



An Extended Guide · No. 2023

Winter Storage & Cold-Weather Battery Care for E-Bikes and Scooters

Storing at the right charge and
temperature, and riding in the cold

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! Read this first — lithium batteries deserve respect

E-bikes, scooters, and powered chairs run on big lithium-ion batteries. Treated well they are safe; abused or damaged they can overheat and catch fire fast. Charge only with the charger that came with your device, on a hard surface like concrete or tile — never on a bed, couch, or carpet — and not right in a doorway or stairwell that is your way out in a hurry. Don't leave a battery charging unattended or overnight, and unplug it once it's full. Stop using any battery that is swollen, very hot, hissing, leaking, or giving off a strange smell, and keep it away from anything that burns. If a battery is smoking or on fire, get everyone out and call 911 — these fires are hard to put out. Cold adds a wrinkle: never charge a battery that's ice-cold — let it warm toward room temperature first — and keep charging indoors on a safe surface, not in a freezing shed.

Let's get your battery through the winter

Cold weather is hard on lithium batteries — they give less range when they're cold, and stored badly over a long winter they can lose capacity for good. The good news: a few simple habits keep your battery healthy through the coldest Ohio months, so it's ready come spring.

I'm Bill, and I run Bill's Home Tech here in Portage County, Ohio, where winter is a real thing. I'll give you the plain-English version of how to store and care for your e-bike or scooter battery when it's cold — always checking your own maker's manual for the exact numbers.

Whether you ride year-round or park the bike until spring, this guide has you covered. Treat the battery kindly in winter and it'll reward you with years of good service.

★ Want help putting your bike away for winter?

Storing it right is a 20-minute job once you know the steps. I'm glad to walk you through it or do it with you. Call or text (330) 200-8042.

The whole guide, on one page

If you remember only these things, your battery will come through winter in good shape.

- ❑ Store the battery indoors at room temperature, not in a freezing garage or shed.
- ❑ For long storage, leave it partly charged — follow your maker's recommended level, not full and not empty.
- ❑ Check on a stored battery now and then and top it up if it drifts low.
- ❑ Never charge an ice-cold battery — let it warm toward room temperature first.
- ❑ Riding in the cold is fine, but expect less range and a weaker-feeling assist.
- ❑ Keep charging safe: own charger, hard surface, attended, away from exits.

✓ The idea to hold onto

Cold itself rarely ruins a battery in a day — it's a long winter stored wrong, or charging it frozen, that does the harm. Keep it warm, partly charged, and checked on, and you're set.

Why cold is hard on batteries

A little understanding makes the habits stick. Here's what cold does to a lithium battery, in plain terms.

When a lithium battery is cold, the chemistry inside slows down. The practical result is that it can't deliver as much power or hold as much usable charge — so your range drops and the assist can feel weaker on a frigid day. That effect is temporary: warm the battery back up and the range returns.

The lasting harm comes from two things: charging a battery while it's very cold, which can damage it, and leaving it fully charged or fully empty in the cold for a long stretch, which can permanently sap its capacity. Avoid those two and the cold won't leave a mark.

✓ Less range in the cold is normal, not a fault

If your winter rides feel shorter on a charge, the battery usually isn't failing — it's just cold. Range bounces back as things warm up. Don't panic-buy a new battery over a cold snap.

Where to store the battery over winter

The single most important winter decision is where the battery sleeps. Warm and dry wins.

Store the battery indoors at normal room temperature — a closet, a heated basement, a utility room — not in an unheated garage or shed where it'll sit near freezing for months. Most e-bike and scooter batteries lift out, so you can bring just the battery inside even if the bike stays in the garage.

Keep it dry, away from anything flammable, and somewhere you'll pass by and remember it — not buried in a far corner. Avoid big temperature swings, like right next to a drafty door or a hot radiator.

! The cold garage is the classic mistake

Leaving the battery in a freezing garage all winter is the most common way folks shorten its life. If you take one thing from this guide, let it be: bring the battery indoors for the winter.

The right charge level for storage

How full you leave the battery for a long rest matters more than people realize.

For long storage, most makers recommend leaving the battery partly charged — somewhere in the middle, neither full nor empty. A battery left completely full for months, or allowed to drain completely, tends to lose capacity over time. The exact level is in your manual; follow that, because makers differ.

If your battery or charger has a storage mode or a way to charge to a set level, use it. Otherwise, charge to roughly the middle before you put it away, and plan to check it through the winter.

✓ Check your manual for the number

Some makers say a specific percentage to store at. Rather than guess, look it up once and jot it down. 'Partly charged, per the manual' is the safe rule when you're not sure.

Checking on a stored battery

A battery in storage slowly loses charge on its own, so it needs an occasional look — not fuss, just a check.

Every few weeks through the winter, glance at the battery's charge. If it's drifted low, top it back up toward that middle storage level (letting it warm to room temperature first if it's been anywhere cold). This keeps it from quietly draining to empty, which is where lasting harm can happen.

Set a reminder on your calendar or phone so it doesn't slip your mind — a battery forgotten at the back of a closet for four months can come out the worse for it. A two-minute check now and then is all it takes.

✓ A reminder beats good intentions

The battery won't nag you, so let your phone do it. A recurring winter reminder to 'check the bike battery' is the easiest way to keep a stored pack healthy.

Never charge an ice-cold battery

This is the cold-weather safety rule that matters most, so it gets its own page.

Charging a lithium battery while it's very cold — below freezing — can damage it in a way you can't see and may not fix. So if your battery has been out in the cold, bring it indoors and let it warm up toward room temperature before you plug it in. Never rush this with a heater or hot water; just let it come up gently.

This is a big reason to charge indoors in winter anyway. Charging in a freezing garage risks both a too-cold battery and the usual fire-safety concerns of a cluttered space. Indoors, on a hard surface, attended, is best.

! Warm first, then charge

If the battery feels cold to the touch, don't plug it in yet. Let it sit indoors until it's close to room temperature. Charging it frozen is one of the few ways cold does permanent, invisible harm.

Riding in the cold

Plenty of folks ride through winter, and you can too — with a few adjustments for the battery and the conditions.

- Expect less range and a slightly weaker assist in the cold; plan shorter trips and keep more charge in reserve.
- Keep the battery warm until you ride — store it indoors and install it just before you head out.
- After a cold ride, let the battery warm up indoors before charging.
- Watch for ice, wet leaves, and salt-slick spots; brake earlier and ride slower.
- Dress warm, and protect your hands so you can work the brakes and controls.

✓ Install the battery warm

A neat trick: keep the battery inside the house and only pop it onto the bike right before you ride. Starting with a warm battery gives you more of its range before the cold starts to bite.

Staying safe on cold, slick roads

The battery isn't the only winter concern — the riding itself gets trickier, and an e-bike's weight and speed ask for extra care.

Cold roads bring ice, packed snow, wet leaves, and road salt that can all cut your traction. Slow down, give yourself far more room to stop, and brake gently and early — grabbing the brakes on a slick patch can put you down. Fat, grippy tires help, but no tire beats good judgment.

Shorter daylight means you'll more often ride in the dark, so good lights and bright, reflective clothing matter even more in winter. And if conditions are genuinely icy, there's no shame in leaving the bike home that day.

! When in doubt, don't ride the ice

No trip is worth a bad fall on ice. If the roads or paths are slick, give it a miss — the bike will be there when conditions improve, and so will you.

Two kinds of riders, two sets of needs

Your winter plan depends on whether you're parking the bike or riding through. Two pictures sort it out.

If you're putting the bike away until spring

You ride in the warm months and hang it up for winter. Your whole job is storing it so it's ready and healthy when the weather turns.

- Bring the battery indoors to room temperature for the whole winter.
- Store it partly charged, per your maker's recommendation.
- Set a reminder to check and top it up every few weeks.
- Store the bike itself clean, dry, and out of the weather.

If you ride through the Ohio winter

You keep rolling in the cold. You need the battery to perform and the riding to stay safe on tricky surfaces.

- Keep the battery warm indoors and install it just before riding.
- Plan shorter trips and keep charge in reserve for the cold.
- Let the battery warm up before charging after a cold ride.
- Slow down for ice, salt, and wet leaves, and light yourself up well.

★ Not sure which winter is yours?

Tell me how you use the bike and I'll help you set up the right winter plan — storage, charging, or safe cold-weather riding. Call (330) 200-8042.

Putting the bike away for the season

A proper winter tuck-in takes about twenty minutes and pays off in spring. Here's the routine.

- ❑ Give the bike a wipe-down to remove dirt, grime, and road salt.
- ❑ Dry it well, especially the chain and metal parts, then lightly oil the chain.
- ❑ Check the tires and inflate them to the proper pressure.
- ❑ Remove the battery and bring it indoors, charged to the storage level.
- ❑ Store the bike out of the weather, off damp concrete if you can.
- ❑ Jot down anything that needs fixing so you remember come spring.

✓ Clean before you store, thank yourself in spring

Road salt and grime left on all winter cause rust and wear. Ten minutes of cleaning now means a bike that's ready to ride, not a project, when the weather warms.

Winter care for scooters and power chairs

Mobility scooters and power chairs carry the same kind of battery, and the cold rules apply — with an extra wrinkle for folks who rely on them daily.

If you use a mobility scooter or power chair year-round, keep it and its battery somewhere warm — indoors or in a heated space — so you get full range and never charge it frozen. The cold saps range just as it does on a bike, which matters a lot when the device is how you get around.

Store spare batteries at room temperature, charge indoors on a safe surface, and in icy weather be extra careful on ramps and sidewalks, which get slick. Our charging and at-home guides cover the daily routine in more depth.

! Don't get caught short on a cold day

Because cold cuts range, a scooter you depend on can leave you shorter on power than expected on a frigid day. Keep it warm, charge it fully before going out, and don't push to the edge of the range in the cold.

Tires and cold weather

Here's a small thing that catches people out: cold air makes tires go softer.

As the temperature drops, the air in your tires contracts and the pressure falls, so tires that were perfect in fall can be noticeably soft in deep winter. Soft tires make the bike sluggish, harder to balance, and more prone to pinch flats. Check the pressure more often in winter and keep them topped to the pressure marked on the sidewall.

If you're parking the bike for the season, set the tires to proper pressure before storage and give them a look in spring, since they'll have softened while sitting.

✓ Check tire pressure on cold mornings

Make a habit of squeezing the tires before a cold-weather ride. If they feel soft, a few pumps restores the easy, stable feel — and heads off a flat.

Keeping moisture and road salt at bay

Ohio winters mean wet and salty roads, and both are tough on an e-bike if you let them linger.

Road salt is corrosive — left on the bike it eats at metal parts and connections. After a wet or salty ride, wipe the bike down and dry it, paying attention to the chain, bolts, and the battery contacts. Don't blast the battery or electrical parts with a hose; a damp cloth is kinder and safer.

Keep the battery's contacts clean and dry, and make sure the battery and port are dry before charging. A little attention after each winter ride keeps corrosion from taking hold.

✓ A quick wipe beats a spring of rust

You don't need a full wash after every winter ride — just a quick wipe to get the salt and wet off the metal and contacts. Two minutes now saves corrosion later.

Waking the bike up in spring

When the weather turns, a few checks get your bike safely back on the road after its winter rest.

- ❑ Bring the battery to room temperature, then charge it fully.
- ❑ Check and inflate the tires to proper pressure.
- ❑ Test both brakes — they should grab firmly and evenly.
- ❑ Look over the chain; clean and oil it if it's dry.
- ❑ Check the lights and the display or app come on properly.
- ❑ Take a gentle first ride in a safe spot to make sure all is well.

★ Let me do your spring tune-up check

A quick spring once-over — battery, tires, brakes, lights — is exactly the kind of thing I'm glad to help with so your first ride of the year is a safe one. Call (330) 200-8042.

Common winter mistakes

A handful of avoidable slip-ups account for most cold-weather battery woes. Now you'll know them.

- **Leaving the battery in a freezing garage** all winter — the classic way to shorten its life.
- **Storing it full or empty** for months instead of partly charged.
- **Charging it ice-cold** straight from the shed — warm it first.
- **Forgetting it entirely** so it drains to empty over the winter.
- **Riding on ice** like it's dry pavement, and taking a hard fall.
- **Leaving salt and wet on the bike** to corrode all season.

! The battery mistakes are the costly ones

A fall on ice heals, but a battery ruined by a winter in the cold or a frozen charge means an expensive new pack. Protect the battery first, and ride only when it's safe.

How winter care affects battery life over the years

Good winter habits aren't just about this season — they add up over the life of the battery.

Every battery slowly loses capacity as it ages, but how you treat it speeds that up or slows it down. Batteries kept at comfortable temperatures and sensible charge levels last longer than ones repeatedly frozen, baked, drained flat, or left full. A few winters of good care can mean real extra years of range.

So think of winter care as an investment. The small effort of bringing the battery indoors and keeping it topped up pays off not just next spring but for years of riding to come.

✓ Gentle treatment buys you years

You can't stop a battery from aging, but kind treatment — cool not cold, not full not empty, never charged frozen — genuinely stretches its useful life. Winter care is a big part of that.

Keeping winter charging safe

Winter tempts people into risky charging habits — charging in the garage, rushing a cold battery. Keep the safety basics in mind.

All the fire-safety rules from our battery-safety guide still apply in winter, plus the cold-specific one: charge indoors on a hard surface, clear of what burns and of your exit, attended, with the right charger — and only after a cold battery has warmed up. Don't be tempted to charge in a cluttered garage just because it's cold out.

Resist any urge to warm a battery quickly with a space heater, hot water, or an oven — that's dangerous. Gentle, room-temperature warming is the only safe way.

! Never force-warm a battery

A heater, hair dryer, hot water, or oven can damage a battery or start a fire. If it's cold, patience is the only safe answer — let it come up to room temperature on its own, then charge.

A simple winter routine to settle into

Pull it all together and winter care becomes a light, easy rhythm.

If you're storing the bike: clean it, bring the battery indoors at a partial charge, and check the battery every few weeks. If you're riding through: keep the battery warm, install it just before you ride, warm it before charging, and slow down for slick roads. Either way, keep charging safe and indoors.

None of it is hard, and once it's habit you'll do it without thinking. Come spring, you'll have a battery that's as healthy as the day you parked it, ready for a new season of riding.

★ I'll help you build your winter routine

Whether you're hanging it up or riding on, I can help you set a simple winter routine that keeps the battery healthy and the riding safe. Call (330) 200-8042.

When in doubt, check your manual

One honest reminder before the questions: makers differ, so your manual is the final word on the numbers.

I've given you the general rules that hold true for lithium batteries, but the exact storage charge level, temperature range, and any storage mode vary from maker to maker. Your device's manual spells out what's right for your battery, and following it beats any general advice, including mine.

If you've lost the manual, the maker's website usually has it, or a dealer can help. And if you're ever unsure, erring on the side of 'room temperature, partly charged, warmed before charging' is a safe default.

✓ Keep the manual where you'll find it

Tuck the battery's manual in with your home papers, or save a copy on your phone. The winter numbers for your specific battery are worth having at your fingertips.

Common Questions

The questions I hear most about winter battery care, answered plainly.

Q: Can I leave my e-bike battery in the garage all winter?

It's best not to if the garage freezes. Bring the battery indoors to room temperature for the winter — most lift out easily. A long winter near freezing is a common way to shorten a battery's life.

Q: How charged should I leave it for storage?

Partly charged — somewhere in the middle, not full and not empty — and topped up if it drifts low over the winter. Your maker's manual gives the exact level to aim for; follow that.

Q: Why does my range drop so much in the cold?

Cold slows the battery's chemistry, so it delivers less power and usable charge. It's temporary — range returns as things warm up. Keep the battery warm until you ride to get the most from it.

Q: Can I charge my battery right after a cold ride?

Let it warm toward room temperature first. Charging a very cold battery can cause hidden, permanent damage. Bring it inside, give it time, then charge — and never force-warm it with a heater.

★ Winter questions?

Storing or riding through winter, I'm glad to help you keep your battery healthy and your riding safe. Call or text me at (330) 200-8042.

You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made winter care for your e-bike or scooter feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I'm a tech helper, not your device's maker — for the exact storage temperature and charge level, follow your battery's manual, and I'll gladly help you set up a safe, simple winter routine.

★ Bill's Home Tech — real help, close to home

Call or text me at (330) 200-8042, or visit BillsHomeTech.com. Serving Atwater and all of Portage County. 30+ years of patient, plain-English tech help — and if you're ever not 100% happy with a visit, I'll make it right or refund it. That's a promise. — Bill

Winter Battery Rules

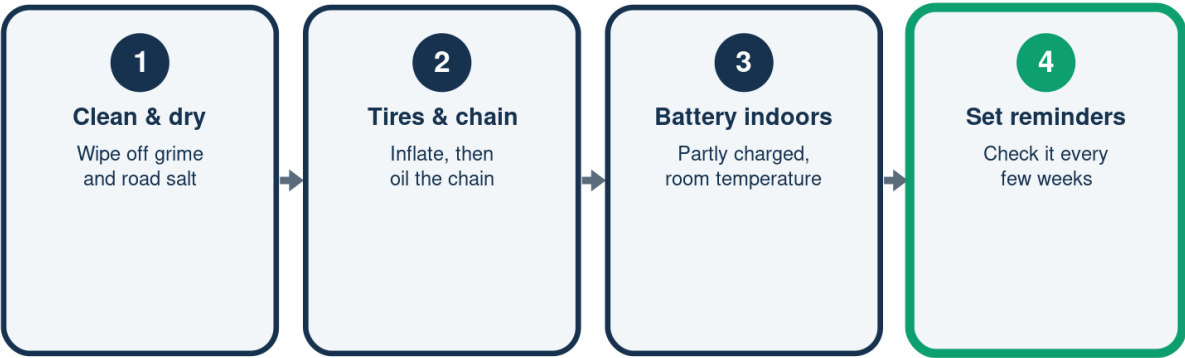
Keep the cold from leaving a mark

	Do	Don't
Storage temp	Indoors, room temp	Freezing garage
Charge level	Partly charged	Full or empty for months
Charging cold	Warm it first	Charge it frozen
Check-ins	Top up every few weeks	Forget it till spring

Cool not cold, not full not empty, never charged frozen.

Putting the Bike Away

A 20-minute winter tuck-in



Clean before storing, and thank yourself come spring.

Riding Through Winter

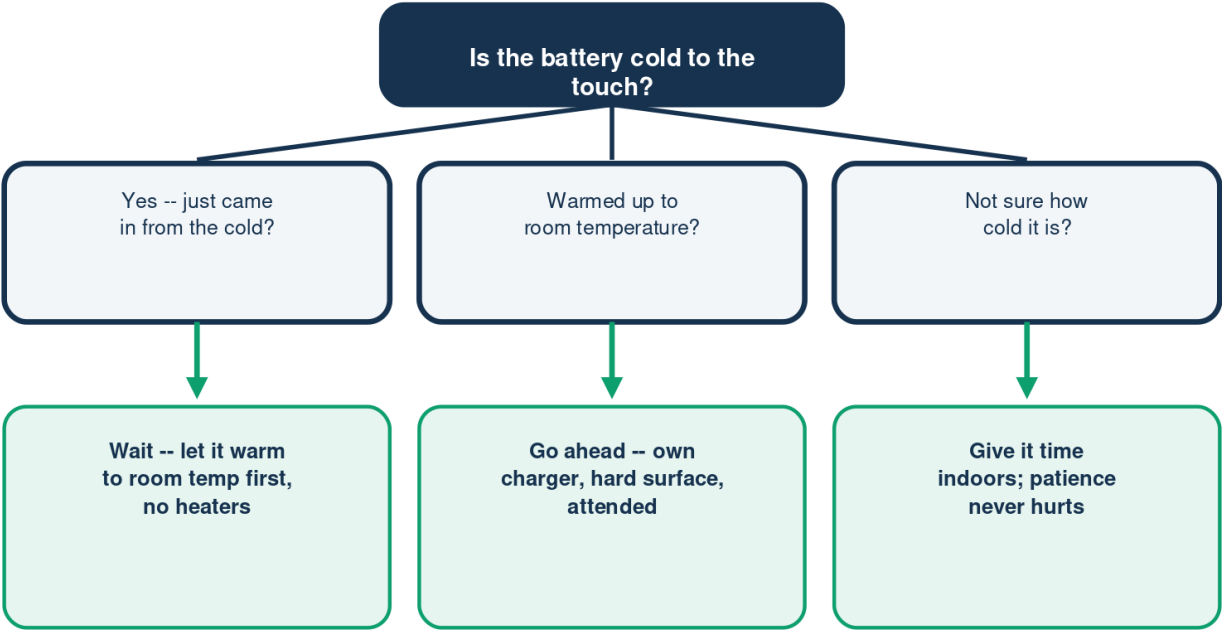
Battery and road, both need care

	What changes	What to do
Less range	Shorter trips,	keep a reserve
Cold battery	Keep warm,	install before riding
Slick roads	Slow down,	brake early
Short days	Lights and	bright clothing

When roads are icy, there's no shame in staying home.

Can I Charge It Now?

The cold-weather charging question



Charging a frozen battery can cause hidden, permanent damage.

Illustration - a schematic, not to scale. Your setup may differ.



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A Note From Bill

A quick note from Bill.

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