

Safety and Education
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Electric Bikes
(E-Bikes)



Definitely a KABC Club Member

INTRODUCTION

A friend recently asked me: “Think you would ever buy an e-bike?” I replied: “you bet!” Then he said: “You mean you would get rid of your road bike.” I replied: “no way.”

You know the formula for “how many bikes should one person own, right.?” It’s $n+1$, where “n” is equal to the number of bikes that you currently own. That is to say, an e-bike would add to my fleet of bikes, not replace any of them.

Are you thinking about getting one? Don’t know the good and the bads? Don’t know if it’s right for you? Fair enough: read on and then ride on.

If you get one, don’t forget the extra-long extension cord!

What Is an E-Bike? Here’s Everything You Need to Know

SALES OF ELECTRIC BIKES ARE SOARING. HERE’S WHY EVERYONE LOVES THEM—AND WHY YOU PROBABLY WILL, TOO



Trevor Raab

The first thing you should know about e-bikes is that they're here to stay. Electric bike sales jumped by an incredible 240 percent over a 12-month period as of September 2021, compared to two years prior, according to the market research firm NPD Group. It's a nearly \$27 billion industry as of last year, and there's no sign of a slowdown.

Some view the rise of e-bikes as a threat, as though standard bikes will go the way of the penny-farthing once everyone goes electric. But fear not: E-bikes aren't here to rob us of our human-powered way of life. In fact, they may very well enhance it—especially as travel and commuting habits change following the coronavirus pandemic and shift of work commuting. So as we roll our way into peak riding season, here's everything you need to know about the electric bike revolution.

1. E-bikes make pedaling easier.

Generally speaking, e-bikes are bicycles with a battery-powered “assist” that comes via pedaling and, in some cases, a throttle. When you push the pedals on a pedal-assist e-bike, a small motor engages and gives you a boost, so you can zip up hills and cruise over tough terrain without gassing yourself. Also called “pedelecs,” they feel just like conventional bikes—but better, says Ed Benjamin, senior managing director at the consulting firm eCycleElectric. “You control your speed with your feet, like with a regular bike,” he says. “You just feel really powerful and accelerate easily.”

In addition to the pedal-assist feature, some e-bikes come with a throttle that engages the motor with the press of a button. These belong to a separate class of e-bike that, obviously, doesn't offer a pure cycling experience; they're also illegal in some municipalities. Interestingly, Benjamin says, people who aren't already “cyclists” tend to gravitate toward throttle bikes at first, but then turn around and choose a pedal-assist for their next purchase.

2. They go pretty fast... to a point.

The harder you pedal, the bigger the boost, the faster you'll ride—to a point. E-bikes let you hum along at a brisk clip, but they aren't motorcycles. You'll never hammer down the road at 45 mph. The motor is designed to stop propelling you further when you hit 20 to 28 miles per hour, depending on the bike. So you'll save time on your commute (I shave about three minutes off a five-mile trip) but still enjoy the scenery.

You can also control how big of an assist you get. Most e-bikes come with a power switch that lets you adjust the boost setting from “eco” (low) to “turbo” (high), for when you want a little more oomph to help you, say, up a steep hill.

3. You'll ride a lot more, even if you already ride a lot.

Getting an e-bike can dramatically increase how often you ride, according to a survey of nearly 1,800 e-bike owners in North America. Beforehand, 55 percent of respondents said they rode daily or weekly. After buying an e-bike, that number soared to 91 percent. It makes sense: Even if you're super fit, you still get tired (likely from training or racing) and remounting your bike can feel like a chore. If you have an e-bike, you can continue riding while giving your knackered legs a bit of a break. You can also go faster, which makes biking for longer trips more attractive, even when you're pressed for time.

For those who aren't frequent riders, e-bikes open up a whole new world. While you may not be conditioned to ride five to 10 miles at a time, you can cover those distances easily with an electric assist, which is a great way to build endurance and confidence. That same survey found that 94 percent of non-cyclists rode daily or weekly after getting an e-bike.

4. There's an e-bike for everything.

Name a type of riding, and there's an e-bike for that. If you have zero interest in an electric road bike, you may find yourself head over heels for a high-capacity e-cargo bike that can haul 400 pounds of stuff while still cruising at a cool 15 mph. E-bikes are available in fat, cargo, commuter, recreational, hardtail, full-suspension mountain, and even performance road bike styles. For proof, here are the best e-bikes for every type of cyclist.



Trevor Raab

5. They can replace driving.

“People are buying electric bicycles as a way to reduce car trips,” Benjamin says. The data backs him up: 28 percent of survey respondents said they bought an e-bike specifically to replace driving a car. And many other reasons buyers listed for wanting an e-bike—including carrying cargo and kids, avoiding parking and traffic, and environmental concerns—also indicate a desire to get out from behind the wheel. Plus, you don’t need to change clothes or clean up when you arrive at your destination, because you don’t have to work up as much of a sweat.

Consider, too, that more than half of all driving trips are shorter than 10 miles, with some surveys reporting that the average single trip amounts to just 5.95 miles. That’s a no-brainer distance to cover by e-bike. In fact, the survey found that owners replaced 46 percent of their car commutes and 30 percent of their driving errands with e-bike rides. All you need is a great commuter bag to carry your stuff, and you’re set.

6. Yes, you still get exercise.

E-bikes do some of the work for you, but they still count as exercise, especially for people who are otherwise sedentary. Colorado University researchers found that when 20 non-exercising men and women e-biked about 40 minutes three days a week, they improved their cardiovascular fitness and blood sugar in just one month. “Many people are not fit enough to ride long enough to get meaningful health and fitness benefits from biking,” Benjamin says. “Put them on an electric bike and they can go out and ride for an hour and get a significant amount of exercise.”

Even if you’re in excellent shape and very fit, you still can get exercise by e-biking. When I did a head-to-head comparison of commuting with my cross bike versus a recreational e-bike, I found that my relative effort was much lower, and I burned about half as many calories, on the e-bike. But I still burned something—up to 200 calories per hour, the equivalent of what you burn by walking. And I opted for quick e-bike rides to town where I would usually drive, which means I was considerably more active overall.

7. The batteries are getting better.

There's no getting around it: E-bikes give you yet another device to charge. Right now, you can expect your battery to last anywhere from 35 to 100 miles before it needs a recharge. Where you fall in that range depends on the size of the battery and how much power the motor draws. Obviously, if you buzz around on "turbo" all day, you'll run out of juice faster than if you run on lower, more economical settings. But we also expect e-bike batteries to improve in the future.



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8. Trail access can be tricky.

E-bikes remain a subject of controversy in mountain biking circles. You may not be able to take one on your favorite singletrack right now, as many non-motorized trails still prohibit them. However, things have been tilting in a more permissive direction. IMBA, the sport's largest public advocacy group, shifted its stance in 2017 to support allowing access for some pedal-assist e-bikes (those that top out at 20 mph) on some trails. With every major manufacturer making e-mountain bikes, more access is likely only a matter of time. "In a few years, people will realize that electric mountain bikes have no more trail impact than a regular mountain bike," Benjamin says.



Trevor Raab

10. They're hefty.

The first thing many cyclists do when checking out a new bike is give it a lift to gauge the weight. You're in for a little scale shock if you try that with an e-bike. The battery, motor, extra components, and reinforced frame make e-bikes inherently heavier than standard bikes—to the tune of about 20 extra pounds. Modern geometry and engineering help them handle well despite their weight, and obviously the motor-assist makes the extra pounds disappear when you start to pedal. But you'll need more muscle to get them on your car rack or up and down stairs.



Thomas Trutschel//Getty Images

11. They're the future of transportation.

Every major bike manufacturer—and literally dozens of smaller ones—is already in the e-bike game. Car companies aren't far behind. Ford bankrolled an electric bike-share system in San Francisco in 2018 (that was rebranded by Lyft in 2019), and GM launched two e-bikes of their own. "The car business is jumping in with both feet," Benjamin says, "because they realize that cars in high-density urban areas, where more than half the human race lives, just aren't working anymore." With big transportation players like Uber and Lyft seeing massive success with e-bikes, and cities searching for ways to relieve traffic congestion, programs may only continue to expand.

12. Now, you can even race them.

It's not as crazy as it sounds. In Europe, where the e-bike market has exploded, the European Cycling Union created a new racing circuit for e-bikes, including e-road and e-mountain bikes, for the 2019 season. Following suit, the UCI first included an electric mountain bike competition in the 2019 World Mountain Bike Championships. Yes, a rainbow jersey was awarded to the world's best off-road e-biker!

13. It's impossible to ride one without smiling.

That's the truth. Our testers—all of whom are passionate traditional bike riders and/or racers—enjoyed tossing a leg over a pedal-assist bike so much that they took to calling them “wheeel!” bikes. We're willing to bet you'll agree.

Sold? You're obviously not alone. If you're new to the e-scene, it's important to note that, though you never forget how to ride a bike, an e-bike is no ordinary bike. Because they're heavier and faster, you should take a few extra measures of caution to enjoy the ride safely.

Okay riders, that's it for this week. I hope that you found that interesting. Until next time,

Make Every Ride Epic,

Darryl