



# Proper Care for JupiterBike Lithium-Ion Batteries

## 1. Avoid quick charging your battery

Example regularly using 1-hour quick charging will decrease the overall life of your battery.

## 2. Do not fully discharge your battery

This will decrease the capacity of the battery and reduce its overall lifetime.

## 3. Do not let your battery fully discharge for a long period of time

Batteries like to be used regularly and keep a charge. Keeping a battery dead for a long period of time makes the battery in simple term lazy. The internal battery regulator needs a slight charge to do its job and if the battery is totally dead the regulator will not work, and the battery may not charge.

## 4. Do not keep your battery fully charged for a long period of time

Always keeping the battery fully charged will reduce the batteries lifetime.

## 5. Do not overheat your battery

Batteries like to be kept at a moderate temperature for maximum charge. Batteries below a certain temperature have reduced battery power and the same is true when a battery gets too hot. Avoid parking your E-Bike in direct sunlight on hot days.

## 6. Use about 80% of the batteries charge before recharging

Constantly charging your battery and keeping it fully charge is not the best. If you can go back and forth to work on a single charge, do not charge your E-bike at work. Instead, charge your bike when you get home when the battery has reduced to 10 to 20%. This will maximize the overall life of the battery.

## 7. Don't drop the battery

The battery is generally quite heavy and is housed in a plastic and metal casing. Dropping a battery can seriously damage or ruin it. Be sure your bike does not fall over and if you have your battery in your backpack handle it with care.

## 8. Never store the battery with an empty or low charge

A battery is a little like a muscle. The molecules will get lazy and will not recharge. A battery left totally dead for a long period of time will dramatically reduce the overall life and running time it may likely not charge at all.

Many bike shops owners say people come in with dead batteries all the time because of poor storage practices. Avoid

storing your battery at extreme temperatures. When charging your battery be sure you are in an open vented area at a moderate temperature.

Overheating can cause the charger to overheat and possibly start a fire. Don't just leave your charge hooked up to the battery for long periods of time.

Many chargers have auto shut off but if the charger remains connected the battery may naturally lose some charge, and the charger will kick in and charge the battery to 100%. This continual charging will shorten the range of your bike.



### How long do most batteries last?

Many batteries will typically last around 3 or 4 years before you will start noticing a decrease in range. You will have to charge more often. You may begin to notice you run out of power on the way home from your round trip to work where you use to be able to make it all the way back.

If it happens sooner, the reason for this may be caused by overcharging, over-discharging or poor balance. All can affect the lifespan of a rechargeable battery.

### Overcharging

When you plug in your battery beyond the recommended charge time. Like many of us we plug it in and go to bed, many batteries require only 4 to 6 hours to fully charge and are often plugged in for many more hours or even forgotten for days.

This is not good for your battery, and this will gradually reduce its charge capacity, and the charge will last a little less time for each charge. Add to that that a battery only has a certain number of charges and this further reduces the overall battery life. It's a good idea to have a timer on your charger and set it for the correct length of time.

### Over discharging

In simple terms, it is discharging a battery to the point that its voltage is below some critical level which can be damaging, or even dangerous. Do not let your battery discharge below the recommended cut off voltage. When you plug in a charger to a battery that is below cut off voltage the charger often will not see it and will not recharge the battery.

So do not let your batteries totally discharge. Usually, the battery pack should have some sort of supervisory circuit that disconnects the cells from the charger or load when the cells are above or below the recommended voltages. Storage where large ambient temperature changes are possible.

It is recommended to store Li-Ion half-charged, to prevent "overcharged state" (i.e., when fully charged cell cools down to below 0C.)

### Undercharging

Undercharging is just that: charging your battery just under full charge. Some chargers are programmable and have the ability to set voltage levels manually and undercharge your battery.

### What to do before storing your electric bike for the season

Always charge your batteries before storing. But charging a battery to 100% will reduce the overall life of the cell. It is best to have it at about 50% charge or just under a full charge. If you cannot set the voltage level, then go for a little ride after fully charging batteries, and you should be good.

So don't forget about your batteries over the winter. Basically, rechargeable batteries like to be used regularly and sitting dormant is not ideal. But due to seasonal riding, this can't be avoided. Give them a little love over the winter, and hopefully, they will last a little longer

