Does fast charging affect battery

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Fast charging is a convenient way of replenishing your phone"s battery, provided your device supports it and you have a charger that can output the required wattage. But does this time-saver negatively affect battery life?

A smartphone battery can only utilize fast charging for a limited time. This is because lithium-ion batteries charge in three phases: a slow "trickle charge", a constant current state where voltage increases over time, and a final constant voltage state where the current is slowly reduced to prevent overcharging and damage to the battery cell.

Fast charging only works during the constant current state, which is why many smartphone manufacturers advertise a fast charging window, for example, "charge to 50% in 30 minutes" or similar. Once the final constant voltage phase begins, charging resumes at the standard rate.

The faster power is stored in the lithium-ion cell, the more heat is generated. This means that fast charging generates more heat than standard "slow" charging. This could be an issue since excessive heat will degrade lithium-ion batteries. Fast charging may shorten the battery"s lifespan compared to using a standard charger.

Most studies looking at the heat generated by fast-charging lithium-ion cells are focused on electric vehicle batteries, which are much larger than the batteries found in smartphones. The results of these studies suggest that some methods of fast charging degrade the cell at a much faster rate than standard charging.

Smartphone battery replacements are relatively affordable compared to the price of a new phone. Apple charges $49 to $69 (depending on the device) for an out-of-warranty battery replacement which will restore your device to an as-new state in terms of battery performance.

Many Android devices have easily accessible user-replaceable batteries, while others can be serviced by the manufacturer or a third party for a moderate fee. Both iPhones and Android devices can be serviced with a new battery by the user using parts and guides available from resources like iFixit.

We here at Android Authority are often asking you, dear reader, for feedback on the smartphones running our favorite operating system. One of the most consistent bugbears over the years has been to do with battery life -- whether it"s finicky fast charging or just phones just downright not lasting long enough.

Virtually everyone has experienced gadget battery problems at some point in their life, so it"s no surprise people continuously hunt for smartphones with the best battery life. And if that fails, they dole out all sorts of little tips and tricks to make their batteries healthier and longer-lasting. However, knowing the scientifically-backed tips from the plethora of absolute malarkey is increasingly difficult. In fact, you probably believe one of the many prevailing battery myths (I know I did!). So now it"s time to go on a battery

myth-busting spree.

This is one of the most common rumors we come across but it"s just plain wrong. Or at least the overcharging part is. It"s complicated, as leaving your smartphone plugged in overnight certainly isn"t dangerous but it might make your battery age marginally faster.

"Overcharging" is the term that gets thrown around a lot with this one. The misnomer is if you leave your phone on the charger for a while after it hits 100%, it will keep pumping in the current and that will reduce the capacity of the battery, or even cause it to catch fire.

This myth has some legitimate origins, so it"s no surprise it"s stuck around. In the days of yore, lithium-ion batteries could overheat if you left them charging for too long. This did, in fact, cause damage to the battery and reduce performance. Hell, it even led some to explode.

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