

Your Bicycle and You



BICYCLE GEAR

Helmets

It's quite simple. Wear one.

OK, so we'll expand a little on that. Wear one, and wear it correctly. Remember "eyes, ears and mouth."



Eyes: Your helmet should be level on your head, not tilted back. There should just be room for one or two fingers between your eyes and the helmet.



Ears: The straps should form a "V" just beneath your ears.



Mouth: The chin strap should be snug. You should

be able to fit only one or two fingers between the strap and your chin, and when you open your mouth in a big yawn, you should feel the strap tighten.

Helmets come in a variety of types and most are quite easy to adjust. When properly adjusted, the helmet should not come off your head when you lean forward, even without the strap buckled. Your local bike shop will help you if you have trouble getting the fit right. It can be tricky to get the straps adjusted for the first time.

Price does not determine the quality of a helmet. Price is an indicator of how much venting (those holes on top of the helmet) the helmet has. Venting is nice for those who spend a lot of time biking in the hot sun. Remember to take good care of your helmet. Excessive heat can damage the helmet. After each use allow the helmet to air dry and then store in a cool, dry place.

Replace your helmet at least every 3 years and immediately if the helmet is visibly damaged or involved in a crash. (Damage to a helmet is not always visible! Some or all of the helmet's protective capacity is used up when impacted.)

Lights

Headlight: A handlebar mounted light makes you visible to others (it's also required by law when riding in the dark). If you are riding where there aren't street lights (e.g. greenways), you'll need a strong beam.



Rear Reflectors: Get one at least 3 inches wide, and make sure it's pointed straight back, not up or down. Reflectors only work if they are clean, so make sure to wipe yours off occasionally.

Rear Light: A red light is a great supplement to the required rear reflector. Many bicyclists use flashing red lights, even during the day, to increase visibility.

Reflective Tape: For extra safety, use on your bike frame, helmet, backpack, etc.

Locks

One of the most basic pieces of gear for your bike is a good lock. There are a variety of different types of locks; your local bike shop will be glad to help you select one that meets your needs.

Fenders

Even if you don't normally ride in the rain, you never know when it's going to start pouring before your commute home. Fenders make riding on wet streets a much better experience by keeping water and grime from being sprayed onto your legs and back.

Repair Kit

You really only need to bring along what you know how to use. Most bike shops offer on-the-road repair classes so you can learn how to fix a flat and do some basic fixes. Your repair kit should include:

- **Patch Kit** and/or **Extra Tube**
- **Tire Lever**
- **Air Pump** and/or a **CO₂ System**
- **Mini Tool** with a **Chain Tool**
- **Mini First Aid Kit**



Clothing

Your clothing should be comfortable and not get caught in your bike. For short commutes, regular clothing can be just fine. Just be sure to strap your right pants leg to keep it from getting caught by the chain or get a chain guard for your bike.

For longer commutes, many prefer to wear cycling clothing, such as jerseys and cycling shorts. Experiment with what works for you, and invest in a few quality pieces. The right clothing can provide you with added visibility during dark or low light conditions. You can buy clothing with reflective panels and/or piping or add reflective tape to existing items. Reflective clothing is not a substitute for bicycle lighting equipment.



Rain Gear: Water-resistant and waterproof clothing specific to cycling can make year-round riding a breeze. A good rain jacket with a longer flap in the back is a good start. You can also buy rain pants, waterproof gloves, helmet covers and shoe covers. Another option is a rain cape, which is open on the bottom to allow air flow, so you don't get overheated. (Fenders are a must with this option!)

WET WEATHER TIPS

- When parking outside in wet weather, carry a plastic bag to cover your bicycle seat.
- You can also use plastic bags to keep you feet dry. All you need to attach them is rubber bands!
- Keep a pair of socks and shoes at your work place. If your feet get wet during the ride, they can soon be warm and dry.

Layering: Layering can be the key to staying comfortable when riding in the wet and/or cold. Multiple layers can be a low-cost alternative to performance clothing. In addition, a layer can easily be added or removed to improve comfort on the fly. Try a base layer that breathes, another layer that provides warmth, and an outer layer that keeps out the wind and rain.

Leg Bands/Ankle Straps: Leg bands are a cheap and easy way to keep your clothes free of chain grease.

Shoes: Generally, any shoe will do. Choose something casual and comfortable with a good traction sole. Toe clips (cages attached to the pedals that your foot slips into) can be added for better pedaling efficiency. A more technical alternative is a pair of clipless pedals that require cleated shoes.

Gloves: Wearing gloves serves two purposes: they can protect your hands from the elements and can prevent aches and pains in your hands and wrists. Use full-fingered gloves in cooler weather and half-fingered gloves in warmer weather.



This information is brought to you by the Knoxville Regional Bicycle Program, which strives to integrate bicycling into the transportation system. The program works with citizens and governments within Knox, Blount, Anderson, Roane, Sevier and Loudon counties to implement the 2009 Regional Bicycle Plan. The program is housed within the Knoxville Regional Transportation Planning Organization (TPO) and staffed by a Bicycle Coordinator. In addition to managing the Bicycle Program, the coordinator assists the Bicycle Advisory Committee, oversees the Bicycle Plan implementation, and reviews road plans to ensure compliance with the accommodation policy.

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What Tennessee bicycle law requires

Helmet

A helmet is mandatory for everyone under the age of 16 years.

Lights

Required lighting equipment for use at night:
 • A front white light visible from at least 500 feet
 • A red rear reflector or light visible from 500 feet

CHOOSING A BICYCLE

It's not a one-type-fits-all world. Mountain bikes, hybrids and comfort bikes with upright handlebars and wider tires are well suited to shorter trips on city streets, while road bikes with drop handlebars and narrower tires may be a better choice for longer commutes. Then, of course, there are recumbent bikes, folding bikes, tandems, and fixies. Curious about the possibilities? Visit a local bike shop or two, they'll be glad to help you find the perfect bike for you.

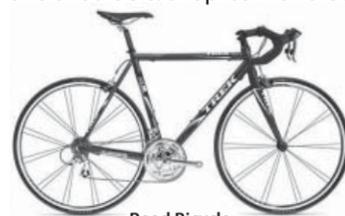
One type of bicycle can potentially be used for various types of biking. **One of the biggest factors is the kind of tires.** The smooth, thin tires found on many road bikes won't last long off of the pavement.

However, many recreational and mountain bikes have tires that can handle both paved and unpaved surfaces. It's also possible to switch out smooth tires for knobby tires on many bikes.



City Bicycle

Another thing to think about is handlebar type. Flat-bar handlebars let you sit up in a higher and more relaxed position so you can better see the road and potential hazards. This upright position also reduces strain on your hands, wrists and shoulders. Drop-bar handlebars are lightweight and



Road Bicycle

aerodynamic. They are a better choice if you're planning to race or just go fast. They also allow for a greater number of riding and hand positions than flat-bars, which is good for long distances. The

downside is that they put you in lower, more hunched over position that may put more strain on your back.

Bike Fit

Making sure your bike fits you correctly can be crucial to the enjoyment of bicycling. Your local bike shop will help you adjust your bike so it's set up for maximum comfort, but here are some guidelines:

Frame Size

Bicycles come in a variety of frame sizes and styles. One model of bike might have two or three frame sizes meant to fit different sizes of riders. Try different options to see which feels right to you.

When you are sitting on the bike, and the pedal is at the lowest position, is your leg completely extended? You should be able to touch the ground with the tips of your toes when you're sitting on the seat. If you pedal the bike and your knees are parallel to the ground at the highest point, this bike is too small. If you can't touch the floor when you're sitting on the seat, the frame is too big.

Bicycle Frame Size	Height of Individual
16" (40 cm)	5' to 5'8"
18" (45 cm)	5'7" to 6'1"
20" or 21" (50-53 cm)	6' and up

NOTE: Frame measurements are not to be confused with the wheel sizes. Wheel sizes can come in 16", 18", 20" (most BMX's), 24", 26" (the standard wheel size in the U.S.), and 700C/27" (often found on racing bikes and European models.) The wheel measurements are independent of the frame size; when a bike is labeled as an 18" bike, the measurement is referring to the frame size specifically.

Stand astride the bicycle.

- For on-road riding there should be about 1 to 2 inches between the top bar of the bike frame and your inseam.
- For off-road riding, there should be about 3 to 4 inches between the top bar of the bike frame and your inseam.

Level and center the seat.

A level seat supports your weight and makes it easier to move around on the seat when necessary. It's logical to think that tilting the seat down will ease pressure on sensitive areas. But, when you do this, it causes you to slide forward when riding, which puts extra pressure on your arms. If you experience discomfort, tip the front of the seat slightly (no more than 3 degrees) up or down. Women typically tip it down; men tip it up.

Adjust seat height.

With your pedal at the bottom of the pedal stroke and your heel on the pedal, your leg should be completely straight (then your leg will be slightly bent when riding normally). Your hips should not rock when you're pedaling.

Adjust seat position.

For starters, put the saddle in the forward-most position that allows you to lift your hands off of the handlebar and maintain the torso position without strain. You should not feel like you're about to fall forward when you lift off the handlebar. If it makes no difference to your back muscles whether you have your hands on the bars or not, you know that you aren't using your arms to support your upper body. If you are, your arms and shoulders will surely get tired on a long ride.

Adjust handlebar position.

You can raise or lower the bars to make your ride more comfortable. You can experiment on your own, or go to a bike shop to get their help. The handlebars can also be rotated a little up or down to affect the angle at which you hold them. This can take some of the stress off of your wrists and shoulders.

WHERE SHOULD YOU BUY YOUR BICYCLE?

Check out one of the many local bicycle shops or find used bikes on craigslist and other private party sources, and at some bike shops. If you get a used bike somewhere other than a bike shop, you may also want to find a friend with some bike experience to inspect it before you buy, or have it checked over at a bike shop.

What about big box retailer versus bicycle shop? In general, we recommend bike shop brands because they are higher quality and will last longer with less maintenance. But if you just want a bike to use for a couple of years while you're in college or to tool around on occasionally, a department store bike may suit you fine. So that you can judge for yourself, here are the things that make a local bicycle shop different:

TEST RIDES

Bike shops offer many different styles and types of bicycles and allow you to test ride them to see which one works best for you.

TRAINED EMPLOYEES

Bike shop staff can help you decide what kind of bike is best for your needs, fit the bike for you, and even teach you how to fix a flat.

ASSEMBLY

Bike store bikes are assembled by trained professionals who know what they're doing. Big box bikes are put together by someone who has no professional training. If you're getting a big box bike you'll want to get it checked out by a professional to make sure it was assembled correctly.

COMPONENTS

The brakes and derailleurs (gear-shifters) are generally lower quality on big box bikes and may need to be replaced sooner.

MAINTENANCE

All new bikes need re-adjustment of gears, brakes, etc. after an initial 15 to 30 hours of use to operate properly and last. Bike shops offer this, almost always for free, while big box stores do not offer maintenance or repair.

Note: For a listing of bicycle shops see our brochure Local Bicycle Resources or go to www.knoxtrans.org

INSPECTING YOUR BICYCLE

A regular safety check of your bike only takes a few minutes.

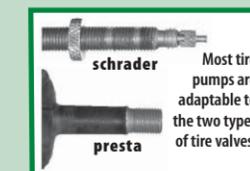


BRAKES: While standing next to your bike, push your bike forward while squeezing each brake lever individually to be sure they are capable of locking up the wheel. Inspect pads for wear; replace

if there is less than 1/4" of pad left. Check brake lever; there should be at least 1" between bar and lever when squeezed.



WHEELS: Wheel nuts and quick release levers need to be tight, and the wheel should not wobble. Check for loose or broken spokes. Lift each end of your bike, spin the wheel to ensure your brakes do not rub the tire or dive into spokes.



TIRES: Check your tires for the manufacturer's recommendations on air pressure. Use a pressure gauge and a hand pump to inflate. Check for damage to tire tread and sidewall; replace if damaged.

HANDLEBARS: Make sure your handlebars don't move side-to-side when you are holding the front tire still.

PEDALS AND CRANKS: Your pedals should be securely attached to the crank arms. Check for loose bearings by trying to wobble a crank arm side-to-side.

GEARS: Gear cables should slide easily and should not be frayed or rusty.

CHAIN: Lubricate your chain regularly, especially if you have been riding on wet streets or in the rain. Check your chain for wear. If your chain skips on your cassette, you might need a new one or just an adjustment.

REFLECTORS AND LIGHTS: Ensure that all reflectors are clean and properly aligned.

BEFORE A LONG RIDE: Take a quick ride to check if derailleurs and brakes are working properly. Inspect your bike for loose or broken parts, and tighten, replace or fix them. Pay extra attention to your bike during the first few miles of the ride.

ONCE A YEAR: Take your bike to a shop for routine maintenance.

Do the ABC QUICK CHECK

Air – Is tire inflation okay?
Brakes – Working well? Stopping you quickly?
Chain and Cranks – Pedaling smoothly? No squeaking?
QUICK Releases – Closed and tight?
CHECK – Anything loose or rattling on the bike?
 A quiet bike is a good bike!

The right size bicycle for a child

From bikes with training wheels to teen-sized versions of adult bikes, there are many options available for kids. The most important consideration when buying your child a bicycle is size. **Children's bikes are measured by wheel size, not frame size.** The most common wheel sizes are 16", 20" and 24". The right size is one where the child can comfortably get on the bike and stand with his or her feet on the ground. Here's a guide.

Age	Child's Height	Wheel Size
2 - 5 years	26 - 34 inches	12 inches
4 - 8 years	34 - 42 inches	16 inches
6 - 9 years	42 - 48 inches	18 inches
8 - 12 years	48 - 56 inches	20 inches
Youth	56 - 62 inches	24 inches

Beware of buying a bike that is too large for a child.

A properly sized bike will be easier for your child

to handle, less dangerous and a lot more fun.

