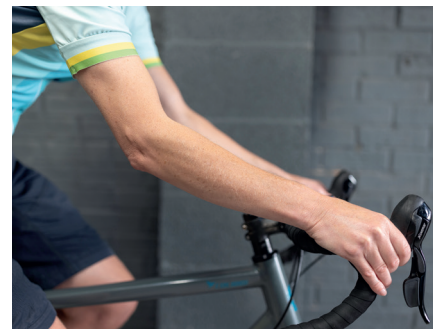




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Knee over pedal spindle (KOPS) may work for you but don't worry if it doesn't. Keith Bontrager blew holes in it years ago  
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**Top:** Locked elbows are a sign of a badly fitting bike. A slight bend, as shown, means your arms can act as shock absorbers instead of shock transmitters

**Above:** Assessing saddle-to-handlebar distance. A forearm plus a couple of fingers' width works for Dan but YMMV

on the bike. You can estimate a position you'll find comfortable like this: put your elbow against the nose of the saddle and reach your fingers towards the centre of the handlebar, where it's clamped by the stem. If it's more than two-to-four fingers' width away, the bike is probably too big or has a stem that's too long. If it's closer than just-touching distance, the bike may be too small or have a stem that's too short.

Sit on the bike to check, putting your hands on the brake hoods (drops) or grips (flats). You want at least a slight bend at your elbows, so your hands are essentially resting on the handlebar as opposed to propping you up. If your elbows are locked out, the bike is too long or low for you. Bumps and vibrations will travel up your arms.

an extremely long seatpost. He wanted a huge saddle-to-handlebar drop and was happy with the result.

## ZERO-COST BIKE FITTING

You can make these checks in store if buying a new bike, or at home if your existing bike isn't as comfortable as you'd like.

### • Stand over the bike

You need at least a couple of centimetres of clearance between your crotch and the top tube or you risk bruising your undercarriage when you get off the saddle. More is better if you'll be riding off road.

### • Set saddle height

Many casual cyclists have the saddle too low. Many cycling enthusiasts have it too high. Sit on the bike. (You'll need an assistant or a wall.) Adjust the saddle height until, with the heel of your foot on the pedal, your extended leg is just straight when the pedal at its furthest point, with the cranks in line with the seat tube. That's your approximate saddle

height. You can tweak it from here, depending on preferences and pedalling style: are you a heel dropper like me or a toe dipper? Be careful of putting the saddle too high to 'gain power' – you'll rock your hips which may hurt your back. Over reaching to the pedals may also squash your undercarriage as you pedal. (Saddle sore? Try dropping your saddle. Start with a 5mm reduction.)

As for saddle angle, start with horizontal. Some cyclists, especially taller ones with a large saddle-to-handlebar drop, find that it's more comfortable to tilt the saddle down a few degrees.

### • Assess handlebar height

Many road bikes have the handlebar set very low relative to the saddle. A better starting point for non-racers is to have the top of the handlebar level with the top of the saddle (whose position you've just set). Can you get the handlebar this high by moving the stem up the steerer tube and/or fitting the stem the other way up?

If the steerer tube has been cut off just above where it emerges from the head tube, you can't raise the stem any higher than that. (It's a bad idea to have an excessively long steerer tube in any case, unless it's made of steel, as it may shear!) So a large part of being able to get the handlebar high enough is having a frame with a tall enough head tube or a fork with a steel steerer tube.

### • Assess handlebar reach

The saddle-to-handlebar distance determines how stretched out you'll be

