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Handwashing: Clean Hands Save Lives

Show Me the Science - When to Use Hand Sanitizer

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Washing hands with soap and water is the best way to reduce the number of microbes on them in most situations. If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol.

Why? Many studies have found that sanitizers with an alcohol concentration between 60–95% are more effective at killing germs than those with a lower alcohol concentration or non-alcohol-based hand sanitizers [1 (#s6-one),2 (#s6-two)]. Non-alcohol-based hand sanitizers may 1) not work equally well for all classes of germs (for example, Gram-positive vs. Gram-negative bacteria, *Cryptosporidium*, *(/parasites/crypto/index.html)* norovirus (/norovirus/)); 2) cause germs to develop resistance to the sanitizing agent; 3) merely reduce the growth of germs rather than kill them outright, or 4) be more likely to irritate skin than alcohol-based hand sanitizers [1 (#s6-one),2 (#s6-two)].

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Alcohol-based hand sanitizers can quickly reduce the number of microbes on hands in some situations, but sanitizers do *not* eliminate all types of germs.

Why? Although alcohol-based hand sanitizers can inactivate many types of microbes very effectively when used correctly [1-10 (#s7-one)], people may not use a large enough volume of the sanitizers or may wipe it off before it has dried [10 (#s7-ten)]. Furthermore, soap and water are more effective than hand sanitizers at removing or inactivating certain kinds of germs, like *Cryptosporidium* (/parasites/crypto/) , norovirus (/norovirus/) , and *Clostridium difficile* (/HAI/organisms/cdiff/Cdiff_infect.html) [11-15 (#s7-eleven)].

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Hand sanitizers may not be as effective when hands are visibly dirty or greasy.

Why? Many studies show that hand sanitizers work well in clinical settings like hospitals, where hands come into contact with germs but generally are not heavily soiled or greasy [1 (#s8-one)]. Some data also show that hand sanitizers may work well against certain types of germs on slightly soiled hands [2 (#s8-two),3 (#s8-three)]. However, hands may become very greasy or soiled in community settings, such as after people handle food, play sports, work in the garden, or go camping or fishing. When hands are heavily soiled or greasy, hand sanitizers may not work well [1 (#s8-one),4 (#s8-four),5 (#s8-five)] Handwashing with soap and water is recommended in such circumstances.

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