

**TOOL KIT**

# *Cleaning the Mobile Germ Warehouse*

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TAKE a look at your mobile device. Do you see oily fingerprints and lint on the touch screen? Dust and crumbs forming particulate frost in the corners? Is that a hair stuck at the screen's edge?

Because our electronics are constantly within our grubby grasp, they can get pretty gross. They are taken into public restrooms, handed to runny-nosed toddlers, passed around to share photos and pressed against sweaty skin in gyms. Repeated studies show what accumulates is germy nastiness worse than what is on the bottom of your shoe.

“That devices can be a source of disease transmission is not a subject of debate anymore,” said Dr. Dubert Guerrero, an infectious disease specialist at Sanford Health in Fargo, N.D., and co-author of a study about the persistence of bacteria on iPads published in November in *The American Journal of Infection Control*.

So it is a good idea to keep your devices clean, not only to keep from getting sick but also to maintain resale value when it's time to upgrade. Companies like Best Buy, Target, Gazelle, Amazon, Verizon and AT&T all offer trade-in or cash-back programs, said Derek Meister, a technician for the Geek Squad, Best Buy's repair and online support service.

“People don't want any marks or grime on their devices,” Mr. Meister said, because like trading in a used car at a dealership, “the better the condition, the more like new it is, the more money you get on your trade-in.”

A word of warning: Cleaning your device can be tricky, since you don't want to damage it and manufacturers don't give you much guidance. It can be done, however, if you're careful and conscientious.

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Dr. Guerrero and his colleagues found that regularly wiping down your device with a moist microfiber cloth was sufficient to eliminate many kinds of common bacteria. More enduring and dangerous bacteria like clostridium difficile (which can cause diarrhea or even inflammation of the colon) and flu viruses may require a sterilizing agent like bleach or alcohol, he said.

This is a problem, since Apple on its website officially warns against using “window cleaners, household cleaners, aerosol sprays, solvents, alcohol, ammonia or abrasives” to clean its products and advises instead to “simply wipe the screen with a soft, lint-free cloth to remove oil left by your hands.” Other manufacturers offer similar advice or none at all.

And yet, in the Apple Store, you'll find the 32-percent isopropyl alcohol Clens wipes by Bausch & Lomb. Apple declined to explain the contradiction. Nevertheless, the wipes work great at cleaning grime, muck and marks off your device and they also disinfect. A Clens kit that includes three Clens wipes, a 3-ounce bottle of Clens cleaning spray and a cleaning cloth costs about \$20.

But it's far cheaper to make your own alcohol and water solution. To clean his own mobile devices, Mr. Meister at the Geek Squad said he used a 1:1 ratio of 70 percent isopropyl alcohol and distilled water, which together cost less than \$4 at most grocery and drugstores. “You want distilled water and purer alcohol so there are fewer chemicals or minerals left behind when the solution evaporates,” he said.

Fill a spray bottle with the diluted alcohol, lightly moisten a lint-free, preferably microfiber, cloth (no paper towels) and gently wipe down the screen and case. Never spray directly onto the device. To clean corners and around ports, use lint-free foam rather than cotton Q-tips.

If you're supergermophobic, you might consider purchasing an ultraviolet sanitizer. Violife makes a \$50 cellphone sanitizer about the size of a coffee can. Just pop your phone into the dock and replace the lid for ultraviolet light to zap pathogens. Verilux sells a \$40 sanitizing wand, which the company claims kills up to 99 percent of germs when waved over your electronics. This won't improve the look of your device or maximize value at trade-in but it might spare you the sniffles or worse during cold and flu season.

Using a can of compressed air to blow around ports and between keys, on the other hand, will help maintain the look, performance and value of your device. This gets rid of dust and particles that can infiltrate and damage electronics. Another option is to buy a specialized air compressor like the DataVac Electric Duster, which lists for \$100 and comes with all sorts of little attachments for cleaning out your devices' crevices and seams.

"An air compressor gets things really clean and it's environmentally good because you don't have a little can to throw away after blowing air," said Miroslav Djuric, chief information architect at ifixit.com, an online do-it-yourself community. He uses an all-purpose compressor he bought at Home Depot and fitted with an inflating needle (the kind used to inflate a basketball or a bike tire) to precisely direct the air flow.

To repel germs, grease and pet hair from your laptop, there are antimicrobial and protective keyboard, trackpad and palm rest covers that are nearly invisible and washable. Moshi, NewerTech, iSkin and Protect Computer Products all make these covers for less than \$30.

“We get so many computers damaged from kids spilling things on them,” said David Bensinger, owner of The Little Laptop Shop in Manhattan. “At least people say it was their kids when they drop the computers off.”

Washable screen protectors for laptops, tablets and smartphones are available from manufacturers such as Boxwave, BodyGuardz, iSmooth and Moshi at a cost of \$5 to \$40, depending on the size. They are easy to apply and reapply without unsightly bubbles or impaired visibility or functionality of touch screens.

Similarly, Ultra-Sleeves and Chef Sleeves are clear, hygienic and protective iPad and tablet covers. They enclose the entire device and are disposable. They are intended for people working in health care, construction, industrial or restaurant settings. These covers are also ideal for those who might have to share their devices with multiple people during the course of the day, like teachers or salespeople. A pack of 10 costs about \$12.

It’s up to you how obsessively you want to clean your mobile devices, but health and electronics experts advise wiping down your mobile device with a moist microfiber cloth at least daily for basic sanitation and upkeep.

Like your toothbrush, “your mobile device is something you want to clean regularly,” said Dr. Guerrero, the infectious disease specialist. And it is probably not something you want to pass around the table.

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