



American Medical Equestrian Association Safe Riders Foundation

Support for The Thinking Rider

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A New View: Bringing Sports Medicine to the Equestrian Athletes

IT IS RARE the rider who does not experience a fall during his or her career. In fact, the longer you ride, the more likely you are to have fallen and incurred an injury. Many books and articles have proposed how to minimize the chance of injury in horse activities. One common theme is that if you improve your seat stability (your ability to stay in the saddle) you minimize the chance of falling. The many authors who have written on this topic feel their method will be most effective for achieving this goal.

Two years ago I met Dru Malavase through my work on the ASTM body padding committee. She invited me to the Stuart Horse Trials so I could get a better idea of what riders had to experience on an eventing course. I was researching snowmobile racing injuries and ways to maximize physical performance at the time and commented to her on what I thought were similarities between the two sports in terms of what it took to be an effective riding athlete. I had developed a successful conditioning program for the

snowmobile racing athlete and hence began the transformation of that program to one designed specifically for the equestrian riding athlete.

This is the first in a series of articles detailing that work. These articles combine the latest sports medicine research regarding how muscles function – tailored to the equestrian athlete – with conditioning methods used by athletes in other sports. For those who have never read a sports medicine or professional strength and conditioning publication, much of the material will seem strange and non-traditional. This first article will review some of the thoughts and rationale that went into the development of this program.

Injury Management

There is no doubt that injuries are a part of riding. Like athletes in other sports, riders know one of the best ways to decrease the chance of injury is to practice. The fact that there are two bodies that need to work together during practice to accomplish this presented a unique difference from the traditional athletic setting. What struck me as

most interesting though, is that many riders will place more emphasis on improving the skill and physical condition of the horse, while they focus on the technical side of the contest (i.e. how make the most efficient run through the course).

This is the first point.

Maximizing your physical fitness will not only minimize the chance of injury, but will also help you in your recovery should you become injured. However, this is not just going out for longer or more intense rides or increasing the amount of time you practice. Granted these will help, but it is conditioning for the horse first. The best way to maximize your personal fitness and minimize the chance of injury is to get off the horse and participate in a well-organized conditioning program designed to meet the rider's specific individual needs. How to design such a program and the considerations one needs to know make up one article.

How skills are taught and learned

This is a tough one for several reasons.....

The body has an inherent aversion to riding because the horse is essentially a multi-directional unstable surface and controlling the linear and landing forces applied to the rider requires a high degree of body activation.

When people are initially learning a skill, their movements are not coordinated (stiff) and as they become familiar with the skill their movements become more coordinated (loose). The amount of loosening up depends on their strength, how they are hard wired, and of course, injury. We can create exercises to help with some of the limitations, but in some cases, no amount of practice or training can improve their skill.

There are biological factors that cause females to have to work harder than males to counteract the negative effects that this surface produces.

There is the obvious difference in strength. Two other factors play a larger role. Many people have heard of the "core", but few probably know what is really is. Its full effects will be explained later.

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Editor's Corner

Spring has sprung! Welcome to the first 2006 issue AMEA-SRF newsletter. Here's hoping that you and yours are in good health and already beginning a successful new season.

This issue's feature article by Mike Pilato, the first of what is expected to be a series on injury prevention through proper conditioning, is a great reminder that there is much that we can do to prevent new injuries, and perhaps manage the remnants of old ones, in the pursuit of

improving our skills as equestrians. In Pilato's introduction, you will find a reference to someone who has been a driving force behind the dissemination of accurate, science-based equestrian safety information throughout the country—Drusilla Malavase. "Dru" recently received well-earned recognition by ASTM International for her numerous contributions. Details are in this issue. Another AMEA-SRF stalwart, Rusty Lowe EMT-P, provided a realistic perspec-

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STATEMENT

The American Medical Equestrian Association/ Safe Riders Foundation is dedicated to the philosophy, principles and application of safety of people in equestrian activities. This purpose is achieved through education, research and resource.

▲ EDUCATION of health care professionals, organizational representatives and individuals, including an emphasis on public awareness;

▲ RESEARCH to better define injury patterns and risks, efficacy of safety measures and equipment, and assistance in equipment design;

▲ A RESOURCE of experience and expertise to be shared and utilized for the benefit of equestrian safety.

A New View: Bringing Sports Medicine to the Equestrian Athletes

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For now it is sufficient to say that it is made up of two muscle groups that work together to create stability of the torso. Unfortunately females have more of a tendency for one of the groups to shut off due to the up and down motion of the horse. If that is combined with a pelvis that is rolled backward, you have an enormous problem in terms of effectively using both muscle groups.

The second factor that is significantly more prominent in females is the "position of no return." This is a term taken from the sports medicine world. If you look at the rider from the front, the knee is inside a line drawn between hip and the foot. In my research, this position is naturally (although not intentionally) used by riders to grip the

horse harder. An explanation of what this position is and its influences on the rider will be discussed later.

Chain Theory

Most riders have a baseline understanding of how the muscles of the lower extremities function to keep the knee in position. There are two chains (groups of muscles that start at the pelvis/spine and end at the ankle) and when your foot goes in the stirrup, how these chains operate change. They go from an open chained position (foot is not fixed in place and free to move) to what I refer to as a loosely packed closed chain position (foot is fixed in the stirrup but the stirrup is free to move).

If you start from the common ball of foot on the stirrup position...

Research says that riding with a down heel or toe up essentially shuts off part of the anterior chain, hence overloading the posterior chain. It is interesting to note that in many pictures, riders have a foot that has changed to a more in home (foot centered over the stirrup) position. In actuality, a foot that is closer to home provides a more stable position for the foot/ankle and allows it to be used effectively as a shock absorber and force transmitter vs. a down heel/up toe which takes out the shock absorbing/force transmitting capacity of the ankle joint in this situation.

If you place the foot in a more in home position which allows the ankle to be closer to 90 degrees and allow it to be naturally reactive, you allow the calf muscle (in this case the deeper soleus muscle) to act in its' natural role, contributing to stability of the tibia. This also helps free the quadriceps to assist the hamstring with knee function.

To make this chain complete and tie together the torso with the lower extremity, you have to increase the function of a force couple (made up of deeper parts of the glute muscle and adductors) centered about the pelvis that increases the grip of the lower leg at the barrel of the horse, with out going into the position of no return.

I hope this has raised your interest in what has been said to be a successful adaptation of sports medicine information for the equestrian athlete.

The articles to follow will deal with:

- How the torso functions by itself and in relation to

changes in lower extremity position

- How to construct a well rounded conditioning program
- Managing shoulder pain
- Managing low back pain

Mike Pilato is an NATA-certified athletic trainer and medical researcher with 17 years experience keeping all levels of athletes healthy and active. He is employed by Charles Cole Memorial Hospital in Coudersport, Penn. where he provides medical coverage for three high schools. He is also affiliated with the University of Rochester's Sports Medicine Program in Rochester, New York.

He began researching how to minimize equestrian injuries and maximize a rider's physical fitness two years ago after meeting Dru Malavase. His other research projects include body padding and snow mobile racing injuries.

He is an active member of ASTM F08-55 on body padding and chair of the lacrosse body padding committee.

His equestrian colleague through this time has been Amy Brown. Amy is a lifelong horsewoman and event rider with eight years of experience teaching lower level event riders and pony club. Amy is presently studying for her personal fitness training certification through the American Council on Exercise.

They are the founders of Fit, Focused Forward project, a conditioning system based on Mr. Pilato's research.

Mike and Amy can be contacted for clinics or individual work via email (mikep316@yahoo.com or dobe808@hotmail.com) or phone (585-329-6463 or 585-734-4245).

Editor's Corner

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tive on helmet safety that was published in Chronicle of the Horse and is reprinted here with permission.

This organization's strength, in this editor's humble opinion, is in the depth and breadth of expertise spanned by its Board and contributors, and in the unflagging passion of those who support and maintain its operations, both functionally and financially. While geographical distance keeps many of us from ever meeting face to face, technological tools provide a more or less tolerable and timely means of communication. It is by way of this sometimes incredibly efficient,

sometimes unwieldy path that this newsletter takes form.

If there is an equestrian safety or sportsmedicine question that you would like to see addressed here, please contact me to help you take advantage of our organization's treasure trove of specialized knowledge. Many thanks to the contributing authors and those who work "behind the keyboard"—especially Dr. Doris Bixby-Hammett and Pat Hutson—for helping to put this information in publishable form.

Eve Flanigan

Editor

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