

Notes (by Tony Eastwood) for parents on bike maintenance to supplement the website link on the lesson page for today which is okay but doesn't have a lot of detail and doesn't emphasize the importance of **brakes**.

Brake basics:

There is a huge difference between a brake which is working properly and one which is not working properly. The differences come from things like the state of the cables (old rusty cables don't pull well) and travel adjustment – together with the state of the brake blocks (or equivalent for a disk brake). One of the worst features of gradually deteriorating brakes is that the normal user of the bicycle (especially a child) will not be aware of the gradual deterioration of the system. You simply never know when stopping will become **absolutely essential**. Bikes always have two brakes – either one of them can fail instantly (e.g. broken cable) so you **need** two.

Be very careful of the following aspects of maintaining one's child's brakes.

1. Never maintain a brake without warning the normal user of the bicycle that you have done so. For example, if you have just made the front brake work three times better than it did before then you are inviting your child to 'go over the top' the first time brake is used in anger. Tell them you have maintained their bicycle and that they should now set off slowly and **deliberately** test the brakes.
2. Be careful that you don't get oil or WD-40 equivalents onto the breaking surfaces of a bicycle. Even on a rim brake it can make quite a significant difference – on a disc brake it can make an enormous difference – you may only have 10% of the normal braking power.
3. Rim brakes work best when the rims are aluminium. For steel rims (often fitted to children's bicycles) braking performance is good in the **dry** – however in the **wet** braking performance of typical rubber brake blocks on a steel rim is very poor. Be aware of this if when you take your children out for a ride it begins to rain. There are solutions to the problem – you can, for example, use leather rather than rubber brake blocks, or other types of rubber can be used (a good bike shop would help you).
4. It's worth training your children to use **both brakes**. As you apply the brakes there is weight transfer onto the front wheel. That is why the front brake is so important – in reality in a very fierce stop the front brake is doing everything. However, if you're not using the back brake you won't be aware that there is almost zero weight on the back wheel, and even more importantly you will not be aware that your bike is about to **throw you over the top**. If, however, you use both brakes then as you apply them increasingly eventually you will get a slip at the back. At that point you simply ease off. There's much more complexity to using the two brakes than this, professional racing cyclists are extraordinarily proficient at stopping. However this is a start. (Stopping using only the front brake is a common fault).
5. Another principle worth instilling is the old motorcyclist principle '**brake or corner**' – never '**brake and corner**'. To fall off a bicycle the easiest way to do so is to apply the front brake hard while turning in a steep corner - the front brake wheel will slip outwards and sideways and you will fall off.

To maintain any kind of bike brake there are many websites – the trick is simply to search for the right term. For example 'maintain caliper brakes', 'maintain disk brakes' should get you a set of pictures and instructions. If the pictures don't look like your brake try a different search. Or use '[sheldonbrown.com](https://www.sheldonbrown.com)'. Sheldon Brown was a classic bicycle enthusiastic and eccentric. He is no longer alive (and most sadly he was an atheist) but his website is still maintained (<https://www.sheldonbrown.com/brakes.html>). His site provides an astonishing detail on every mechanical aspect of bicycles.