

# COPPER RESEARCH TIMELINE

## OTHER COPPER STUDIES

**2018 | CHYDERIOTIS Systematic Review**  
 Concludes that copper is effective but that no clear connection has been made to reducing HAIs  
*Last publication included in review from August 2016*

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**2020 | DOREMALEN, et al**  
 No SARS-CoV-2 detected on copper after 4 hours. Virus detected on plastic and stainless steel up to 72 hours.

**2017 | HINSA-LEASURE**  
 Copper alloy athletic equipment had less contamination

**2017 | SCHMIDT**  
 Copper alloy components on stethoscopes were less contaminated

**2017 | MARCUS**  
 Copper textiles associated with reductions in fever days, antibiotic use

**2017 | SOULI et al**  
 Copper alloy surfaces reduced colonization by MDROs

**2016 | HINSA-LEASURE**  
 Copper alloys reduce bioburden on patient room high-touch surfaces

**2016 | VON DESSAUER**  
 Copper alloys reduce bioburden in pediatric ICU

**2015 | ESER**  
 Copper alloys show statistically significant reductions in bioburden

**2014 | LAZARY**  
 HAI rates reduced in ICU with copper-impregnated textiles

**2013 | SALGADO**  
 Bioburden and HAIs reduced in ICUs with copper fixtures

**2012 | KARPANEN**  
 Copper fixtures had lower microbe counts

**2010 | SALGADO**  
 Copper fixtures in hospital ICU reduced microbial load by 87.4%

**2009 | CASEY**  
 Copper harbors 90-100% fewer microbes than controls

**2008 | MEHTAR**  
 Copper kills pathogens associated with healthcare associated infections

**2008 | EPA REGISTRATION**  
 US Environmental Protection Agency registers copper alloys as antibacterial sanitizing surfaces

**2007 | MICHAELS**  
 Copper demonstrates superior antimicrobial efficacy versus stainless steel

**1980s-2000s | MECHANISMS OF BIOCIDAL ACTIVITY**  
 How copper disrupts bacterial cell membranes, metabolism, role of free radicals

**1960s | ANTI-PATHOGEN ACTIVITY**  
 Studies demonstrate efficacy of copper against a broad spectrum of pathogens

## EOS<sup>CU</sup> MILESTONES

**2021 | HARRIS**  
 Study investigated persistence and viability of SARS-CoV-2 on 16 common indoor surface finishes. No viable virus detected on EOS<sup>CU</sup> at 4 hours; viable virus detected on stainless and Corian at 30+ hours.

**2020 | JINADATHA**  
 A team from several Veteran's Administration hospitals demonstrated EOS<sup>CU</sup> significantly reduces bioburden on high-touch surfaces

**2019 | R01 GRANT AWARDED**  
 Dr. Jinadatha and team awarded R01 NIH Grant to continue studying EOS<sup>CU</sup>'s self-sanitizing properties and economic impact on reducing HAIs

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**2018 | BURKE**  
 Hospital with EOS<sup>CU</sup> surfaces and Cupron textiles reduced HAIs significantly when compared to equally new and certified hospitals

**2017 | COPPEN et al**  
 EOS<sup>CU</sup> tray tables had 81% less bioburden than standard tables; VA hospital

**2017 | WEBER Commentary**  
 Includes Souli, Von Dessauer, and Sifri

Concludes that research is promising; encourages more studies

**2016 | SIFRI**  
 Hospital wing with EOS<sup>CU</sup> surfaces and Cupron Textiles had 68%-83% fewer HAIs

**2016 | MULLER Review**  
 Concludes that copper results in modest reductions and studies are at high risk for bias

*Review stops November 2014*

**2014 | MONK**  
 Data demonstrating EPA-registered efficacy published for EOS<sup>CU</sup>; >99.9% kill within 2 hours

**2012 | EPA REGISTRATION**  
 EOS<sup>CU</sup> achieves EPA-registration for public health claims as an antibacterial sanitizing surface

