# Power to the pedal: a bicycle and e-bike maintenance guide

Whether you use your bike to commute, get the kids to school, do the grocery run, or just take a lazy meander through a park on the weekend, maintenance is key. Janina Waldmann brings us this helpful resource for looking after our pushies and e-bikes, with a little help from some of Sydney's bike gurus.



Image: iStock/vadimguzhva.

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The bicycle. Means of transport, lyrical muse, emissions saver. Is there anything it can't do? If a bicycle is your trusted friend and companion, keeping it in top-notch condition is essential.

**Maintenance basics for all types of bikes**

To keep your bike running as smoothly as possible, weekly or fortnightly maintenance should focus on the ABCs:

- Air: Maintain tyre pressure and check tubes for damage. Patch any holes or rips
- Brake: Check the brake pads for wear by checking the wear indicators on rim brakes or examining the pad material on the metal backing on a disc brake. Take your bike for a slow walk and apply the brakes to check for even and smooth engagement
- Chain: Clean the chain with a stiff-bristled brush and a degreasing agent, allow it to dry completely and then apply a chain lubricant. Check for signs of rust or damage.

**The rise of the e-bike**

Australia is not exactly known for its cycling culture. Compared to some European countries like the Netherlands, where over a quarter of trips are completed by bike[1], cycling is practically foreign here. Safety, distance, and Australian cities' propensity for hilliness are all factors keeping Aussies in their cars. The e-bike eliminates at least two of these factors, making it a far more appealing option for commuters and families alike.

In fact, families and commuters are the demographics Chris Langley, Workshop Manager at Glow Worm Electric Bikes in Marrickville, sees most often. Not only does he see families embracing the e-bike, but many e-bike riders he interacts with have foregone a second car completely in favour of an e-bike. "We're finding a lot of families either selling a second car, or not getting a second car and getting an e-bike, or some families just ditching the car fully and going for the cargo bike," he explains.

Your average e-bike sets riders back around $4000, and families spend up to $7000 or even $8000 on a cargo bike with carrying capacity for two children, so it's no wonder the service and maintenance market is busy.

While an e-bike might cost a similar amount as a used car upfront, the ongoing maintenance and running costs are far lower. There's no need to worry about registration, insurance, or fluctuating petrol prices when on a bike.

**E-bike maintenance and repair 101**

Chris notes that, while e-bikes use mostly the same components as traditional bikes, they wear through them much faster, as the parts are subject to additional strain through more use and added weight in the case of the increasingly popular cargo e-bike. "People get a little surprised at how quickly their brakes wear out," Chris says. Many existing e-bikes use the same kind of hydraulic disc brake system you'd find on a traditional bike, but it operates under significantly more stress.

When it comes to repair and maintenance, the type of e-bike you have can affect what you can or can't fix yourself.

***- Mid drive bikes***

The motor is located near the pedals on a mid drive bike, causing additional strain on the chain. While that means you'll likely need to keep a closer eye on the condition of the chain, and it may need replacing sooner, there are also clear advantages to mid drive bikes for experienced users who like to tinker with their bikes themselves.

Motor location on a mid drive bike means other parts are more accessible. If you know your way around a bike, you can do some basic maintenance at home, including replacing the brakes if you're confident.

***- Wheel motors***

A motor located in either a front or rear wheel hub is trickier. The wheels are typically difficult to remove and block access to other parts, so the DIY potential of this kind of bike is lower. Workshops like Glow Worm have hoists and stands they utilise to work on motor wheel bikes from different angles.

**Service schedule matters**

Whether you're riding an e-bike with motor wheels or a mid drive bike, all e-bikes tend to get more of a workout than a traditional bike, thanks to the motor making it easy to cover longer distances and complete more trips. On average, Chris recommends having your e-bike serviced by a specialist workshop every six to eight months, particularly if you're using it to commute.

Cargo bikes, designed to carry a rider and one to two passengers (usually kids), will

1 https://english.kimnet.nl/documents/2024/01/10/cycling-facts-2023



Chris from Glow Worm.

wear through parts even faster due to the added weight. Bring this type of e-bike in for a service closer to the six-month mark, and keep an eye and ear out for signs it may need to be seen sooner.

### The battery

If there's one element riders shouldn't mess with themselves, Chris says it's batteries and chargers.

He explains that quality e-bike batteries that are looked after well are low-risk, but they should only be serviced by a licensed dealer or a workshop with e-bike experience. An e-bike battery typically has a 4-5-year lifespan, but a high-quality battery can last up to seven years with the proper care.

You'll notice when the battery is nearing the end of its life. "You're not going to be able to go as far, but also it can't output as much power sometimes for sustained periods of time. So just say you're going up a hill, you might find that power drops off a bit," explains Chris. If you notice a change in your battery's performance, take it to a workshop for an expert opinion.

To maintain your battery's health, Chris's top tip is to charge it as needed, trying to avoid draining it completely. He explains that e-bike batteries are happy to be topped up regularly, so shorter charges when you need a top-up are perfectly fine. There's no harm in unplugging your battery before it reaches a full charge.

The charge level is also important if you need to store your battery for a longer period. You should store your battery at between 30% and 60% charge, but never when it's completely drained or full. Check your battery's charge level periodically, and store it in a dry, cool, well-ventilated area with a smoke detector.

Bring your battery into a workshop if it's been dropped, even if there are no outward signs of damage. Similarly, if the casing is cracked or damaged, a pro can tell you if it needs replacing or is safe to continue using.

With proper care, Chris says your battery will serve you well: "if you want to get five to seven years out of a battery, doing those things and looking after the week to week stuff really makes a big difference, particularly given the battery is the most expensive part of an e-bike."

### Signs your e-Bike needs some love

Your e-bike will let you know if it needs extra attention outside your regular service schedule.

Take your e-bike in for a check-up if:

- The brakes begin to squeal when used
- The brakes are less efficient or feel spongy
- You drop the battery
- Your battery casing is cracked
- Gears jump or shift poorly.

Take good care of your e-bike, and it will reward you with many years of faithful service. And if you do decide to move on, you can rest assured that your investment won't be in vain. According to Chris, the second-hand e-bike market is strong, and e-bikes tend to keep their value well over time.

### Traditional bicycle maintenance and repair

The traditional bike has often been described as recession-proof, and buying and maintaining one is by far the most economical transport option available.

Susie, a volunteer bike mechanic at Bicycle Garden in Sydney Park, has seen an uptick in cycling, particularly since COVID-19. Some of that uptick can be explained by frustration at poor public transport connections, even across small distances. "If you're, say, going from... Erskineville to Leichhardt...I think it's 45 minutes by public transport, and I could ride it in 20," she says. Travelling by bike makes certain parts of Sydney far more accessible than they are by current public transport connections.

If you've opted out of the e-bike craze and prefer an old-fashioned pedal bike, you're in luck. Susie says there's almost nothing you can't fix or replace yourself with the right tools and a little elbow grease. She sees riders come in for assistance to replace chains, brakes, and tyres, as well as more complex elements like gears.

Susie explains that bikes are hardier than people expect, "I hear the phrase a lot, of people saying they can't be bothered looking after their bikes, so they're going to ride it into the ground, I hear that all the time. And it's funny because it's really hard to ride a bike into the ground. I mean, you can wear everything out on it, but all those things are also completely replaceable. Until a frame is cracked or compromised, you're in an

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accident, and the frame is gone, every single component of the bike can be replaced."

However, that doesn't mean bike maintenance should slide to the bottom of your to-do list. While parts can be replaced, constantly wearing through them means your bike will be out of action for longer, and you'll be spending money on replacement parts when a regular check-in with your bike could have saved you the money and the headache.

Susie recommends that riders spend a few minutes maintaining their bikes every fortnight, depending on their riding habits. "If you're riding in the rain," she says, "you may need to oil the chain more regularly."

For more complex repair jobs, or if you lack the tools and confidence to work on your bike without guidance, drop into an open-access workshop like that offered by Bicycle Garden or take your bike to a local workshop.

**Behind the scenes—Bicycle Garden works towards equitable access to bike know-how**

Bicycle Garden was initially founded as Chain Lynx, a bike workshop for women, trans, and non-binary people, in response to the lack of gender parity in cycling. Sometimes, Susie explains, "you have to create inclusionary spaces to bring in people that are otherwise discouraged from being there in the first place or feel intimidated." Over time, Bicycle Garden grew around the program, leading to open-access workshops and a permanent space in Alexandria's Sydney Park Cycling Centre.

Chain Lynx's purpose is to remove the first barrier to bicycle maintenance for women, trans, and non-binary people who might otherwise feel intimidated, excluded or unwelcome in traditional, male-dominated biking spaces. "It just means people can kind of relax in the space, feel comfortable, start gaining confidence and figure out if they like wrenching on bikes," Susie explains. The program works. Chain Lynx participants not only gain the skills and confidence to maintain their own bikes, but Susie often sees them attending open-access workshop hours as well.

Today, Chain Lynx is one of two programs run by Bicycle Garden. The other is Pedal Power, where volunteer bike mechanics like Susie get together and refurbish bikes that are then sold at low cost or donated to people in need.

Bicycle Garden runs open-access workshops several times a week. The goal is to facilitate bike maintenance without a financial barrier, so workshops are held on a pay-what-you-can basis.

During COVID-19 lockdowns, open-access workshops weren't possible, but Bicycle Garden was able to run four-person workshops. During this time, the team prioritised front-line workers, like healthcare workers and teachers, allowing them to opt out of crowded public transport situations to keep themselves safe. Susie says she saw a significant increase in cyclists during COVID-19 because it offered riders a safe and legal way to exercise during lockdowns and a means of transport without infection risk.

Whether traditional or electric, a bike is far more than a frame and wheels. It's a cost-effective way of staying active, getting around, and keeping Australia's transport emissions low.



Image: iStock/MixMedia.

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### Cycling as part of a low-emissions future for Australia's transport sector

The Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts reports that transport sector greenhouse gas emissions accounted for 21% of Australia's total emissions in 2023. More concerningly, transport sector emissions are on an upward trend and are projected to be the largest contributor to national emissions by 2030. Bigger and heavier cars are dominating our roads, and they have the potential to undo any inroads made in reducing vehicle emissions through fuel efficiency improvements and electric vehicle uptake[1].

A 2021 report by the Committee for Sydney estimated that, in Sydney, two million car trips under 2km are made each weekday[2]. If the average cyclist moves at around 20km/h, a 2km trip would take about six to ten minutes, allowing for external factors like waiting at traffic lights and terrain. Remove the need to find parking on a crowded city street, and it's clear that trips under 2km could easily and quickly be completed by bike.

1 https://www.infrastructure.gov.au/infrastructure-transport-vehicles/towards-net-zero-transport-and-infrastructure
2 https://sydney.org.au/wp-content/uploads/2021/05/Committee-for-Sydney-Making-Sydney-a-cycling-city-May-2021.pdf