

4829. Safe From COVID: Disinfectant for Days!

ORLANDO, Fla. (Ivanhoe Newswire)— When was the last time you read the label on a commercial cleaning product or let a surface you wiped down dry completely? To be 99.9 percent effective, these products must be used correctly and frequently. But what if there was a better way? Now, the story on the next big breakthrough in disinfectant materials.

COVID-19 has made us all painfully aware of how many surfaces we touch a day.

“I went to a local grocery store, and I watched an employee in due diligence spray disinfectant on a surface and immediately wipe it off. So, my initial reaction was, oh, my goodness. That surface didn't get disinfected,” recalled Christina Drake, PhD, owner and manager of Kismet Technologies.

Scientists say most wipes or sprays take anywhere from four to ten minutes to disinfect a surface.

“Things like ethanol or some of the other things that will destroy the virus probably don't last long on a surface,” explained Griffith Parks, PhD, a virologist at UCF College of Medicine.

Meaning that surfaces need to be wiped down again and again to stay clean from a number of viruses including COVID-19.

“Driving home I was like, you know, there's got to be a better solution than what's currently available,” shared Drake.

That's why scientist Christina Drake is creating a long-lasting, disinfectant spray that could act in under 30 seconds and last for hours, or even days, using cerium oxide nanoparticles. To develop this virus vanquisher, Drake's team is first suspending the nanoparticles in a liquid so that it can be sprayed. Ensuring that once it's sprayed, a film develops on the surface and will continually regenerate. And then finally, testing it against multiple viruses and verifying that it is safe.

“This would be a huge leap in disinfection,” elaborated Sudipta Seal, PhD, a materials science engineer at the University of Central Florida.

Protecting us from the unseen dangers lurking on the surface.

Drake formed a private company, Kismet Technologies to further develop and market the new disinfectant, working alongside Professor Seal, who specializes in cerium oxide nanoparticles. Cerium oxide nanoparticles have previously been used in a wide range of therapies from healing diabetic wounds to reducing damage from radiation.

Contributors to this news report include: Cyndy McGrath, Executive Producer; Sabrina Broadbent, Field Producer; Matt Goldschmidt, Videographer; Roque Correa, Editor.

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Sources:

<https://www.samford.edu/nursing/news/2020/Are-you-properly-disinfecting-your-home-surfaces>

MEDICAL BREAKTHROUGHS **RESEARCH SUMMARY**

TOPIC: SAFE FROM COVID: DISINFECTANT FOR DAYS!
REPORT: MB #4829

BACKGROUND: Many viruses such as SARS-CoV-2, also known as COVID-19, can be spread through touching a contaminated surface and then touching the mouth, nose, eyes, etc., this is called fomite transmission. Respiratory droplets containing the virus expelled by an infected individual can contaminate surface an object, creating fomites. Viable virus particles can be found on these surfaces for periods of time ranging from hours to days depending on the ambient environmental factors including temperature, humidity, type of surface, and high exposure to both infected individuals or general traffic. Fomite transmission is considered a likely mode of transmission for SARS-CoV-2, given the consistent information gathered from the environmental contamination in the vicinity of high cases of infection.

(Source: <https://www.who.int/news-room/commentaries/detail/transmission-of-sars-cov-2-implications-for-infection-prevention-precautions>)

PREVENTION: Transmission of SARS-CoV-2 is primarily through respiratory droplets and close contact, but it is also likely spread through surface contamination. Most commonly through objects such as doorknobs, countertops, keyboards, toys, etc. and can be spread through asymptomatic infected individuals. Cleaning of visible dirty surfaces followed by disinfection is a best practice measure for prevention of viral spread. Cleaning refers to the act of removal of germs, dirt, and impurities form a surface. By removing these it lowers the risk of them spreading infection. If a surface is not cleaned before disinfection, the surface will not be thoroughly disinfected and could still spread the virus. Disinfecting refers to utilizing chemicals to kill the germs and viral particles on a surface. This process does not necessarily remove germs, but by killing germs left behind *after* cleaning, it can greatly lower risk of infection. Follow directions on commercial disinfecting products. Be sure to use a product with at least 70 percent alcohol, leave the surface wet for the recommended amount of time, often four to ten minutes, and ensure that there is good ventilation in the area.

(Source: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/cleaning-disinfection.html>)

NEW TECHNOLOGY: New disinfectant materials may soon reduce the amount of time it takes for surfaces to become disinfected and increase the amount of time the disinfectant is effective. This is of primary concern for public, high-contact areas, but also for personal household objects as well. Cerium oxide nanoparticles have shown a wide range of therapeutic properties from healing diabetic wounds, to reducing harm from radiation, to helping kill cancer cells, to working as an antibiotic. The nanoparticles have a unique ability to act as a powerful antioxidant as well as generate protective hydroxyl radicals to defend against pathogens. By suspending the nanoparticles in a liquid spray disinfectant, they could result in a fast-acting, long-lasting disinfectant material to effectively fight against SARS-Cov-2.

(Source: <https://www.ucf.edu/news/ucf-researchers-are-helping-develop-rapid-longer-lasting-covid-disinfectant/>)

FOR MORE INFORMATION ON THIS REPORT, PLEASE CONTACT:

CHRISTIN SENIOR

CHRISTIN.SENIOR@UCF.EDU

If this story or any other Ivanhoe story has impacted your life or prompted you or someone you know to seek or change treatments, please let us know by contacting Marjorie Bekaert Thomas at mthomas@ivanhoe.com