

# Could copper prevent spread of Ebola?

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Bill Keevil

Research from the University of Southampton has indicated that copper could help to prevent the spread of Ebola.

Hand washing, disinfectants and quarantine procedures alone have been found to be insufficient to contain the spread of the virus. Research by Professor Bill Keevil at the University of Southampton has offered promising evidence that [antimicrobial copper](#) - engineering materials with intrinsic hygiene benefits - could be a valuable addition to these

existing measures.

The US Centers for Disease Control and Prevention (CDC) note the Ebola virus is transmitted through direct contact with the bodily fluids of an infected person, or through exposure to contaminated objects. Viruses similar to Ebola are susceptible to a broad range of surface disinfectants, however testing against Ebola itself cannot currently be conducted due to limited access to laboratories with the required safety clearances. The CDC has therefore instructed hospitals to use [disinfectants](#) with proven efficacy against resistant viruses such as norovirus, adenovirus and poliovirus<sup>1</sup>.

Peer-reviewed and published data from laboratory studies conducted by Professor Bill Keevil, Chair of Environmental Healthcare at the University of Southampton, demonstrates [copper](#)'s ability to rapidly and completely inactivate norovirus<sup>2</sup>. Recent work in Germany has also explored its effectiveness against other viral biothreat agents<sup>3</sup>. Clinical trials conducted in the UK, US and Chile have shown surfaces made from solid copper or copper alloys - collectively termed 'antimicrobial copper' - continuously reduce [surface](#) contamination by greater than 80 per cent. These results indicate a potential role for antimicrobial copper touch surfaces in preventing the spread of Ebola.

"Based on our research on viruses of similar genetic structure, we expect copper surfaces to inactivate Ebola, and to help control the spread of this virus if employed for publicly-used touch surfaces," explains Professor Keevil.

Antimicrobial copper surfaces have been described as a 'no touch' solution, meaning that no special measures or human intervention are required for it to continuously kill pathogens, in between regular cleans. Replacing frequently-touched surfaces, such as door handles, taps and light switches, with solid copper or copper alloy equivalents will provide

a more hygienic environment, with fewer bacteria and viruses available to spread infections. With this in mind, the use of antimicrobial [copper surfaces](#) could offer an additional method of controlling the current spread of Ebola.

**More information:** "Inactivation of Norovirus on Dry Copper Alloy Surfaces," Warnes, S.L., Keevil, C.W., *PLOS One*, September 2013, Vol. 8, Issue 9 [www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0075017](http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0075017)

Provided by University of Southampton

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