No, e-bikes aren’t cheating

A common complaint you hear about electric bikes is that they basically amount to cheating. Cycling, especially mountain biking, is supposed to be about exercise and promoting healthy living, but how healthy can you be when the bike’s motor and battery are doing most of the work for you? A new study out last month – the first to investigate the health effects of pedal-assist electric bikes – puts to rest many of these misconceptions.

Researchers from Brigham Young University recruited 33 subjects, mostly men between the ages of 18 and 65, to ride both regular mountain bikes and electric, pedal-assist mountain bikes on a rolling six-mile, single-track course through the Utah countryside. Afterward, they compared their heart rates and found that riding an e-bike is no effortless fling. In fact, it requires almost as much physical exertion as riding a traditional mountain bike.

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Riding both types of bikes “placed the vast majority of participants in the vigorous-intensity heart rate zone,” the study authors concluded. The average heart rate of a test subject riding an e-bike was 93.6 percent of those riding conventional bikes. Moreover, electric bikes appear to be an “excellent form of aerobic or cardiovascular exercise, even for experienced mountain bikers who regularly engage in this fitness activity.”

The researchers also surveyed their test subjects, both before and after riding, to determine their attitudes toward e-bikes. Some said their preconceived notions were confirmed, while

others admitted the experiment subverted their beliefs. Most were positive toward e-bikes before the test, with only 18 percent saying they were opposed. Some attitudes changed, though, with fewer participants willing to admit after the test that e-bikes were just a passing fad.

Most importantly, the vast majority of the test subjects said they didn't feel like they got a workout while riding an e-bike – despite heart rate monitors and fitness trackers indicating that most participants experienced "vigorous" levels of exercise. This raises the possibility that e-bikes could be well suited in helping both experienced cyclists and "more sedentary individuals" to meet their physical fitness goals.

Exercise that doesn't really feel like exercise seems like a pretty major breakthrough, especially if the goal is to get more "sedentary individuals" off the couch and into a more active lifestyle.

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One area of concern identified by the BYU team was speed. Rider speeds on the e-bikes were four miles per hour faster on average. But the higher speeds achieved on an e-bike could impact people's negative perceptions of them. For example, an e-bike rider who rudely passes other cyclists on a bike path could ultimately harden some opinions toward e-bikes. More research will be needed before making any determinations, though.

There have been a handful of smaller studies on the health effects of e-bikes, but the BYU study, published in the *Journal of Medical Internet Research*, is notable for its larger sample size. A small study in Boulder, Colorado, in 2016 found that a month of commuting on an e-bike improved fitness and blood sugar levels. Most participants also said they spent more time in the saddle than the study authors

required, mostly because they were having so much fun.

Overall, participants in the BYU study were more accepting of e-bikes after riding one. “The adage ‘don’t knock it until you try it,’” the study authors conclude, “appears applicable with pedal-assist technology.”

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