

EXPERT-LEVEL VIRAL DEACTIVATION



Surface Disinfection of Enveloped and Non-Enveloped Viruses

What's harder to kill? What disinfectant works best?

Preventing the spread of viruses in healthcare facilities can be challenging due to their various modes of transmission (including direct and indirect contact, airborne, and respiratory droplets) and their different membrane structures. For full coverage, disinfection protocols and products need to be effective against the hierarchy of common viruses outlined below.

THE VIRUCIDAL HIERARCHY

Most Susceptible: Enveloped Viruses

Includes: Influenza, Herpes, Hepatitis B & C, HIV, and SARS-CoV-2

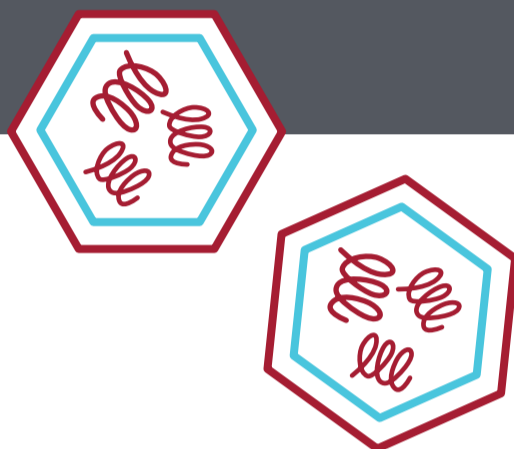
Enveloped viruses are encased in a lipid bilayer. While this membrane helps the virus enter and exit cells, it makes them highly susceptible to everyday disinfectants.



Less Susceptible: Large Non-Enveloped Viruses

Includes: Adenovirus, Rotavirus

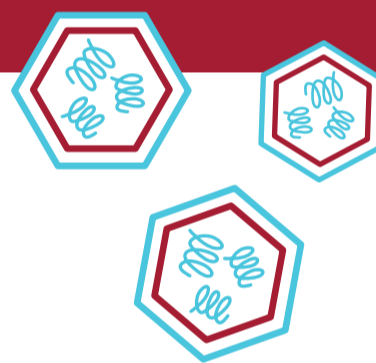
Instead of a lipid bilayer, non-enveloped viruses are protected by an outer protein "capsid." To inactivate the virus, this outer protein layer must be denatured. While challenging, these larger viruses tend to be more sensitive to disinfectants than their smaller counterparts. They respond well to products with a high quaternary ammonium concentration and mid-level alcohol strength.



Least Susceptible: Small Non-Enveloped Viruses

Includes: Norovirus, HPV, Rhinovirus, Hepatitis A, Human Coxsackievirus, Poliovirus

Small non-enveloped viruses are among the most difficult to deactivate. Strong disinfectants that disrupt their protein membranes are the most effective. The formulations should include high-level alcohol, sodium hypochlorite (bleach), hydrogen peroxide, and pH extremes.



For Every Surface:



Determine the level of cleaning and disinfection required: Is it visibly soiled? How is the surface or device used?



Check the label: Make sure the disinfectant that you're using is EPA-registered for your indication and compatible with the target surface.



Follow the contact time and instructions outlined on the label.

RESPONDING TO OUTBREAKS

All acute care and long-term care facilities should have thorough infection prevention protocols in place to prevent the spread of viruses. At times, you may need to supplement that IP program in response to a viral outbreak, such as those caused by norovirus.

WHEN IN DOUBT, LAYER!

Consider using multiple interventions, such as sprays and wipes followed by UVC light disinfection.

