



Cornering on your bike



Cornering – lean your bike

Lean your bike into the turn and keep your body slightly more upright.

Even at moderate speeds, you achieve most of your steering by leaning the bike, not yanking on the handlebars. Try not to anguish over why this is - it's something to do with off-sets, parallel universes and other mysteries from the dark side. Anyway, the amount of turn depends on how far you lean the bike.

Big lean for tight turns. Little lean for long sweeping turns.

Body lean

As you turn, nasty centrifugal forces conspire to flick you off your steely mount into the brambles on the outside of the corner. The forces strength depends on how fast you're travelling. So when you whip around a corner scary fast, you need to lean into it heaps (think about those crazies who race grand prix motor cycles around impossibly tight corners at ridiculous speeds). But because your speed and the radius of the turn are rarely in perfect sync. you need to lean your bike and your body at different angles.

Your weight and the front wheel

To carve out an elegant turn you've gotta speak proper and maintain traction on the front wheel. What? You need to transfer a teeny bit of weight on to your front wheel. Subtly move your weight forward in the turn. Try sticking out your elbows - this forces you forward and lowers your centre of gravity. Beware: overdoing this while haring down steep hills can result in the big full frontal endo. You also want to keep your weight over the "contact patch", i.e. where the tyres meet the dirt. So try to put more weight on your inside hand and on the outside pedal - which you (obviously) must have placed at the bottom of its stroke.

For optimal cornering it pays to enter the corner at the right speed. A speed comfortable to you. Before the corner you can brake hard while you're still travelling in a straight line, but often you're forced to take evasive action once you're well and truly in the corner. Try using the back brake to scrub off speed - the front brake will generally force you and your bike to suddenly part company. Ouch. Oh and try and accelerate out of it – the corner!

FORCE AND MOTION

A force makes things move, but a force can also stop things from moving. When you pedal a bike, you use your muscles to create a force. You are like the engine for your bike. You push the pedals in a circle to start a forward motion.

When you squeeze the hand brakes, you are also exerting a force, which stops the motion of your bike. Motion is another name for movement. Speeding motion up is called acceleration. Slowing down motion is called deceleration.

GRAVITY

Do you remember when you first got on a bike? You probably fell a lot. The reason you fell is because you were too young to make the wheels go fast enough to keep the bike going in a forward motion, so gravity pulled you down. When you became older, you learned how to make the wheels go fast enough, so you could



stay up.

When you make the wheels go fast enough, the wheels create a force that acts as an anti-gravity force. A bike works like a gyroscope. A gyroscope is a cool thing that defies gravity. Get one. By putting a string around the axle and pulling hard, you make it spin very fast. So basically, when you are riding your bike, you're defying gravity! Cool.



A gyroscope!

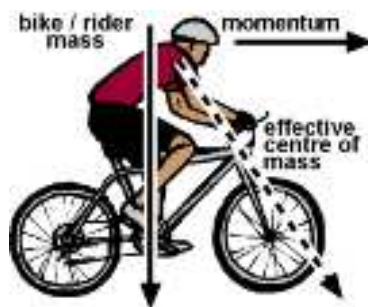
INERTIA

Sir Isaac Newton had a few laws one being about INERTIA that said basically an object that is still will stay still and an object that is moving will continue moving! Mind blowing. Pity he did not have bike. Imagine him and Leonardo Da Vinci. Wrong time again.

The position of your body on the bike has a major effect on how the whole bike/body thing performs. Weight transfer is the secret to controlled descent and stopping.

As you are travelling you have momentum, on top of this is the mass of you the body and all kinds of gravitational pulls... stay with me here yes I know it's a physics lesson.

So you are descending fast. As you descend, your centre of mass shifts forward causing the back wheel to become unweighted. When you hit the brakes, your effective centre of mass moves forward - the back wheel lifts and the front digs in. So there's more traction up front and more effective stopping using the front brake. But what about avoiding an endo you say? Plan b - shift your weight back at the same time to avoid.



Health and safety warning ensure the bike is upright and pointing straight ahead when grabbing lots of front brake, i.e. not cornering.

But then as you brake, your effective centre of mass moves even further forward and the stopping process wants to rotate you and your bike over the front wheel. Clearly this is not a good thing. Compensate by keeping your body low and easing your bum off the back of the seat.

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When it's really steep you'll end up with your stomach resting on the saddle. You've got it right when your back wheel stays in contact with terra firma, so the bike is stable and you avoid doing the full frontal spontaneous dismount (ouch). Called an endo in common cycle parlance.