

How the rider's body works. The "Visible Rider" demonstrates anatomy in motion, helping riders improve body awareness and discover a clear mind/body connection. Learn to use your body wisely to improve your riding skills, prevent injury, and be able to continue a lifelong pursuit of the sport of riding.

### **Peggy Brown**

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Beneath our riding clothes and flesh lies our skeleton, that bony framework that supports our entire body. Joints and ligaments allow these bones to move, and muscles and tendons help create the movement. The skeleton is one common denominator of us all. Allowing for variations in bone size and length, we all have the same skeletal makeup. As riders and instructors we can use that skeleton to help us find correct body alignment, balance and efficient movement regardless of our student's body size or build.

A basic knowledge of human anatomy is of great importance to instructors of all sports if we are to understand the dynamics of movement. We also need to be aware of what movement is safe - allowing the body to move freely without putting undue stress on joints or muscles. This is especially important in working with children as damage done to bodies in the name of sport can often follow them throughout their lives. So often riding instructors know all about the horse and the horse's body but know very little about how the human body works.

We all know that in a correct and balanced riding position we look for a line through ear, shoulder, hip, and heel. There will of course be some slight variation based on stirrup length and riding discipline, but not much. We also need to recognize that when we ride the body is in

motion. Constant motion as it follows the movement of the horse and as it balances and rebalances in combination with the horse's balance. Riding is dynamic. To ride our best we must learn to move and flow with the horse, allowing our joints to follow and absorb the impact of the gaits. Let's consider then how the skeleton needs to be aligned to allow this freedom of motion to occur.

The foot needs to find a spot in the stirrup that can support the weight of the entire body, if necessary, for posting, galloping, or jumping work. The toes do not have enough strength to carry the weight of the body so the stirrup must be positioned further back at, or a little behind, the ball of the foot for support. The toes must have freedom to move and spread out in the boot or tension and stiffness will result.

The leg is composed of three major joints, the ankle, the knee, and the hip. These joints are our "springs". They support the body while allowing it to move. Each of these three joints must be allowed to move freely or our springs will not work and tension or even soft tissue damage will result. Respect variations in the body of the rider you are working with as well as the size and barrel of the horse. A short rider on a big barreled horse will usually carry the leg rolled out and around that horse as opposed to a long legged rider on a slab sided horse whose leg can more easily be down against that particular animal. The knee and foot angle of the rider should match up closely. When they do not, torque in the ankle or knee joint may occur and joint damage can be the result. How many riders do you know with bad ankles or knees? Remember the instructor that shouted "keep your toes in parallel to the horse"? That instructor thought that the toes-in position looked good, but disregarded the fact that the ankle and knee cannot work properly if the foot position is artificial. A good instructor respects the build and ability of the rider, and exercises caution to prevent injury. Sometimes what "looks good" does not work effectively.

The hip joint is often a problem area for riders. Muscle tension often prevents the hip joint from being open and moving freely. Many people do not have a clear idea of exactly where the actual joint even is. Often simply helping the rider locate the hip joint and understand its function will begin to allow the freeing and opening necessary for good riding.

The knee joint is a hinge joint that opens and closes while riding. When a rider rolls their knees in, or pinches with the knee, this slight twisting action can result in progressive knee damage. If the horse moves suddenly or unexpectedly a twist or torque in the joint can result in a nasty strain.

The ankle is an incredibly complex set of bones that allow the foot to function. Often riders will hold tension in the ankle joint by trying to hold their leg still or trying to force their heel down. This tension is very hard on the ankle joint itself and locks up one of the most important springs in the leg. While the heel should be lower than the toe, forcing the heel down to look good is very damaging to the ankle joint as well as the rest of the body. The one time that the heel is carried well down, but never locked, is over fences or when galloping.

The leg joints have to work together in balance for the "springs" to work. When the legs absorb most of the shock of impact, the stress on the back is greatly reduced. The backbone,

composed of the vertebrae, is the central core of the skeletal system. It protects the delicate spinal cord and connects the body. The back was not designed to take up a great deal of hard, repetitive impact. This is the job of the legs. Correct alignment and use of the legs will greatly reduce the strain on the back and help to eliminate the common riders' complaint of low back pain.

The pelvis is the base of the trunk of the body. When we ride we sit on our two seat bones which are two large arched bones at the base of the pelvis. After many hours in the saddle many people feel like those seat bones are two hard little points when in fact the seat bones are larger than one would think. One of the keys to helping a rider get into a correct balanced position is to help them balance their pelvis.

If we consider the pelvis as a great bowl (by the way the word "pelvis" is the Latin translation for a bowl or vessel) we would like to carefully balance that bowl so that the imaginary contents don't spill out. If the rider sits with a hollow back the contents would spill out the front of the bowl. The rider with a roached back will lose everything out the back. Either extreme, a hollow or roached back, will put undue stress on the vertebrae and muscles in the back, again leading to back pain and progressive damage. We need to help our students find "neutral pelvis" where the pelvis is balanced over the seat bones and helping the feet and legs support the weight of the upper body.

The ribs curve out from back to front and protect the heart and lungs and other organs and forming the chest cavity. In order to breathe effectively the ribs will move and slightly separate with each breath. When we ride we don't usually think much about the great ribcage but we would like to allow it to swing softly in balance and enable us breathe deeply using our diaphragm. Keep in mind that the ribs also serve as the framework upon which the shoulder girdle rests.

The shoulder girdle is comprised of the hands, arms, shoulder joints, shoulder blades, and collar bones. It may surprise you to know that the bones of the entire shoulder girdle only connect bone to bone on the skeleton in one place and that is in the front where the collarbones join the sternum or breastbone. This means that the shoulder girdle is an extremely free moving system of engineering that allows us almost unlimited range of motion with our arms.

In riding we all work to have good hands the mark of all good riders. But good hands have little to do with the hands themselves. Good hands come from good arms and shoulders. As the

rest of the body moves in synchronization with the horse, the arms and hands must be free to move independently and communicate with the horse.

The hands hold the reins securely well back where the fingers and palm join. Many riders think that holding the reins lightly on their fingertips mean light hands when actually this intermittent contact is very distressing to most horses. The wrist joints are softly aligned with the rest of the forearm and should have little motion as they should serve as a soft connection to the rest of the arm. Floppy “puppy paws” or tweaking wrists irritate the horse and are also bad for the actual wrist joint.

The elbows are joints often forgotten. The elbows must open and close as the horse moves, in order to follow the head and neck movement of the horse. Even in trot, when the horse’s head is relatively still, this opening and closing of the elbows allows the body to post without the motion passing down to the horse’s mouth. When a rider locks their elbows all the motion must come from the shoulders and back and subsequent back and shoulder strain often result.

The shoulder joints also follow and allow the horse to move and the shoulder blades slide slightly across the back of the ribs as well. What would happen to these soft following arms if an instructor told a student to “put your shoulders back” or “pinch your shoulder blades together”? More often a student with rounded shoulders is riding with a collapsed chest and hunching their shoulders up around their neck like a turtle for protection. Very often humans unconsciously carry their shoulders with muscle tension rather than allowing the shoulder girdle to be supported by the rib cage. Muscle tension or pain in the neck and shoulders is the result, sound familiar? Freeing the neck and shoulder girdle, correct breathing, and finding how all the joints of the shoulder girdle move and work together, will go a long way to achieving a balanced upright posture, as well as good hands.

Then we come to the head. That big human brain that so often wants to take over our lives and lead the body about. The human skull weighs about twelve to fourteen pounds; the size of a man’s bowling ball! Think about carrying a bowling ball around on top of your neck all day. When that bowling ball, or the skull, is out of balance, the muscles and other soft tissue must come into play to literally keep the head on. This often results in muscle pain and tension in the back of the neck and down between the shoulder blades. Balancing the head on top of a long free neck will help alleviate this tension as well as create a balanced and attractive posture in the saddle. Often what looks like hunched shoulders is actually an unbalanced head and neck.

We have touched very lightly here on the skeleton and how proper alignment of the skeleton affects the rider's position and ability to move freely on the horse. The best instructors and coaches of all sports study the human body and how the body moves. We owe it to our students to teach them how to use their bodies efficiently and effectively without causing pain or damage. We owe it to our horses to ride softly and in balance allowing them to do their jobs without undue interference from their riders. Helping our students learn to ride their bones is a secret to correct riding and a wonderful aid to effective teaching!

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Additional sources of information on the body and riding are: Balance in Movement, The Seat of the Rider by Susanne von Dietze, Centered Riding by Sally Swift, Anatomy of Movement by Calais-Germain and the videotape: The Visible Rider by Susan Harris and Peggy Brown.