GET RIDING
A Beginner’s Guide to Cycling
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The Call of the Open Road

There are many reasons to start cycling, but usually it comes down to something that’s drawing you to it. It could be that you’d like to regain some of the wonder of childhood in a more grown-up way. Maybe you get a jealous twinge hearing about your brother-in-law’s epic weekend rides. Sometimes it’s the sit-down, dead-serious talk your doctor gives you about your health that’s making you see the potential of pavement for the first time.

In reality, it doesn’t matter what called you here, only that you’ve decided to heed it. Welcome. You’re in for a fun ride.

WHY RIDE?

Simplicity in Action

The simple motion of cycling has a funny way of making things clearer, less cluttered, a little slower, and a bit more real. Whether you’re speeding toward a finish line or cruising on a weeklong bike tour, it connects you to the present moment—the here and now—in a way that most things in our fast-paced, high-tech world can’t. It helps bring awareness of the small things—the temperature of the air, the subtle changes in terrain—making real connections to the world around you.

Freedom

Cycling is a means to an end. It’s one way you can ride away from the phone, the house, the bills, the TV, what’s going on at work, how the kids are driving you bonkers. Getting on the bike is the antidote. It’s a mini vacation for your soul. It’s a time to revamp and breathe—even if it’s just for an hour at a time.

Confidence

Confidence is a funny thing. Almost like a virus, it can affect your whole life, your well-being, and even those around you. Right now you may see yourself as someone who just wants to get in better shape. It’s likely you’ll get there before you know it, and when you see how easy it is to reach one goal, it will be easier to set and accomplish another—one that may not even be on the bike.

Health

Health benefits seem like a no-brainer. You’re going to get fit, right? Maybe lose a few pounds while you’re at it? Whereas before you ate because it was time to eat, now you might find yourself eating to fuel your rides. As you slim down, your speed and self-esteem will go up.
Of course, for most cyclists, cycling is also a great excuse to enjoy favorite treats. And whether that means beer or chocolate chip cookies, you can reward yourself for a job well done.

Even if you don’t shed that many pounds, you’ll still be getting big payouts. The cardiovascular workout that cycling provides can not only help control diabetes, prevent heart disease, lower your blood pressure, and put you at lower risk for cancer but also increase your overall muscle strength and endurance so you can do more of the other things you already love—and they’ll likely get easier.

**Brainpower**

Some studies have shown that vigorous exercise can help alleviate depression, anxiety, and even attention deficit disorder—and sometimes prevent them from happening in the first place.

Here’s how it works: As you increase fitness, the part of your brain that controls long-term and spatial memory consequently grows as well. In older adults, exercise can stave off Alzheimer’s disease. Because cycling requires balance, instantaneous decision-making skills, and quick reaction time, you’ll be better at solving puzzles (including those stubborn life problems that always seem to be creeping up).

Whether you see yourself as a recreational rider or use the bike to improve your fitness, you need a bike that matches your needs. Here’s what you need to know.

**A BIKE’S ANATOMY**

**Frame & Fork**

The frame consists of four main tubes and two sets of smaller tubes that make up two triangles.

The top, seat, head, and down tubes make up the front triangle. The stiffness of these tubes makes your bike stable and helps support the weight of your body. The two triangles are put together at the factory, then the rest of the parts are added to it.

The fork, which looks like a musical tuning fork, is separate from the frame but is designed to work specifically with the frame. Some forks can be swapped out for aftermarket upgrades, but it’s pretty unusual if you’re buying a bike directly from a shop.
Diagram of a Road Bicycle

- Saddle
- Stem
- Handlebar
- Brake Lever
- Shift Lever
- Head Tube
- Top Tube
- Down Tube
- Front Brake
- Fork
- Hub
- Spokes
- Rim
- Cassette
- Front Derailleur
- Chainring
- Rear Derailleur
- Chain
- Front Brake
- Seat Post
- Seat Tube
- Seat Stays
- Rear Brake
- Top Tube
- Down Tube
- Chain Stays
- Crank
- Rear Derailleur
- Tire
- Fork
**Wheels**

The wheels consist of three main parts: the rim, the spokes, and the hub (the center of the wheel that spins). The wheels are both your support system and suspension, which makes them one of the hardest-working parts of your bike.

**Quick Release Skewers**

The quick release (QR) skewers are what fasten your wheels to the frame. They are designed to make it easy to get the wheel on and off—for storing or transporting the bike or for changing a flat. They're simple to use once you know how to use them correctly. If you're not absolutely sure you know how they work, the bike shop will be happy to take a few minutes to show you; then go home and practice a few times so you cement the process in your brain. If you use them incorrectly, you can damage your hub (making it much harder to pedal) or your wheel can come loose while riding.

**Tires**

Tires come with the package when you buy the bike, and their width, durability, and ride quality vary as much as the wheels. The width of the tire is directly connected to its use. Narrower tires are usually found on racing or fitness bikes and wider tires on commuter or touring bikes. Tires are the component most likely to be skimped on when bike manufacturers are putting together the complete package, so they're something you might upgrade right after you get your bike.

**Tubes**

Tubes are found inside the tires and are what actually hold the air to make the tire fill up. Tubes are mainly made in one big factory in Taiwan, so their quality is fairly comparable across the board. For road bikes, the valve stems (where you put the air in) are usually Presta valves. These valves look skinny and have a tiny nubbin at the top that can be unscrewed to let air in or out. If you've never used them, ask your shop for a quick lesson before you walk out the door.
**Saddle**

Your saddle (also called a seat) helps cushion you from the road and supports your body weight so you can transition power to the pedals.

**Seatpost**

Beneath your saddle is the seatpost, which attaches the saddle to the frame and is adjustable for height. This allows a generic bike size to be somewhat tailored to your body.

**Handlebars**

Under your hands reside the handlebars. Their depth and width adjust with the frame size, so a smaller frame will have narrower, shallower bars than a larger one. This is the key to a comfortable ride. Not only do the handlebars support you but, in conjunction with the bar tape wrapped around them, they cushion your upper body from fatiguing road vibration.

**CHOOSING YOUR RIDE**

Before you head to the bike shop, answer these questions.

**Where do you want to ride?**

Depending on your goals, you may be aiming for bike paths and quiet country roads or into the peloton of your first race. This can affect positioning, materials, and the number and types of gears you’ll want.

**What kind of position are you most comfortable sitting in?**

Depending on your body’s limitations (proportion, previous injuries, etc.), certain bikes may keep you from experiencing pain while riding. For example, riders with back injuries sometimes gravitate toward recumbents or more upright road bikes.

**How far and fast do you want to go?**

Road bikes vary greatly, and today the industry offers bikes that specialize in long endurance hours in the saddle and others that are made for sprinting, climbing, and descending fast.

**What are my goals?**

How much you ride now and how much you hope to ride in the future can change. Be sure to buy a bike that can grow with any of your fitness goals.

**What kinds of weather will you ride in?**

Many road bikes are not able to fit full fenders or accommodate wider tires that can offer better traction if you plan to ride outdoors year-round and live in a region with inclement weather.

**What do you want to be able to carry?**

There’s a huge difference between the ultralight road machine and the hefty touring bike that is built to carry your entire life for weeks on end.

**What kind of frame material do you want?**

Often, what you’ll end up with will be dictated primarily by cost but also by what kind of riding you want to do, which will determine how durable your bike should be. Check out the chart on the next page to see the differences in frame materials that are out there.
## Frame Material Showdown

<table>
<thead>
<tr>
<th>Material</th>
<th>Cost</th>
<th>Durability</th>
<th>Ride Quality</th>
<th>Stiffness</th>
<th>Which Riders Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>Inexpensive</td>
<td>✷ Doesn't rust</td>
<td>✷ Responsive to power output</td>
<td>High</td>
<td>✷ Entry-level recreational or fitness riders who want an inexpensive but somewhat lightweight bike</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Highly resistant to failure from dings or falls</td>
<td>✷ Harsher road feel can tire out the rider</td>
<td></td>
<td>✷ Riders who need a bike for inclement weather</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ In old age, higher rate of frame failure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Not easily repaired</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carbon</td>
<td>Expensive</td>
<td>✷ Doesn't rust</td>
<td>✷ Responsive to power output</td>
<td>High (depending on weave)</td>
<td>✷ Riders under 200 pounds who want a lightweight racing or fitness machine and have a budget over $2,000 Note: Touring, long-distance, and all-rounder road bikes are beginning to be made in carbon, but these are in their infancy.</td>
</tr>
<tr>
<td>Fiber</td>
<td></td>
<td>✷ Very, very strong</td>
<td>✷ Smooth under vibration</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Not as resistant to scratches</td>
<td>✷ Feels like the rider is “floating,” because the road vibration is so deadened</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Easily repaired (but may require shipping to a facility that can repair it)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steel</td>
<td>Varies widely</td>
<td>✷ Very durable</td>
<td>✷ Smooth and springy</td>
<td>Increases with density—stiffer frames are often heavier</td>
<td>✷ Touring and long-distance endurance riders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Easily repaired</td>
<td>✷ Gives feedback from the road, making the bike gently spring back from bumps and adding to the rider’s awareness of small changes in riding surface</td>
<td></td>
<td>✷ Entry-level riders who want an inexpensive but comfortable bike</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Prone to rust</td>
<td>✷ Less responsive (the elasticity absorbs effort before it gets to the pedals)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Titanium</td>
<td>Expensive</td>
<td>✷ Doesn’t rust</td>
<td>✷ Springy, lively, responsive</td>
<td>Lowest of all materials—some manufacturers increase stiffness by shaping the tubing</td>
<td>✷ Riders who want a lightweight ride with a very responsive road feel and have a budget over $2,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Extremely durable</td>
<td>✷ Gives feedback from the road</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>✷ Very difficult to repair</td>
<td>✷ Less responsive (the elasticity absorbs effort before it gets to the pedals)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TIME TO SHOP

Bike shop employees are trained to help you find the right size and make recommendations. A well-trained staff will help form a relationship for the long term. This doesn't mean you should buy the first bike you ride—in fact, you'll want to test-ride a few.

Each shop tends to carry a few specific brands. To explore a variety of rides, make sure to visit more than one shop. When you walk in the door, you should be greeted and treated respectfully. There is no excuse for a shop that doesn't seem interested in taking your money, and luckily for you, there are lots of bike shops out there.

Your salesperson should ask some of the same questions you answered earlier (pages 12 and 13). If not, use your answers as a guide to let them know what you're looking for. They'll likely make some suggestions based on what you tell them, then may ask you to sit on the bike while it's stabilized in a bike trainer to make sure it's close to the proper fit. Don't discount a bike on color or style. If it fits you well, give it a spin before writing it off completely. You might find the two of you have a lot in common.

Is That a Good Brand?

As long as you avoid department store bikes and go to a brick-and-mortar bicycle shop, the brands will be reliable. If you're unsure, ask about the warranty that comes with it. Good brands offer good warranties.

Make your choice by your goals, needs, and budget. Bikes in a similar price range come with similar quality parts, but each brand will change your body position slightly. Sometimes the bike size that works for you will change from one brand to another. Sound a little bit like jeans or shoe shopping? Yep.

That is why test-riding multiple bikes is the key to finding your dream ride.

The Test Ride

When you come to test-ride, wear comfortable clothing that you can move around in. If possible, bring bike shorts—that's the best way to know how the bike will feel when you're riding it.

Before you hit the pavement, make sure you understand how the bike shifts and brakes. Different brands of components shift differently. A good shop will offer to show you how the shifters work in the store with the bike in a trainer. This way, you can concentrate on your ride rather than on how to make the bike work.

Plan on taking at least 15 to 30 minutes riding on the road for each bike. It takes close to that long to get a true feel for whether your body (arms, legs, back, etc.) is getting sore anywhere. Yes, that means you could be in each shop for 2 to 3 hours, so this process may take more than a day.

If this is your first road bike experience, you may think the salesperson has set up the bike for you. Then you ride and all your weight seems to be pressing into the saddle. Chances are the seat height is wrong. You may feel stretched out like Superman and can't reach the handlebars. Don't waste time on your full test ride if in the first few minutes it feels awful. Turn around and see if there is a simple adjustment the salesperson can make. That may work, or it may be the wrong fit. Don't discount what you feel just because you're a “newbie.” If it feels wrong, it likely is wrong. If it's wrong, you won't want to ride it, so don't buy it.
The Bike Fit

Second to your athletic condition, how your bike fits your body is the most important aspect of riding.

Bikes come in different sizes, which are intended as a guide. Brand to brand, the same size bike changes slightly in length and geometry, which is why test-riding to find the best brand for yourself is so important. Even a bike that's the right size may need to be adjusted to your body to fit properly for the most efficient and comfortable riding. Since all bodies—including their limitations and history of injuries—are different, it stands to reason that fit will vary quite a bit from rider to rider.

The two most important aspects of bike fit are seat height and reach. When you're shopping for a bike and sit on it for the first time, these are the two indicators that the size is correct.

The seat should be high enough that you have a very slight bend in your knee when your foot is at the very bottom of the pedal stroke. This gives you the most power with the least chance of injury.

Your reach should be so that your arms and torso make a 45-degree angle over the bike. Too long and it will be hard to reach the handlebars; too short and your knees will be too close to your arms and your back will arch.

The fit that you get when you buy your bike is not the same as a professional bike fit. A professional fit can take up to 2 hours to do correctly. It's a good idea to put some miles on your bike before you make your appointment for a professional fit at your bike shop. Riding at least 150 to 200 miles will let you know where your body isn't feeling its best, find out if the saddle is working for your butt, and gain some muscle memory to use for comparison after your fit.
Dress for Success

Think you don't need special clothing to ride? You're (mostly) right. With the exception of always wearing a helmet, you really can ride in anything. However, technical bicycle clothing helps keep you safe, comfortable, and faster on the road. Bike clothing designers have spent many years tweaking and refining these products, and they've come a long way.

Most bicycle clothing is made from materials that are made to dry quickly and wick perspiration away from your skin. This is extremely important because as you're riding, any moisture in your clothing can cause chafing and irritation—not to mention that riding around in damp clothing makes you clammy and leaves you smelling not so fresh.

The two most common fabrics are high-tech polyester mixes and merino wool. Both materials wick sweat and dry quickly, but the high-tech poly mixes are more common and affordable.

The Jersey

This is your bike shirt. It comes in short-sleeved, long-sleeved (for winter), and ladies’ sleeveless variations (for summer). From the front, it looks like a regular tight shirt, but it is actually a well-thought-out piece of clothing that is defined by a few key design components. Jerseys are intended to be worn snugly to help keep you aerodynamic. How sleek you are may not seem like a big deal at first, but it makes a huge difference in how much effort you'll need to put out while riding. So while you may be tempted to wear something a little less form-fitting, consider that doing so will make your ride a little tougher.

Bike Shorts and Chamois

Bike shorts are made of the “slimming” Lycra that most people envision when they think of cyclists. Though commonly referred to as shorts, they also come in three-quarter-length and full-length versions (usually referred to as tights) for cooler-weather riding.

The shorts are usually made of multiple panels of material to help create the most smooth, snug, and comfortable fit. When you're shopping, the higher the panel count, the more expensive and well-fitting the shorts usually are.
Gloves

If you’re experiencing numbness and tingling in your hands, you might want to try out some new gloves. Not only will the padding inside improve your comfort, but it’ll also protect your palms in the event of a crash.

Shoes and Socks

There’s a fine line between having a shoe that’s stiff and snug enough to transfer power and one that feels like it’s squashing your feet. You want shoes to fit snugly but still be able to accommodate puffy feet at the end of a long ride. Here are tips to help.

**Buy shoes after work.** Your feet can swell up to a full size on a hot day, so do your shopping as late in the day as possible.

**Bring your cycling socks.** And if you wear orthotics when you ride, don’t forget to bring them to the shop, too.

**Stand, then sit.** While cycling is generally a low-impact sport, there are situations—like when you’re cranking up that monster climb—where you put a fair amount of weight on your feet. So when you try on shoes, stand up while you’re tightening the straps and buckles. Then you can sit down and relax as the upper begins to conform to your foot (keep reading for more about evaluating fit).

**Start with the piggies.** The first strap you tighten should be the one that’s closest to your toes. Proceed back toward your ankle.

**Consider all dimensions.** There’s more to evaluating fit than seeing how far your toe is from the end of the shoe. Also look at the parallel edges of the upper that meet on the top of the foot. Make sure they’re not puckering at the pivot points (which means you need less volume) or bulging outward (which means you need more volume). Run your thumb and finger along the side of the toe box—if there’s enough material to grab, the shoe is too wide.

**Don’t be afraid to cross-dress.** Most brands make shoes for men and women, but the best shoe for you might not be the one that matches your gender. For example, men who have problems with heel slip might want to consider a women’s shoe.
Try and try again. Even if you think a shoe fits, try on the sizes above and below to make sure. After all, good-quality cycling shoes don’t wear out quickly, so you want to make sure the fit is as perfect as it can be before plunking down your plastic.

Cycling-specific socks are made of special wicking fibers and are designed to give support in the arch, provide padding where you need it, and not bunch up or rub. Of course, there are varying lengths to choose from, but the height of the cuff has little to do with functionality and everything to do with fashion. From preventing tan lines to the current trend in cycling sock fashion, your choice of sock length is highly personal.

Helmets

Technically, helmets make everyone look slightly insectlike. It’s true. However, a helmet is the most important and valuable item you’ll put on to ride a bike. Riders shouldn’t saddle up without reaching for their helmets first. There is never a reason to go for a ride—even a quick jaunt to the coffee shop or park—without a helmet on. Of all the parts of your body that can break, your brain is the most valuable and least repairable.

It’s important for the helmet to fit properly. It should feel snug, like a baseball cap. If it feels loose or tight in the proper size, try a different brand.

WHEN TO REPLACE YOUR HELMET

▶ If you fall
▶ If you drop it regularly
▶ If the outer shell is compromised by dents or cracks
▶ Every 2 to 3 years. UV rays from the sun and age deteriorate the integrity of the helmet. Even if you keep them in the closet, replace helmets that are older than 3 years.

Road-Riding Skills

You’ve got your bicycle, you’ve got the gear, so you’re ready to roll, right? Well…maybe. You’ll want to get to know your body’s strengths, weaknesses, and preferences to use all of them to your advantage. Being relaxed on the bike is an essential component of riding well.

THE BEGINNING POSITIONS

Although gravity may be your foe, your bicycle is not. Its spinning wheels naturally create a gyroscopic effect due to their centrifugal force. This effect makes it extremely difficult to tip over while in motion. So the first key to balance is having enough momentum to keep upright. As long as you’re moving around 5 to 6 miles per hour (which is a very average walking pace), your bike will keep moving forward, usually in a straight line.

When it comes to balance, three is a magic number for points of contact with the bike. Your body contacts the bike at the handlebars, the seat, and the pedals. Of these, the handlebars and pedals are the most important parts for staying balanced and in control of your bike—which is why it’s easier to stand up and pedal than to ride with no hands. Your handlebars are a no-brainer because they obviously are used to steer. The body weight resting on your pedals through your feet is just as
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Riding in the drops makes it slightly harder to shift but brings huge gains in braking ability—especially helpful on extended downhills—because you have a closer reach to the brake lever for both a quicker reaction time and the leverage to make a more powerful stop. This seems as if it would increase the pressure on your hands; it does, but at the same time you'll also be taking most of your weight into your feet because you're coasting downhill.

Neutral Position
This is where the bike is designed to be ridden most of the time—on flat or gently rolling ground. Your hand position will generally be on top of the hoods, where you have access to the brakes and shifters. You should be able to freely turn your head and neck to look around, should not have too much pressure on your hands, and should feel comfortable sitting for extended periods of time. If you're riding for long stretches where you don't foresee shifting or stopping (and you're confident you can move your hands quickly to the hoods to access the brake levers in an emergency), you can also switch your hands to the top of the bars, closer to your body. This will allow you to take some weight off them and change your back and neck position slightly.

Keep your bottom square on the saddle when riding in neutral. If you took a snapshot of your body from the side while riding, your torso and arms should make an almost perfect 45-degree angle. As mentioned before, your feet should be taking a good portion of your body weight into the pedals, so your saddle isn't overloaded.

Your spine should be straight, keeping your back, neck, and head in alignment. Keep your shoulders broad and away from your ears and your chest forward. This allows your airway to remain open and makes it easier to breathe. Good posture will also prevent the cyclist “hunch” that plagues riders, causing neck, shoulder, and back pain. If you feel as if you can’t easily do this without straining, the bike may need a professional fitting.

Dropped Position
When you need to lower your torso or center of gravity, the C-shaped lower portion of your handlebars—called the drops—is there for you. This position is most often used when descending, especially down long, steep inclines. Your torso will be bent more forward from the hips and your wrists will torque up a bit so you can readily reach the brake levers.

Be zen
Staying relaxed is the key to hours of enjoyable, safe riding. Strangely enough, this starts in your diaphragm. Make sure you're taking full, deep, steady breaths — especially if you're in a situation that makes you feel nervous or excited. The more you clench up, the faster you'll lose control. Also practice letting go of tension in your arms, shoulders, and neck. Keep all of your joints soft and slightly bent. The more rubbery and loose they are, the quicker they'll be able to respond to changes in the road and the less fatigued you'll become. Staying relaxed saves energy and keeps you in the best control possible.

When you shift to this position for descending, you'll also make a slight shift of your weight back off your seat. Note that while you're taking your bottom off the saddle, you're not raising it up much but bringing it backward toward the rear wheel to give yourself more traction. Your body will naturally shift forward on downhills, and this position allows you to push the weight back a bit to counterbalance.

By bringing your hands lower on the bars, your torso also shifts closer to the ground. This is good, because a lower center of gravity
Good posture will also prevent the cyclist “hunch” that plagues riders, causing neck, shoulder, and back pain.

will make it much easier to balance and stay in control. If you try to remain in neutral position on steep descents, it will be harder to brake, and your high center of gravity will make you feel wobbly and less stable. Again, your spine should be as straight as possible.

This same principle is applied to cornering. The shift in weight distribution helps you stay stable and in good contact with the ground.

Because riding in the drops is so much more aerodynamic, it is also a great choice for battling headwinds. Taking your torso and face out of the wind can add a few miles per hour to your speed.

Standing Position
Standing on the pedals calls for using yet another muscle group, so most riders find it difficult to do for longer than 30-second to 1-minute intervals before their legs fatigue too much to continue. Most often, cyclists stand on the pedals to climb but also use the move to give their other muscles and soft tissues a break.

To stand, place your hands on the hoods in your neutral riding position. As you rise, your weight will naturally shift a bit forward, which will cause your bike to lurch. Keep your arms relaxed so you can easily make this transition without swerving the handlebars. Also note that for a split second your speed will slow during this transition. If another rider is close behind you, give them a little warning first.

With your torso slightly bent forward, keep your hips (which essentially are your center of gravity) still, mostly centered above and just in front of the nose of the saddle. It should almost look like you’re on an elliptical machine—your legs doing almost all the movement with very still hips, arms, and torso. You may use your arms for some side-to-side torque, but the movement is happening in the bike, not in your body. Though the bike may be tilting from one side to the other, it should still be traveling in a perfectly straight line. This is how you conserve the most energy.

RIDING LIKE A PRO
At its most basic, the bike is designed to do two things: go and stop. One will get you rolling, the other will save your life. Both are pretty important for having a good time on the road. There are many little pieces involved in getting going, staying rolling, and using your bike to the best of your body’s ability.

Getting on the Bike
Most of us have one foot that is dominant. We’ll call this the power leg. It often will follow your handedness. The other is your helper, the balance leg. Although it has less power, it has the more important job: to keep you stable when you’re stopped on the bike. To figure out which is which, balance on each leg while holding the other off the ground. Generally, your dominant side will not be as stable as your balance side.

To mount, grab the hoods of the handlebars and hold the brakes. This will keep the bike stable while you move around on it. Stand on your balance side about a foot away from the bicycle with your body facing forward. Lean the bike toward you (which will naturally lower the seat) and swing your power leg over the back end of the saddle from the rear of the bike, landing your dominant foot on the opposite side pedal. You should end up with your power foot solidly on the pedal (if you’re riding clipless, you should be clipped into the pedal) with the saddle resting
against the inner thigh of your balance leg, continuing to hold a firm grip on the brakes. You’re almost ready to roll.

The easiest way for the bike to stabilize is when it is rolling forward at 5 to 6 miles per hour (walking pace). The quickest way to get it in motion is to put force into the pedal—and there you are with your dominant foot on the pedal, ready to go. You’ll want your first pedal stroke to be as solid and strong as possible, so spin your dominant foot’s pedal into a high, forward position (around 2 o’clock) so you’ll be ready to push down. No matter where you stop, this is the easiest way to get started again with the least wobbling.

**Holding Your Line**

Holding your line is cycling’s way of saying “Don’t swerve around.” You want to be as predictable and in control as possible for the drivers and other cyclists around you.

Stay as relaxed as possible. Most of the time you should be looking up and ahead, at least 20 feet in front of you. A general rule behind the physics of cycling is that your bike will go where you look. Want to avoid that stick in your path or that pothole? Look past it and you’ll steer around it instead of at it.

That being said, the ability to look around you—particularly to check over your left shoulder for traffic approaching from behind—without weaving the bike is a critical riding skill. Even if you use a mirror, you can’t depend on it completely to let you know what’s going on behind you. Practice turning your head while continuing to ride in a straight line. Don’t hit the road for your first extended ride until you have thoroughly mastered this technique.

When you think you’ve mastered all these, practice them as slowly as possible. Because momentum keeps you upright and stable, the less speed you have, the harder it will be to ride in a straight line. The most skilled cyclist can look around, take one hand off the bars, stand up on the pedals, and more while holding the line at very low speeds. Practicing this can get you from novice to expert in no time.

**Stopping**

Just hit the brakes, right? Well, mostly. Most new riders think that brakes keep a bike in control—and while brakes do help, like most things in life, too much of a good thing can be bad for you. When you start riding, you might be tempted to either not go too fast (riding the brakes all the time) or, when confronted with a stressful scenario, slam on the brakes. Again, you need momentum for the bike to be balanced, so neither choice is great if you want to stay upright. Using too much of the brakes can actually make you fall, so when it comes to brakes, temperance is your friend.

As you brake, your momentum forces most of your weight over the front wheel, making your front brake the more powerful of the two. However, if you use only the front, it can lock up and flip you over the handlebars. Your rear brake is strong, too, but it will never work very effectively because as you slow and your weight shifts forward, it causes the rear wheel to drag, creating a skid that can make you fishtail all over the road. Fun as a kid, but not so much in traffic.

Since the front brake has about 70% of your stopping power but can send you flying, and the rear brake will make your tire drag and lose traction, the best solution is to use both brakes evenly. This technique
makes them temper each other like two best buddies, bringing out their most powerful stopping power and your smoothest, safest braking.

As your weight is being thrown forward, it's good to push your body back a bit on the saddle as you slow down—and even farther in an emergency stop. It will not only keep you from going over the bars but also help keep your rear wheel in traction and prevent skidding. As with a fire drill, you want to practice sudden, hard emergency braking so it will become an automatic response in a high-pressure situation.

When the roads are wet, keep in mind that it will take longer to stop. The traction between your pads and rims is greatly decreased because of the water coating them, so if you see a stop coming or are on a descent, apply the brakes lightly early on to clear the water from them, then brake harder. Even grabbing a handful of brake may not be enough to stop in the time you usually would. Plan far in advance for wet stops.

**Getting in Gear**

Your gears are the most misunderstood and underappreciated part of your bicycle. They are your best pal, your dear friend, and your savior on painful climbs and can make you a hero by helping you get the most out of what your body has to give.

Your right shifter lever is in charge of the gears that are attached to your rear wheel. These are the baby steps that will help you make small shifting adjustments. Cyclists use this shifter more often—for example, every time you come to a stop and then as you begin rolling again. Sometimes you'll need a bigger jump in how hard or easy it is to pedal—like when you start to climb a hill. For big changes, you'll use your left shifter, which controls the chainrings (the big gear rings close to the pedals).

In both the front and rear, the cogs that are closest to the inside of your bike (toward the center of the wheel) are easier to pedal. Since their positions are matched, it is easy for you to keep the line of the chain as straight as possible from front to back. The chain doesn't work well and will wear out quickly if you ride it with the gears on a diagonal—called cross-chaining—so you want to avoid being in the hardest gear in front and the easiest in back, or vice versa. If you have only two chainrings up front, this is a combination you won't be able to completely avoid, but if you're on opposite sides of the gearing, that's a good sign when you need to make one of the bigger shifts in the front gears to compensate.

Start by using only the rear shifter until you're totally comfortable and it seems second nature. While practicing with the right-hand shifter, leave
your chain in the middle chainring in the front if you have three rings; or, if you have just two in the front, keep the chain in the innermost (easier) gear.

“Spinning” Your Pedals
Turning your pedals in circles is easy, but spinning them in circles is not. What’s the difference? The pedal makes a 360-degree rotation no matter where you put pressure on it. But making good use of the full 360 degrees is something most of us have to learn how to do. If we look at the pedal stroke as a clock, it’s intuitive to push down from about 2 o’clock to 5 o’clock on the downstroke. This is where you have the most amount of leverage—and, therefore, power.

So why “waste” time and energy with the rest? Why not just use your best leverage? Using the full 12 hours of your pedaling clock shifts the bulk of the effort from your muscles to your heart and lungs. Your cardiovascular system is much more efficient than your muscles, which fill with lactic acid the more they are stressed, causing your muscles to carry less oxygen—this is the “burn” you sometimes feel when exercising—and making it increasingly difficult for them to function properly. Also, utilizing your entire pedal stroke engages a wider variety of muscle groups, further spreading the workload. Once you learn how to take advantage of the full 360 degrees, you’ll be able to pedal faster and smoother and keep your legs from burning out too quickly.

Cadence
This fancy word really just means how fast you rotate the pedals, measured in revolutions per minute (rpm). A huge part of learning how to spin properly is training your body to pedal at a higher cadence.

When we learned to ride a bike for the first time, most likely it was on a single-speed bike. Pushing down hard on the pedals gave us speed and kept us balanced, both of which were pretty swell—especially if we were trying to race our friends around the block.

Unfortunately, the way we learned to cycle as kids is actually very hard on the knees, back, and leg muscles. So while it may have served you well in childhood, it’s time to move on to a more sophisticated technique that will help you take full advantage of your legs, booty, heart, and lungs working together as a team. Though it’s counterintuitive, this mostly involves keeping your feet moving in fast rotations that distribute your power as evenly as possible all the way around the pedal stroke. Usually, this means pedaling much, much lighter and faster than most of us are used to.

When starting to ride, most of us find that 50 to 70 RPM is where we are most comfortable, so your new goal is to keep your cadence between 90 and 110 RPM. The easiest way to find out how fast you’re pedaling is to buy a computer that tells you your cadence. If a computer isn’t in the budget, count how many times your right knee comes to the top of the pedal stroke for 30 seconds, then multiply that number by two.

This new style of pedaling may feel a little awkward and strain your lungs at first, but you will make significant improvements over short periods of time. Plus, it’s much harder to correct bad form later. Practice pedaling much faster than normal for 5-minute intervals on a flat section of your ride. This will get your heart and lungs to shape up and make it easier to concentrate on your pedal stroke since it’s only for a limited amount of time. As your body adjusts, increase the duration and the cadence until you’re in the 90-to-110 RPM zone. Over a few months’ time, this will become second nature, your lungs will no longer burn, and when you want to go a little harder, you’ll pedal faster instead of reaching for a higher gear that slows you and your legs down.

When to Shift
Cadence is all well and good, but to stay in a gear that’s comfortable to spin in, you’ll have to get familiar with when and how to shift. Anticipation and timing are essential aspects of shifting smoothly. You can see when the road in front of you starts to pitch up or down or that you’re approaching a stop sign or red light. If you wait to shift until after your cadence has slowed, you’ll lose your momentum—and with it some control of the bike.

The key to good shifting is consistency in pedaling. That does not mean staying in the same gear all the time but, instead, staying in the same cadence zone as the road undulates and conditions change. In general, if the road goes uphill, you’re in a headwind, or you’re coming to a stop, you’ll shift into lower gears to make it easier to pedal. If you’re picking up speed from a stop, have a tailwind, or are heading downhill, you’ll shift into higher gears.
When you’re cruising downhill in the blaze of a fantastic descent... make sure you downshift before the hill ends to stay in a spinning gear for what comes next.

The shifts you make with your right hand will compensate for the small changes in the road and wind. The large jumps you shift with your left hand deal with bigger changes—just like going up or down steep hills. As you get to know your bike and get more comfortable with cadence, you’ll find yourself using your right shifter constantly throughout the ride and your left shifter less frequently. However, it’s important to use both to your advantage, so find some times to play with both so you’re comfortable when the time comes to use them.

Downshifting
Downshifting means putting the bike into an easier gear—the gears closest to the inside of your bike. If your gears on a road bike were numbered, you’d be shifting into a one, two, or three in the rear and a one or two in the front. This is similar to a car with a stick shift, and the same basic principles are in place. Don’t worry so much about numbers. Just remember: Keeping it low helps you go.

As we’ve discussed with cadence, the less tension on the chain, the better. So when you’re approaching a stop, downshifting into a lower gear will set you up for a spinning start. Many of us tend to just stand up on the pedals to get moving, but this is very hard on the chain and gears and also makes for a slower and more unstable start, because it takes more time to give the bike momentum and get rolling up to full speed. Most of this shifting will likely take place with the rear gears unless you have to go up a hill immediately after the stop. Then you might want to make sure your chain is on the easiest gear in front, too.

As the terrain tilts upward, it takes more power to get up the hill. To keep a fairly high cadence when climbing, you have to downshift before your pedals slow too much. Shift too late and your gears will loudly remind you that they prefer you make clean, smooth changes; shift too early and your legs will spin so fast that you will lose momentum. Start uphill in the easiest gear in the front and then use the back gears to dial in the smaller adjustments of how fast you need to pedal. Realistically, no matter how strong you are, it’s almost impossible to keep a cadence of 90 to 110 RPM going up a steep hill. Instead, aim for closer to 70 to 90 RPM.

Upshifting
Although most of the time the challenge will be to get your RPM high enough to spin properly, there’s always a point of diminishing returns when your legs will be spinning too fast. If you don’t have quite enough resistance on the pedals, you’ll lose your momentum and, with it, your balance. That’s when you’ll want to upshift into a higher, harder gear.

Descending a hill is one of those times, as is when you’ve got a really strong tailwind or you’re picking up speed from a stop. The biggest challenge of riding in a higher gear is looking ahead to know when you might need to downshift again. When you’re cruising downhill in the blaze of a fantastic descent, it’s easy to forget that the hill is going to bottom out. Make sure you downshift before the hill ends to stay in a spinning gear for what comes next.

Climbing
No matter who you are, there’s no sugarcoating the fact that hills hurt. We all have it within our reach to temper that pain and master that climb by making the most of the gears our bike offers. The most efficient way to do this is to keep your butt in the saddle and keep your pedals spinning between 70 and 90 RPM. Don’t avoid your lowest gears, thinking it makes you some kind of hero. The pros will be the first to tell you that they use their lowest gears most of the time.
**Stay relaxed.** A death grip on the bars, grinding your teeth, and hammering the pedals is a huge waste of energy. When you chill out in the saddle, it’s easier to take the fullest breaths possible, which will help deliver much-needed oxygen to your blood. Elbows and wrists should be loose on the bars.

**Be patient.** Your speed is going to slow quite a bit—possibly by almost half or more. Don’t try to make up for it by madly attacking the hill. Pacing yourself is the key to keeping your heart rate and lactic acid in check so your legs don’t blow up and you feel like you’re killing yourself trying to get to the top. If you’re in your lowest gear and you still can’t make it to the top, pull over and briefly rest until your heart rate comes down, or walk. It’s not cheating. It’s not failing. It’s using your brain to make the most of your body.

**Walk if you must.** All cyclists have faced at least one hill they have had to walk—even the pros. A time will come when you’ll build up the strength to conquer most hills. In the meantime, go easy on yourself and set smaller goals with the climbs around where you ride—like trying to make it up farther each attempt or adding another hill to your route.

**Shift your weight.** Shift your weight very slightly into the back of your saddle, which will give you the best leverage on your pedals. This also weights your rear wheel, giving it more traction. If the grade is very, very steep, you might have to shift your weight toward the nose of the saddle to keep the front wheel from popping up off the ground. In this case, remember that keeping your body relaxed is key.

**Stand if you must.** As for climbing out of the saddle, it takes more energy to stand than to pedal seated because it shifts the work of your body from cardio to power. You’ll literally be muscling up the hill. Most riders can climb like this for only a short time before they pop, so be strategic about when you stand. Before you stand up, upshift into one higher (harder) gear in the rear, which adds resistance—and therefore power and torque—as you push down. This will bring your average rpm down to around 60. Pull lightly on the handlebars for better leverage, moving the bike slightly from side to side beneath you. This will exaggerate the pushing down and lifting over of your pedal stroke more than your normal spin.

**Descending**

This is the good stuff. Coasting is a thing of beauty and a hard-earned break for your tired muscles.

Descending smoothly is all about staying within your boundaries while letting the bike do the work. Riders who are tense and nervous are more likely to get in an accident because they’re riding the brakes too hard. Great, easy descending comes with learning to depend on your eyes, breathing, and weight distribution much more than your brakes.
A death grip on the bars, grinding your teeth, and hammering the pedals is a huge waste of energy.

Lower your center of gravity. This will keep you grounded and stable, so getting your weight back and closer to the road is a plus. If the gradient is slight, most riders will choose to stay in the neutral position (hands on the top of the bars, grabbing the brake hoods) and shift their bottom back a bit on the seat. Once the road tilts down more aggressively, a high and tilted forward torso moves too much of your weight over the front wheel and you can topple over.

Adjust your hands. When the road drops deeply, reach your hands down to the forward part of the drops (the bottom curved part of the bar), where you can easily reach the brakes, then shift your weight back even farther on the saddle, adding traction to your rear wheel. If you’re shy about facing downhills, this position can seem a bit intimidating at first. Gain confidence by practicing this dropping down and backward weight-shifting on smaller declines. After a few goes, you’ll start to notice how much more connected your wheels feel with the ground, and shifting to the drops will be a natural way to glide down the hill.

Keep your feet level as you coast. Put a little pressure into them. This will help lift a little weight off your saddle and help the bike move smoothly beneath you, especially on rough pavement. Nervous riders tend to cling to their seats with their legs, which keeps them from being able to react instantaneously to changes in the road. This is another place to loosen up.

Change foot position as you corner. When you’re traveling at higher speeds around bends, position the foot that’s closest to the outside of the road down at the bottom of your pedal stroke and press enough weight into it that you can lift a bit more from the saddle. As the bike leans beneath you, this will counterbalance your weight, keeping your body upright and helping your tires hold traction.

Keep your head up. Of course, you should always be scanning ahead to watch where you’re going, but keep your head up. When approaching curves, you need to turn your eyes, head, and neck to look around to the exit of the curve, as opposed to the middle of the bend.

Use your brakes lightly. Feathering them softly to scrub speed keeps the wheels from dangerously locking up in a skid. If you’re intimidated by descents, you might be tempted to hold the brakes the entire way down. Bad idea. All that friction can heat up your rims, ultimately causing your tire to blow. Riding the brakes also makes it harder to keep your weight pushed back and your body relaxed, not to mention it’s a huge waste of your precious energy on what’s supposed to be a rest period during the ride.

Always brake before corners. Never brake in them when your tires are pushing the limits of contact and you’re more likely to slide out. The curve will help your bicycle pick up speed so you’ll exit at the same pace—or faster than—you went into it. Of course, that applies only when you actually make it through the turn. Don’t be tempted to cross the midline into the oncoming traffic lane. A curve can be a life-altering mistake if you assume there isn’t anyone coming around uphill on the other side.

Take care on wet roads. Go a little slower than you normally would. Water decreases traction and lifts the oils that vehicles shed, creating a slick, lubricated surface. Even if it’s not raining, damp or mossy roads should be ridden with caution.
CORNERING

Carving a perfect turn is both sweet and satisfying. Most of us intuitively assume that steering comes by turning the handlebars. This is true at very slow speeds when you lack momentum, but most of the time, you guide the bike around curves by leaning it in the direction of the turn. Luckily, a lot of the same concepts from descending also apply here.

First, and most important, relax. Loose joints allow you to move around the bike easily and stay off the brakes.

Next, look ahead, through, and around the turn. You’ll be tempted to look straight into the corner of the turn. If you do, that’s where you’ll ride—likely right off the road. It’s counterintuitive, but force yourself to look as far ahead down the road as possible by following one of the pavement markings until it disappears on the horizon. Sometimes this means that your head and eyes will be turned completely to one side—on sharp curves it can almost be to the point where you’re actually looking over your shoulder. It may seem like you’re not watching where you’re going, but that’s precisely what you’re doing. By looking far ahead, your bike and body will naturally veer in the right direction. If you’re nervous that you’ll miss a pothole or debris on the road in front of you, trust that your peripheral vision is strong enough that you’ll notice if something comes up.

Make a wide arc with the bike. To do this, you’ll be using the whole lane, so make sure traffic is clear behind you first. As you enter the turn, start with your bike close to the outside of the curve. Riding into the turn, aim for the inside of the corner. As you exit, arc back into the outside of the turn. Out. In. Out.

Keep the inside pedal up, the outside pedal down. One common mistake for new cyclists is to have the inside pedal down, which causes it to scrape against the ground. Position your feet so your inside pedal is all the way up and your pedal closest to the outside of the road is all the way down. This allows you to put some weight into it for added traction. By riding this way, you’ll naturally angle the bike down toward the inside of the road. This tipping motion seems a little scary at first, but it takes advantage of the natural gravitational pull of the bike. If you try to fight this by keeping your bike upright, you’ll lose traction and speed.
Emergency Maneuvers

Getting out some cones and practicing these maneuvers until they’re second nature will give you a great boost in your bike-handling skills. When that emergency comes up, you won’t even think, you’ll just avoid.

THE QUICK STOP

Emergency stops can manifest themselves in these common scenarios: the car that suddenly backs out of a driveway or the light that turns red. They are also easy to learn because they are mainly an exaggeration of your normal braking technique. After putting both your feet evenly on the pedals, grab a handful of both your brakes. This isn’t the time for feathering: Go big or go down. Simultaneously shift your butt so far back that you’re behind the saddle and thrust your arms forward. This will cause your torso to drop down over the top tube and lower your center of gravity, which will keep you glued to the road. Be bold as you force your bike forward and push your weight back.

Tracking your front wheel quickly to the right and left of the obstacle will help make a figure eight with your wheels around it, so you miss it completely.

Roadkill Roundabout

The dreaded roadkill: Unfortunately, it will happen eventually. Whether it’s the wildlife victim, a big rock, or random garbage, there will be stuff in the road you want your tires to miss but you don’t see until it’s too late to ride around. You can still figure-eight the path of your wheels around them. Ride until you’re a few inches short of the obstacle and then quickly steer left, then right, then continue riding on past the debris. When you flick your handlebars, the bike will lean in each direction and your tires will roll around it. This is a great one to practice with a rag or something you can easily roll over. You’ll be surprised at how quickly you can make this move—and how easy it is to stay upright.

HANDLING ROAD HAZARDS

Debris

Potential land mines like fallen tree branches, sunken sewer grates, and potholes are best avoided with good scanning techniques so you can move out of the way ahead of time. If you can’t avoid them, stand up on your pedals and relax your arms and legs. Don’t hit the brakes, as momentum is more likely to help you cruise over them.

Slippery Spots

If you come across piles of wet leaves or wet metal, such as manhole covers, brake and slow down before rolling over them. When your tires make contact, don’t pedal or brake at all. Coasting will glide you over, but any friction control (like accelerating or hitting the brakes) will cause your wheels to slide out.

Railroad Tracks

Always cross the tracks as close to 90 degrees as possible. By making your path perpendicular to the ruts, you’re less likely to fall into them. Also, use the techniques for debris and wet metal if the tracks are raised or rutted.

Bad Weather

When it’s raining, remember that you and the vehicles have decreased awareness and less traction—a really bad combo. Ride a little slower.
than normal, take longer to slow down, and make yourself as visible as possible with bright clothing or lights.

Dawn, dusk, and the sun
Remember that everything is harder to see at these times of day because of diffused light or, worse yet, the sun in the eyes of people driving around you. Use extra caution during these hours.

Critters
If you meet up with dogs, kids, squirrels, or the cats that chase them, keep them in your peripheral vision in case they make a kamikaze run for it into the road. With dogs, be especially watchful of owners who use retractable leashes, which are instant clotheslines for unsuspecting cyclists.

Other Cyclists
If you are with people who have no idea how to ride with others, slow down and have a bell or call out a warning of “On your left!” before overtaking them.

Motor Vehicles
Keep an eye out for cars exiting or entering driveways or other turns. If it looks like a car is slowing but isn’t signaling, assume it is going to turn anyway and wait to see what it does before proceeding.

HOW TO FALL
If you are going down, hold onto the handlebars, tuck your head and shoulders, and try to land on large muscle masses such as your bottom, hip, and shoulder. Angling your body toward the ground, use the flow of the energy to dissipate the impact, and try your best to roll out of the fall. If your helmet hits the ground—no matter how hard or soft—retire it. Don a fresh one for your next ride. Bonus: You’ll feel safer and more confident for your postwreck return to the road.

GET VISIBLE
Making sure you can be seen can save your life. Here are some tips on how to help yourself stand out in the peripheral vision of drivers.

Keep your clothing bright. This is a challenge for many cyclists because bright clothing is harder to keep clean from road grit and accidental brushes with bicycle grease. Invest in some good stain lifter and keep your colors bold.

Look for reflective accents in clothing. Rain jackets in particular should have good bits of reflection since in most states, cars are required to drive with their lights on in the rain.

Look for reflective accents in your bicycle gear. These days, everything from fenders to saddlebags to helmets comes with reflective surfaces. If they don’t or if you’d like to add more, there are options, from simple reflective tape to fun, bicycle-centric, decorative stickers that make both your bike and your personality shine.

Lights are the best (and sometimes mandatory). If you’re riding at night, most municipalities in the United States have laws requiring cyclists to use lights to help with visibility. But cover of darkness isn’t the only place lights come in handy. Rain makes most vehicles lose a good percentage of their clear sight lines. In general, you’ll want at least one front and one rear light, and if you ride where it’s particularly dangerous, you might want a few of each—especially in the rear, since you’ll be riding with the flow of traffic and the most common accidents come either from behind or from someone passing you and then making a right-hand turn in front of you.