

How to Fix a Flat

1. Remove the wheel

Turn your bike upside down and (if you don't have a quick release) remove the nuts on each end of the axle with a crescent wrench. Release your brakes to let the wheel move through the break pads. If you do have a quick release lever, pull it into the open position (you should not twist the lever, but move it like you were opening a door) hold the nut on the other side and turn the lever counter-clockwise until it is loose enough to let you remove the wheel. For a front tire flat, lift the bike by the handlebars and the wheel should fall out easily. For a rear tire flat, with your bicycle upside down, move the chain out of the way (you may want to use gloves for this) and pull the wheel straight up. Be sure to lay the bicycle down on its left side once the rear wheel is off so that there is no weight resting on the derailleur—the most fragile part of the bike.

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2. Remove the tire

You will need two tire levers for this job, which can be found at most bike shops for less than \$5. Hook the rounded end of a tire lever under the bead (the outer edge) of the tire and the other end of the lever onto a spoke to hold the lever in place and keep the tire from popping back into the rim. Hook the rounded end of the second lever under the bead next to the first and work it around the tire/rim clockwise until one side of the tire is off the rim. Once you've done the whole side, you can pull the tire and tube together off the rim.

3. Find the problem

Keep track of which way the tube was facing in the tire and pump it up. Listen for the hiss of air escaping to find the hole. If you can't hear it, you may need to pump up the tube enough to stretch it out and make the hole bigger—don't worry, tubes can typically be inflated to almost twice their size with no problem. Once you've found the hole in the tube, be sure to check the tire for any object that may be lodged there. Otherwise, you might find yourself re-patching the same spot.

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4. Patch the tube

If the hole is really large (as in a blowout) or the valve is torn away from the tube then the tube needs to be replaced. If the problem is small enough to be fixed by a patch, release the air from the tube and prep the surface by cleaning the punctured area with sandpaper or a metal file. If you use a glueless patch, just stick it over the hole and press firmly. If you are using a patch that requires glue, apply it to the leak area just a little bit larger than the size of the patch. Wait for the glue to get tacky before you apply the patch (3-5 minutes) and press the patch firmly into the glue to make sure it sticks well.

5. Install the tube

Inflate the patched or new tube until it holds its shape, then insert it into the tire. With the valve stem placed in the valve hole, work the tire back into the rim with your fingers by rolling the bead away from yourself. Be careful not to pinch the tube between the tire and the rim. The last portion of this process is going to take a lot of force, but it's best to work with your

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hands instead of risking puncturing the tube again with a lever. Once you've replaced the tube, inflate to half of the desired pressure. Then check to make sure the tire is seated properly before you continue inflating.

6. Reinstall the wheel

Put the wheel back on your bike. If your wheel uses nuts, tighten each side a little bit rather than completely tightening one side before starting on the other. If you have a quick release, be sure to put it on tight enough—it should offer enough resistance to leave a mark on your hand. It is a good idea to set the quick release so that the handle points toward the rear when it is closed. This reduces the chance of getting it snagged on something. After you put the wheel on, tug on it make sure that it's not loose.

7. Check the brakes!

Don't forget that you might have removed your brake cable to make it easier to remove the wheel. Once the tire is on, reattach your brake cable and spin the wheel to make sure there is no brake rub and that the tire is spinning evenly. Then give the brakes a quick test before you get back out on the road.

Done!