LAPTOP BATTERIES-BEST PRACTICES

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Are you taking proper care of the battery in your laptop? While chips are getting more efficient and battery life is increasing, avoiding a few mistakes can help extend your laptop battery health in the long term.

Charging It Constantly:

The idea that keeping your laptop plugged in all the time is "bad" stems from the myth of overcharging, but laptops and other gadgets that use such batteries switch to a trickle charge as they near capacity. Your laptop isn't going to explode or "overcharge" if you keep it plugged in all of the time. With that in mind, the lithium-ion battery inside your laptop will last longer if it does not hold a high voltage level for prolonged periods. If we're talking about battery *health*, the life of your battery can be prolonged by not keeping it at 100% constantly. This means using your battery by unplugging it during the day, rather than keeping it plugged in. It might help to think of your laptop as a giant smartphone. The battery tech in your phone is identical to your laptop, but the idea of leaving your phone plugged into the wall constantly is absurd to most people. Just like your smartphone, your laptop battery *will* degrade over time, regardless of what you do to it.

You can try to prolong it by sticking to good practices most of the time, but for most people, it's impossible to be a model citizen when it comes to good battery practices. Your battery capacity will likely have degraded to around 70% of its original capacity in around three years, at which point you can decide to replace it for a modest fee if you're not planning on upgrading.

RELATED: ***How to Generate a Battery Health Report on Windows 10 or 11***

Allowing It to Get Too Hot or Too Cold:

Nothing kills batteries like exposing them to extreme temperatures. It's common knowledge that extreme heat is bad for lithium-ion cells, but the same is true of extreme cold. Leaving your laptop in a car that's exposed to sub-zero temperatures (below 0c or 32f) may result in irreversible damage to the cell. Some electric vehicles (EVs) that use lithium-ion batteries implement temperature management systems in their cars to limit damage in especially cold weather and get better performance on cold mornings. Your laptop doesn't include such systems, which is why you should be especially careful. If the worst happens and your laptop is exposed to the cold, it's a good idea to let the battery warm up before you attempt to use it.

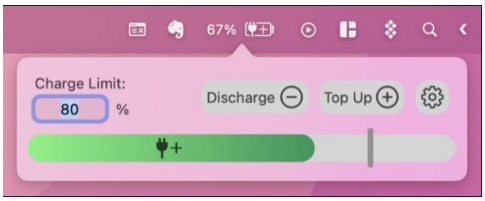
Heat is another cause of damage to your laptop battery, and it's a problem you're likely to come across at any time of year. Letting your laptop sit in the sun for hours is a recipe for disaster, as is letting it get so hot that the safety mechanisms kick in that cause the power to be shut off. You can prevent this by not putting your laptop under load without adequate airflow, in a room that isn't stiflingly hot. Take extra care when using your laptop on a bed or other fabric surface, since many have vents at the sides and rear of the lid that can become easily blocked by soft furnishings.

If you're noticing your laptop is particularly warm under normal use, consider how bad things might get if you tax it with 3D applications or a video render. Dust and other debris can accumulate in the vents and inside the laptop, so consider cleaning it out to improve airflow (especially if it's a few years old). Keep in mind that opening some brands of laptops will void the warranty. If your machine is still under warranty and you're noticing heat build-up, it might be a good idea to contact the manufacturer to get the problem looked at. If nothing else, they can blow out the dust without voiding your warranty for future repairs.

Not Performing Shallow Discharges:

Lithium-ion batteries last longer when they remain within around 40-80% of their maximum capacity. Letting the battery discharge too much may shorten its life, and the same is true of keeping it above 80% for prolonged periods. Many manufacturers now offer battery-preserving “long-life” modes to aid with this, as summed up by Battery University:

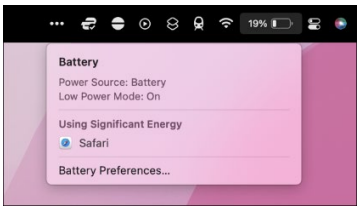
“A laptop battery could be prolonged by lowering the charge voltage when connected to the AC grid. To make this feature user-friendly, a device should feature a ‘Long Life’ mode that keeps the battery at 4.05V/cell and offers a SoC of about 80 percent. One hour before traveling, the user requests the “Full Capacity” mode to bring the charge to 4.20V/cell.” Some laptops allow you to limit the charge percentage to around 80% to prolong the life of your battery. This feature is supported by specific manufacturers using their own apps, like MyASUS for ASUS users and the “Battery Limit Mode” setting for Microsoft Surface users. Other users can try the freeware Battery Limiter app for Windows.



On macOS, you can use AlDente to set a charge limit or use Apple’s built-in optimized charging feature if you keep a regular schedule. Optimized Charging learns from your schedule by keeping your laptop at a reduced capacity until you need it. If macOS recognizes that you take your laptop off charge to go to work each day at 8 am, it won’t perform the full 100% charge until the morning even if you plug it in the night before.

Not Discharging It Once a Month:

This might sound contradictory considering we’ve already stated that allowing a battery to fully discharge is bad news. But never allowing a battery to fully discharge can cause it to become inaccurate when reporting its current charge level. This is bad for a few reasons. To start with, you may not know how much battery you have left and could be caught short. Many other good practices (like keeping your battery above 40%, or limiting charge to around 80%) rely on knowing what your true charge level is.



This is particularly true if you are going all-in on limiting battery charge to less than 100%, using an app like AlDente or Battery Limiter. This kind of usage may require your battery levels to be recalibrated more often, so we recommend fully discharging once a month.

Take Care of Your Smartphone Battery Too:

Since your smartphone is a pocket-sized laptop that’s powered by a smaller lithium-ion cell, much of this advice applies there too. Features like Optimized Charging exist on iOS, which is also known as Adaptive Charging on Android.

Eventually, your battery will be due for replacement. Learn how to tell it’s time to swap out the old cell. Once your battery is ship-shape, make sure you never let it drop too low (more than once a month) by getting a proper portable charger.