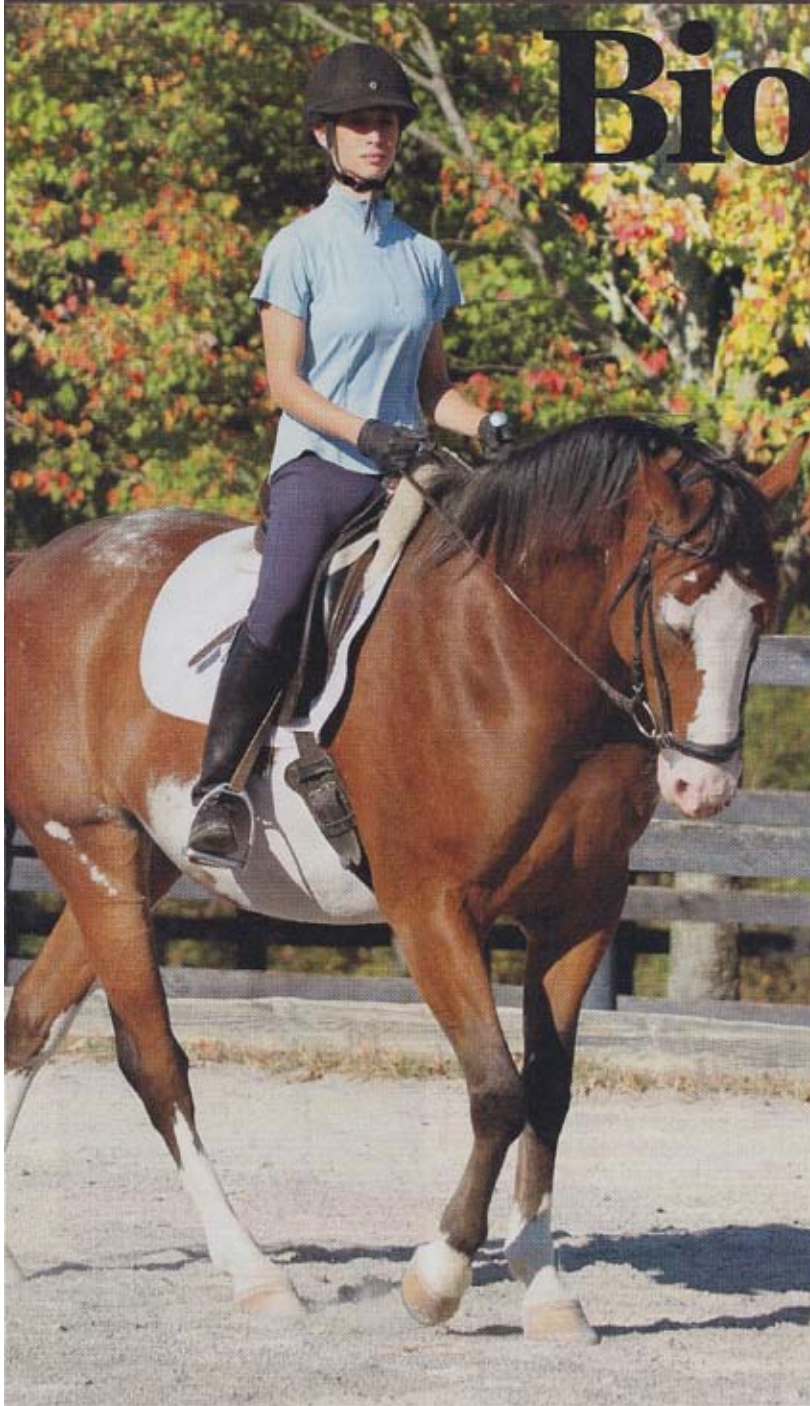


# Understanding **Ri** **Biomech**



FOR BETTER OR WORSE, YOUR **POSTURE IN THE SADDLE** AFFECTS YOUR HORSE'S PERFORMANCE.

**A**chieving the ideal posture in the saddle is easier said than done, but it serves a purpose more important than developing the elegant look of an accomplished equestrian. Maintaining correct form plays a significant role in your horse's performance, since your posture, and any of its flaws, affects your horse's every move. This is the basis of rider biomechanics.

In the field of biomechanics, mechanical principles are applied to living organisms to study their function and structure. In terms of sports, these principles, as well as the laws of physics, are applied to human performance in order to gain an understanding of how athletes move and how each movement affects

By *Kim Abbott* / PHOTOS BY LESLEY WARD

also create a head tilt in your horse, or 'jack-knifing' of his shoulders, or cause his back legs to cross over," adds Kelly.

Turning out both feet to maintain better lower leg contact is a bad habit frequently seen among hunter/jumpers. "Turning the toes out makes the rider's butt stick out, the upper body tip forward, and the arms hang in front of the body instead of beside it," says Kelly. "And when you pick up your hands, the thumbs will therefore not be the highest point of the hand. The statement, 'turn your toes out to get your lower leg on' is simply frightening, as it is far less stable than the normally functioning foot and lower leg."

Kelly cites gripping too hard with the knees as another common fault that can easily unseat a rider. Additionally, if your lower leg is too far back, rather than being correctly positioned at the girth, then you will likely lean forward. This places more of your weight on your horse's front legs and causes him to travel on the forehand, which hinders everything from executing smooth transitions—especially when picking up the canter—to maintaining forward movement and developing impulsion and collection. Making sure your stirrups are at the right length for your body can help you keep your leg and foot in the correct position. "An appropriate length for flatwork is when you take your feet out of the stirrups and the stirrup sits just underneath the ankle bone," says Kelly.

Even if your legs and feet are properly positioned, you can still develop biomechanics issues in your

**Slumping is a common fault that causes the rider to become unbalanced and places more of the rider's weight on the horse's front feet, significantly affecting his ability to use his front end.**



upper body, where the head, shoulders, elbows and hands create the most problems. However, issues in the upper and lower body are all connected.

A rider who exhibits a head tilt by dropping one ear toward her shoulder will cause her horse to do the same. If

A turned out foot and a dropped ear, shoulder and elbow are all biomechanics issues that can cause your horse to tilt his head, twist his body, cross his hind legs and more.



you drop your right ear to your right shoulder, then your shoulder and elbow will drop, and your horse will often mirror your posture by dropping his right ear and shoulder, displaying a head tilt. Again, these weaknesses in your posture may cause you to shift your weight onto your right seatbone, which can lead to performance issues in your horse, such as falling in on circles and turns.

The moment you drop your ear to your shoulder, every other part of your posture is affected, says Kelly. For this reason, the head tilt is considered an important tool in measuring other biomechanics problems in the rider.

Slumping is also a major fault in the upper body. "We know it looks bad, but it's also a very unsafe and weak position from which the rider can fall more easily," says Kelly.

"If riders slump, they put more weight on the [horse's] front feet," she continues. "On average, riders put about 22 additional pounds on their

heels down, elbows close to the body, and a tall upper body, are mentioned in the FEI dressage rulebook.

The rulebooks are especially helpful if you find yourself confused after hearing differing opinions from various instructors. "Instead of listening to other people's opinions, read the rules," says Kelly. "Rulebooks are free, they're online, and they even have pictures! Compare your performance honestly to the rules, and there you have years' worth of training. All the work is done for you by the world's expert minds. Go to [www.fei.org](http://www.fei.org) and read for yourself. It's easier than you think, and one of the reasons my pupils are so successful."

#### Exercise a Solution

When you have a solid understanding of what's expected for your discipline, there are a couple of exercises you can do at home and in the saddle to improve problem areas. For example, when brushing your teeth in the morning and before getting into bed at



Practice improving your balance out of the saddle by alternating holding one leg out in front of you while brushing your teeth in the morning and at night.

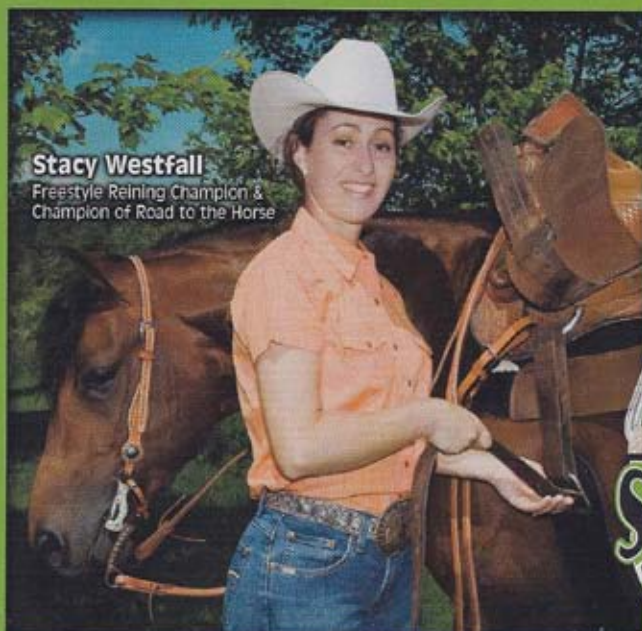
night, stand on one leg and hold your other leg straight out in front of you (or with your knee bent if that is easier for you), then switch. "This takes no time at all, and it's amazing for stabilizing the ankle, straightening the shoulders and improving balance," says Kelly.

Exercises in the saddle are geared toward safety. "If you feel safe, then you feel confident," says Kelly. "If you feel confident, then you push the envelope a bit and encourage better performance. If you're nervous, you will never get the best out of your horse."

One of the exercises Kelly's students practice every day to improve their stability in the saddle is standing in the stirrups. "Stand up fully—not half bent over, but standing like you do on the ground," she emphasizes. "And learn to do it in the trot at about 150 to 155 beats per minute (you can get a free metronome online these days to find out how fast that is), with your hands still, elbows bent and your horse lightly on the bit.

"Standing in the stirrups—especially

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