandra D. Salgado, MD, MS, FIDSA, FSHEA, ...First Published July 10, 2015, *Health Environments Research & Design Journal*, 2015, Vol. 9(1) 64-79