

Choosing the right equipment and clothing for cycling can sometimes make the difference between pleasure and pain. Bike stores may often resemble a tangled jungle of gear and gizmos, but understanding what you actually need for riding will ensure a more enjoyable (and economical) shopping experience.

Do not be alarmed by the size of this document!

What follows is merely an overview of items you may want to purchase and/or upgrade down the road. You do not need *all* of these items right away, if ever, but understanding what is available is the first step to determining what you want to invest in.

For purposes of budgeting, I have included approximate prices (starting at entry level), but costs can vary widely. It's true that spending a bit more will often get you a superior product, so don't be afraid to ask questions and check out all your options. The salesperson at the bike shop is there to help you, not rip you off — after all, they want you to return to their store again!

FOR THE BIKE

Saddle

Saddles come in a huge variety of models and the right one for you is most often a matter of individual preference and fit. How the saddle is shaped is more critical for riding comfort than the amount of gel or foam padding. Sometimes too much padding can actually cause you to sink into the saddle, aggravating numbness rather than alleviating it. An overly soft saddle can cause also bouncing, which wastes energy — hence the uncomfortable-looking hard seats used by many racing pros.

What's important is that the saddle provide support for your sit bones, which will reduce the pressure on sensitive areas and reduce chafing. You can locate your sit bones by sitting on a low platform, such as a curb, and noting where your butt touches the surface.

A cutaway or recess in the centre of the saddle will usually help to prevent discomfort. The bars that support the saddle (called "rails") make a difference as well — for example, titanium rails absorb more road vibration and are therefore more comfortable over longer distances than standard alloy rails.

Decent saddles start at around \$50, although many cyclists will spend up to \$120-\$150 for true riding comfort. It's not unusual to go through a few saddles and adjustments before you find the perfect set-up — some stores will let you return a saddle within a certain amount of time, so ask around.

Pedals

Being able to pull up on the pedals as well as push down is crucial for an efficient and powerful pedal stroke, and therefore prevents fatigue, discomfort and even injury. If you are going to be doing any serious cycling, you should be using **clipless pedals** (\$50 and up), or at the very least, **cages** (\$15) that can be attached to standard pedals.

Clipless pedals are available in varying weights and styles, but they all do the job. Pedals with sealed bearings cost more, but are smoother, lighter and require less maintenance. Some pedals feature a greater degree of “float”, which is the range of swivel your feet have while clipped in. If you have knee problems, you should check out models that allow plenty of float.

Tires

One of the most cost-efficient ways to “upgrade” your bike is to install **better tires** (\$20 and up). If you use a mountain or hybrid bike for road riding, buy a pair of “**slicks**”, which are usually narrower and smoother than the tires that come with the bike.

For long-distance road riding, investing in a lighter, softer high-end tire results in less rolling resistance and a silky-smooth ride. **Quality road tires** cost more, at about \$80 per tire (i.e. Michelin Pro Race – often found at the Toronto Bike Show for \$40-50), but can make a cheaper road bike feel like a more expensive model. Softer tires are usually good for about 10,000km, but will wear down very quickly if used on a stationary trainer, so buy a cheap tire (i.e. Continental Sport) to install on your rear wheel during the off-season.

Make sure that tires are the right size for your wheels – usually 700C for road bikes and 26” for mountain bikes.

Cyclo-computer

A **cyclo-computer** (\$20 and up) will help you monitor your training and follow a route map by giving you important data such as speed and mileage. It’s worth spending the extra money to get a computer that has a **cadence feature** (\$50 and up), as pedaling speed is paramount to improving as a cyclist.

Wireless models are tidier and easier to install, but they generally cost more, and some models are susceptible to interference. To conserve battery energy they usually don’t have an “auto-start” feature, which means that you have to remember to turn the computer on every time you resume cycling after a stop.

If you might ever use the bike for indoor training, get a rear-mounted computer so you can still get a reading while using a stationary trainer. Installing and programming the computer can be a complicated process, so you may want to get the bike store to do the job for you.

On the road essentials

For all-important hydration while on the bike, you’ll need **bottle cages** (\$6 and up) and **water bottles** (\$4-\$8) to go in them, or a **backpack hydration system** i.e. Camelback (\$40 and up). Generally, for road cycling, water bottles are preferable to a Camelback – you don’t really want to have anything on your back for hours at a time during a long ride on a hot day.

For the inevitable flat tires, buy a portable **frame pump** (\$15 and up) that attaches to your bike in case of flats on the road. Check that the pump will inflate your tires to the pressure you need (road bike tires need 110-120psi) and make sure it will fit your tire’s valve – Presta (the little one used on most road bikes) or Shraeder (the fat one used on wider tires). If the pump is adaptable, make sure it’s set up correctly for your valves before you take it on a ride. An alternative to a frame pump are **CO₂ cartridges**, which, through an **CO₂ adapter** that fits on the valve, dispense enough air to completely inflate the tire in the shortest amount of time. The disadvantage of cartridges is that if you get a lot of flats on a ride and use up your supply, you’re out of luck.

Always carry **spare tube(s)** (\$4-\$8), **tire levers** (\$3) and a **patch kit** (\$3). Make sure that tubes are the right size and have the right valve for your tires – usually 700C with a Presta valve for road bikes, and 26” with a Schrader valve for mountain bikes. Standard Presta valves are 34mm long, but some wheels with deep rims require 48mm or even 60mm valves. If you’re unsure about which length you need, buy the 48mm – a slightly longer valve is easier to get your pump head onto.

With patch kits, note that once you open a tube of rubber cement, it begins to evaporate and will dry up within about 6 months, so check opened tubes occasionally to make sure they are still usable!

Consider buying an all-in-one **minitool** (\$10-\$40) with Allen wrenches, screwdrivers and more, for making adjustments and emergency repairs while on the road. And finally, purchase a **saddle bag** (\$20-\$40) to carry all this stuff in (though some cyclists feel that it’s cooler to carry it all in their jersey pockets).

If you’re going to be riding at twilight or in the dark, carry or install lights as a safety precaution. **Miniature LED lights** that are bright yet small enough to pop in your pocket are available at most bike stores for as cheap as \$4. They are meant more for visibility rather than illumination.

FOR YOUR BODY

Helmet

A good helmet (\$40 and up) should bear a label saying it meets the Canadian Standards Association standard CAN/CSA D113.2 M89; or the American National Standards Institute (ANSI) standard Z90.40 1984; the Snell Memorial Foundation standard B 90, B 90S, N 94, or B 95; the American Society for Testing and Materials (ASTM) standard F 1447 93 or F 1447 94.

The main difference between helmets made for road cycling and those made for off-roading is in the vent design. Road helmets have longer narrower vents to provide good airflow while remaining aerodynamic. Off-road helmets have wider vents, as it’s assumed that you won’t be riding as fast but still need to cool off. Road helmets don’t need visors as they may obstruct vision when riding in a more bent-over cycling position. More expensive helmets feature superior vent design, fit-adjustment systems, and are made from lighter materials, which can make a big difference after a few hours on the bike.

Your helmet should fit snugly and not obstruct your field of vision. Most helmets come with adjustable padding to achieve the best fit. The front of the helmet should be about two finger widths above your eyebrows. The helmet should be level when worn. If it’s tilted back like a baseball cap, it is next to useless as it will leave your forehead exposed in the event of a collision. If it’s tilted forward, it may obstruct your vision.

When buckled, you should be able to fit one finger between the chin strap and under the chin. The yoke buckles (the plastic pieces connecting front and rear straps) should rest at the corner of your jawbone, below your ears. In use, the side yolk straps must be taut with the helmet level on your head as you fasten the chin strap. Excess chin straps can be trimmed – melt the edge of the trimmed strap to prevent fraying.

Here are three tests to check for a secure helmet fit:

The shake test. Shake your head from side to side. The fit pads should hold it snugly in place.

The open-mouth test. When you buckle the chin strap and open your mouth, you should feel the helmet press firmly against the top of your head.

Peel-off test. If you can “peel” the helmet off your head to the front or rear when the chin strap is tightened, the straps need to be tightened more.

Do not use a helmet after it has been involved in an accident. Damage to the helmet may not be visible to an untrained eye. Even very small cracks in the helmet may greatly reduce a helmet’s effectiveness in preventing injury. All helmets deteriorate over time and should be replaced after five years.

Shoes

Wearing proper **cycling shoes** (\$100 and up) makes a huge difference in riding comfort and ability. Sneakers will do for fitness riding, but if you are covering longer distances, cycling-specific footwear provides a more efficient power transfer to the pedals that results in less fatigue and improved performance.

Shoes should fit snug, with no fore-aft movement, but your toes should not touch the front of the shoe. Road-style shoes generally have three straps for a more precise fit. High-end models may have a ratchet system for fine-tuning tightness while on the bike. Some designs feature a criss-cross lace system that distributes tightness evenly. Like saddles, shoe choice is highly personal and the perfect footwear really depends on the rider.

Though it may seem counter-intuitive to comfort, the stiffer the sole the better. A stiff sole provides more support – if the sole flexes, it means your feet have to “wrap around” the pedal with each stroke, which may cause discomfort over long rides. Carbon or carbon-reinforced soles are more expensive but are very stiff as well as being lightweight. Good ventilation will also keep your feet comfortable during the journey.

Jerseys

The high-end fabrics used in **cycling jerseys** (\$50 and up) are lighter than wool and cotton, hold their shape better, and keep you comfortable by allowing sweat to move away from the skin and evaporate. They feature at least two or three pockets in the back to easily carry and access snacks, tools, money and id. Jerseys with longer zippers can be opened up for greater cooling in hot conditions. Many serious road riders wear jerseys with short sleeves to protect their shoulders from sun and road rash in case of a fall, but some cyclists prefer going sleeveless – it’s really a matter of personal preference.

Shorts

I have a formula for buying shorts: \$ spent on a pair of shorts

= the number of kilometers you will be able to ride in those shorts comfortably A pair of \$50 shorts are fine for jaunts around town and spinning

classes, but once you get into longer distances you will want to invest in better bottoms. You just can't put a price on comfort in this area. **Quality shorts** (\$100-\$150) usually feature a more comfortable shammy (the padded area in the crotch), flatlock stitching, a drawstring to help hold them up, and superior panel construction that will last longer than cheaper models. More panels also mean that the shorts will fit better. For real luxury, **bib shorts** have suspender-like straps that eliminate the need for an elastic waistband, providing a more comfortable fit.

When buying shorts, be sure that they fit snug as they will stretch over time. If the shorts begin to sag they can cause chafing. By the way, never wear underwear under your shorts – newby alert!

Gloves

Cycling gloves (\$20 and up) prevent numbness in the hands, and if you fall, they will protect your palms from road rash. They should fit snug – when trying them on make a fist hands to check that they don't bunch up too much in the palms. Gel padding is helpful, especially in the lower palm where the most pressure is applied. Newer designs feature "fused" padding – the gel is separated into smaller pockets which prevents it from getting pushed around. A terry cloth thumb is great for wiping away unsightly snot or sweat. When removing gloves, peel them off inside out to prevent stretching them too much.

Sunglasses

Sunglasses are essential for protecting your eyes from wind, dust and harmful UV rays. This is another item where you get what you pay for – I won't even quote a price as the range is so vast. More expensive **sunglasses** (\$60-\$200) are lighter, tougher and more effective than cheaper models. Good quality lenses are more scratch-resistant and can actually improve vision by heightening contrast, allowing you to more easily spot obstacles on the road surface ahead.

While dark lenses are ok, do check out red or brown lenses that suit a wider range of lighting conditions. Models that feature **changeable lenses** are a bonus – you can get a pair of yellow lenses for very cloudy days and clear lenses if you ride in heavy rain or dark conditions. When trying on eyewear, make sure the nose piece fits comfortably and that the shape of the frames allow total peripheral vision.

Raincoat

Always carry a **waterproof or water-resistant jacket** if there is any chance of rain. Even in warm weather, your body temperature can drop dramatically if you get soaked, causing muscle fatigue, misery, and in extreme cases, hypothermia. Most cycling stores carry the standard **clear plastic raincoat** (\$20). While it's not very breathable (most have vents under the arms), it will at least keep you warm and is very packable. You can roll it into the size of a water bottle and wrap it with a Velcro pant strap to tuck it into your jersey pocket in case of sudden showers or a drop in temperature.

Cold weather clothes

Dressing for lower temperatures can be quite a science – there are many options and combinations for cold weather fashion. With practice, choosing the right outfit for a ride becomes easier, but the key is to dress in layers so that you can remove or add clothing if conditions change.

Arm (\$25), **knee** (\$25) and **leg** (\$40) warmers are great – a cost-effective way to adapt your summer riding clothes for cooler weather, and are easily removable if the temperature increases. A **long sleeve jersey** is nice to have for cool riding days, and you can layer with a long sleeve base layer underneath. If you already have full-length tights, you can wear them over your cycling shorts instead of using leg warmers.

A **cycling vest** (\$40) helps to keep your core warm in cool and windy conditions, and if the weather warms up, it folds up small to fit in your jersey pocket.

For chillier days, you'll need a lightweight **cycling jacket** (\$60 and up). A good breathable jacket will keep you warm and dry by allowing perspiration to escape while blocking the wind. Wearing a base layer, a **thermal undershirt** (\$30 and up) will help to regulate temperature while wicking sweat away.

Long finger gloves (\$40 and up) are essential for cooler weather. If it's very cold, **lobster-style mitts** (\$60) keep your hands warm while allowing you to still operate your brakes. Optional **glove liners** (\$8) can be worn alone or underneath gloves to keep hands warm by wicking away dampness. **Mitt shells** (\$20) are worn over gloves in rainy or windy conditions and are easily stored in your back pocket if no longer needed.

Most cycling shoes are ventilated, so your precious toes are susceptible to numbness when the temperature drops even just below 10 Celsius, making for an uncomfortable ride. **Foot covers** are available in a range of models for various conditions, from **toe warmers** (\$20) for cool mornings to full **neoprene booties** (\$40 and up) for winter riding. (A cheap solution is to cut holes in the soles of a pair of thick wool socks to go over your shoes. Looks funny, but it works) A good pair of athletic or hiking **wool socks** (\$15-\$30) will also help ward off the chill, but make sure they aren't too thick – a tight fit will constrain blood flow to the feet and make your feet even colder.

For keeping your ears and head warm, a **thermal headband** or helmet liner is necessary for cool days. For very cold days, you can also get **ear warmers** that fit underneath your helmet.

BASIC MAINTENANCE

Floor Pump

You must have a **floor pump** (\$40 and up) for inflating your tires to the maximum pressure before each ride. Your frame pump is really only meant for emergencies – it's inefficient for pumping to maximum pressure and will wear down quickly with regular use. It's also impossible to tell if your tires are pumped to the correct pressure without the gauge that is found on floor pumps – you cannot measure psi by touch.

And yes, you should pump tires up before each ride – a tire that is even just 10psi under the recommended pressure slows you down by as much as 2k/hr and also increases the likelihood of getting a flat tire.

Chain cleaning tools

It is essential that you clean your chain on a regular basis. A well-maintained chain will last longer, cause less wear and tear to components, and provide a smoother, noise-free ride. You can use an old toothbrush for scrubbing the chain, but using a chain-cleaner is less messy and makes the task

a breeze. Finish Line has a good-quality **chain-cleaning kit** that sells for \$30, but Mountain Equipment Co-op sells a model for \$6 which works just fine.

For advanced cleaning, the best technique is to remove the chain and soak it in degreaser for 3-5 minutes. Installing a **magic link** in your chain will allow you to remove the chain (but be careful not to lose the link pieces when you do so). If you don't have a chain tool, you can have the shop install it for you. Magic links can be reused from chain to chain.

Cleaning frequency can be personal and depends on what kind of lube you use, but I find that cleaning and re-lubing the chain every 300-400km works well. However, you should always clean and re-lube your chain if you get caught in a rainstorm.

Cleaning solution

To remove grease from the chain, rims and other components, you'll need **degreaser** (\$15-20). Most degreasers nowadays are biodegradable and non-toxic. I've heard baby oil also works well, but never tried it.

There are a variety of bike frame-specific cleaning solutions on the market, but good old detergent works well. **Bike washing brushes** are handy, but old t-shirts, cut up into rags, are great for wiping away grime. Rinse your bike with water after cleaning.

Lube

After cleaning your chain, you'll need to re-lube it. There is a wide range of **bicycle-specific lubricants** engineered for a variety of conditions, and they generally cost from \$5-\$25 depending on the quality and container size.

A "dry" lube is versatile enough for most conditions, penetrates well and is water-resistant without attracting contaminants. "Wax" lubes are dry, slick and actually lift dirt away from the chain, but tend to wear down quicker so more frequent application is necessary. "Wet" lubes are extremely water-resistant and ideal for touring or mountain-bike riding in off-road and very wet conditions, but are heavier and get messy earlier. A note: never use 3-In-1 Lube on your bike, as its stickiness actually attracts dirt, and is very difficult to remove.

For optimum lubrication, apply oil to your chain 24 hours prior to riding to allow the oil to fully penetrate components, and wipe off excess lube to prevent the gunk building up on your drivetrain.

Gear Checklist Fold it up and put it in your pocket!

Essential gear

- Helmet
- Bike jerseys (2-3)
- Good bike shorts (2-3 pairs)
- Cycling gloves
- Sunglasses
- Rain jacket
- Water bottles (2)
- Portable pump
- Spare tubes
- Tire levers
- Patch kit
- Saddle bag

Bike Maintenance

- Floor pump with gauge
- Chain cleaner
- Degreaser
- Chain cleaning tool
- Multi-tool

Cool/ColdWeather gear

- Full-finger gloves
- Arm warmers and/or long sleeve jersey
- Leg, knee warmers and/or full length tights
- Booties or toe warmers
- Cycling vest
- Cycling jacket
- Headband, skull cap or earwarmers
- Thermal undershirt (base layer)
- Glove liners and/or outer shells
- Lobster mitts

Optional but highly recommended

- Cyclo-computer
- Cycling shoes
- Clipless pedals or cages
- Good saddle
- Quality road tires
- Lights (if riding at after sunset)