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Dentists and their patients have long asked the question: are electric toothbrushes better than manual toothbrushes? While the answer will come down to personal taste, budget and people's access to the latest dental technology, science has come up with a clear answer to the quandary. But, as with many answers, there are some exceptions and circumstances to consider when deciding if an electric toothbrush would be better than a manual toothbrush. Your age, the health of your teeth, and whether you're undergoing any dental treatment are all contributing factors that would help a dentist decide if an electric toothbrush would be best for you. Discover the pros and cons of manual versus electric toothbrushes, and who should be using which one. You can also find great savings on some of the best electric toothbrushes, including Oral B electric toothbrush deals (opens in new tab), as well as the best electric toothbrushes for kids. What are the best options for children and adults? The most appropriate toothbrush option for you will change throughout your life, and can depend on whether you are going through dental treatment at any given time. So, the first step is breaking down toothbrush options (depending on your age group). Research published in the International Journal of Pediatric Dentistry (opens in new tab) found that electric toothbrushes were the best option for children who have their teeth brushed by a parent or were independent enough to brush their teeth effectively on their own. Dentists surveyed by the American Academy of Pediatric Dentistry (opens in new tab) advise that your child should be treated by a dentist from the age of one year. Your child's dentist will recommend when you need to start using an electric toothbrush to clean their teeth. (Image credit: Getty) Researchers have looked into whether teenagers look after their teeth more effectively when given a manual or electric toothbrush. The data shared in the BMC Oral Health journal (opens in new tab) showed that over two weeks, teens who were given an electric toothbrush brushed their teeth for longer and had less plaque at the end of the experiment. Dentist Dr. Amo Sohal, MDDr. BSc. Pg (dip) (opens in new tab) confirmed this, and told Live Science that "electric, sonic, or powered toothbrushes are clinically proven to be more effective than a manual brush in keeping gums and teeth healthy." Dr. Hannah Kinsella (opens in new tab) recommended using a sonic toothbrush: "I recommend that patients use a sonic toothbrush because the brush does all the work for you, so all you need to do is to move it around your mouth and not apply too much pressure as this can damage gums." Sonic toothbrushes differ from other brushes because they move much faster than their oscillating counterparts meaning you simply need to place the brush head on the three surfaces of each tooth to get a good clean. As with any rule, there are some exceptions. After having dental surgery, you may need to consider using a specialist toothbrush for a few weeks. Research shared in the Scientific World Journal (opens in new tab) found that using a manual soft toothbrush with extra-fine bristles was the most comfortable option during recovery from dental surgery. They also found that by using a comfortable toothbrush, people could keep up with their oral hygiene routine better. There are also specific recommendations for those having orthodontic treatment. For example, researchers at the Angle Orthodontist (opens in new tab) journal found that oscillating-rotating toothbrushes were more effective at removing plaque and reducing decay than sonic toothbrushes for patients with fixed braces. We've broken down the main points of comparison between manual and electric toothbrushes so you can figure out the best option for your needs. The pros and cons: Manual toothbrushes Price point: Manual toothbrushes range between \$0.00 and \$15 depending on the make and model according to current listings on Walmart (opens in new tab). Effectiveness: Manual toothbrushes rely on the user's technique to be efficient. Dr. David Rice told Live Science that the type of manual brush you choose is crucial: "if you're going to use a manual brush, it's very important to make sure you're using a soft-bristled brush. Pressing too hard can damage your gums and/root surfaces of your teeth if they are exposed for any reason." Functions: Manual toothbrushes get the job done. They're helpful to use when you're on a tight budget, to have in your car or at work as a backup, or if you're traveling. Models tend not to vary too much from one brand to another. Accessibility: Handles on manual toothbrushes tend to be narrower than for some electric toothbrushes. The Journal for the American Geriatrics Society (opens in new tab) found that accessibility may be an issue for those who struggle with arthritis in their hands or other neurological or musculoskeletal conditions that affect dexterity. Sustainability: Manual toothbrushes are more sustainable than electric toothbrushes. Manual brushes with detachable heads and bamboo toothbrushes were both found to be the most sustainable options, according to research published in the British Dental Journal (opens in new tab) in 2020. (Image credit: Amazon) The pros and cons: Electric toothbrushes Price point: Between \$5 and \$200 depending on the make and model according to current listings on Walmart (opens in new tab). Effectiveness: The consensus between all the dentists we spoke to is that electric toothbrushes are more effective than manual brushes at removing plaque and keeping your teeth and gums as healthy as possible. Functions: Electric toothbrushes have a range of functions that vary depending on the make and model. Some include timers to ensure you have brushed your teeth for long enough, and others also have sensors to warn you when you're applying too much pressure while brushing. Accessibility: According to the Cochrane Database of Systematic Reviews (opens in new tab), researchers have found electric toothbrushes help to improve oral hygiene in people with disabilities because of how effective they are at reducing plaque. The length of time needed to brush teeth effectively is less than with a manual toothbrush, relieving carers of an otherwise lengthy and uncomfortable task for their patient or loved one. Sustainability: Electric toothbrushes are not the most sustainable option for oral care. They do, however, tend to require less water usage when brushing teeth than manual brushes, according to research published in the British Dental Journal (opens in new tab). Today's best Electric Toothbrushes deals (opens in new tab) (opens in new tab) View Deal (opens in new tab) (opens in new tab) View Deal (opens in new tab) (opens in new tab) Outdoor furnaces can heat your home efficiently. Firewood is cheaper than natural gas or oil, and wood is a natural resource that can be replenished. As its name implies, outdoor furnaces are designed to be placed outside the house and supplement your home's existing source of heat, thus lowering your heating costs. When choosing an outdoor furnace, it's important to choose the right size. [source: Service Magic] Follow these steps to learn how to install an outdoor furnace. Make a concrete pad large enough to hold your furnace, with room for you to stand when loading the furnace. Make sure the pad is at least 4 inches (10.16 centimeters) deep. (You will have to make a mold to pour the concrete in.) Dig a trench below the frost line from the furnace to the house, with a backhoe. The trench will prevent heat loss or freezing of the pipe, since the ground will be between 45 and 55 degrees Fahrenheit (7 and 13 degrees Celsius). Place the furnace on the concrete pad. Measure the distance from the house to the furnace. Take a PEX pipe (i.e. hot water pipe) of that length and put it in the trench. Place the same length 12/3 110V wire in the same length 4x6 PVC pipe. Put the PVC pipe into the trench too. Mount a heat exchanger in the outlet plenum (ventilator) of the furnace. You should be able to buy one that fits your plenum. The heat exchanger should easily slide into the plenum. You can fasten it in place with an L-shaped bracket. Connect one end of the PEX pipe to the furnace, and the heat exchanger to the hot water heater. Use another run of pipe and a pump to fasten the other end of the PEX pipe to the hot water heater. Put the circuit breaker into the breaker box. Attach the 110V wire to the circuit breaker and the furnace. Install and connect the thermostat. Fill the furnace with water. Start the fire. [source: Outdoor Wood Furnaces] Motortelle image by WJ from Fotolia.com Manual transmissions allow a driver to manually shift gears to power a vehicle forward or backward. Unlike automatic transmissions that use fluid, vacuum and pressure to shift the gears, the driver selects the gear to be used and determines how long that gear stays engaged. Many things must be considered when removing and rebuilding a manual transmission. Installing a manual transmission can also be challenging due to transmission's weight and lack of balance. Disconnect the negative battery cable. Use the floor jack to lift the vehicle high enough to place two jack stands under the rear part of the frame and two jack stands under the front part of the frame. With the help of an assistant, place the manual transmission in a transmission dolly jack. Set the transmission housing squarely in the jack cradle and cinch the four end clamps against the case housing. Loop the two safety chains completely around the transmission case and join the links together with two bolts and nuts. Tighten the nuts finger tight. Slide the transmission jack under the vehicle. If you have left the shifter linkage and arm attached, maintain a clear path for it to enter up into the passenger cabin through the plate access opening. Pump the handle on the jack to lift the transmission. The transmission input shaft should be parallel with the opening on the bell housing. Move the transmission forward. Make fore and aft adjustments on the front and rear tilt knobs on the the transmission jack to align it. Use the fore, aft and side tilt knobs on the jack to reach the correct alignment plane. Push the transmission input shaft toward the opening of the clutch and pressure plate. Align the splines of the input shaft with the clutch splines. To help align the splines, turn the transmission on its side axis by turning the the side tilt knobs on the jack. Once aligned, push the transmission completely forward until the end of the transmission input shaft seats in the pilot bearing hole. If you have a 1/2-inch gap between the bell housing and transmission, the pilot bearing did not align properly. Pull back and reinsert. Install the the transmission mounting bolts by hand into the threads of the bell housing. Tighten them with a torque wrench, according to your repair manual's specifications. Twist the knobs to loosen the jack clamps by hand. Remove the nuts and bolts on the safety chain and remove the chain. Push the transmission jack away from the vehicle. Connect any wire back to the transmission that belongs to solenoid or speed sensor, if so equipped. Loosen and remove the side plug gear oil fitting with an end wrench. Fill the transmission gear box with the prescribed gear oil, according to your manufacturer's specification. Screw the filler plug back in and tighten it with a socket. Reinsert the clutch pedal rod to the throwout bearing pivot joint by hand. Pull back on the throwout bearing fork to set it in its seat. Use an open end wrench to adjust the clutch pedal free play. Insert the drive shaft input shaft into the output shaft of the transmission. Align the splines correctly and push the drive shaft forward until it seats. Reconnect the rear U-joint to the rear differential yoke. Insert the bolts through the universal joint end caps. Tighten them to the yoke with a socket. Replace the center console unit inside the passenger cabin around the shift handle. Screw the console unit down with the screws or bolts (provided) with a screwdriver or socket. Use the floor jack to lift the vehicle and remove the jack stands. Reconnect the negative battery cable and tighten the terminal to the battery post with a socket. Start the engine and note the clutch pedal operation and shift movement. Adjust the linkage or clutch pedal free play, according to manufacturer's specifications in your repair manual.

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