

# What is a “Fit” Equestrian Athlete?

Michael L. Pilato M.S.A.T.,C.

**A**s part of EMSA's continued goal to provide information on the health and safety of all equestrian athletes (not just riders), I undertook the somewhat daunting task of answering one of the great debates between equestrian and non-equestrian athletes: Is riding a “fitness building activity?”

On one side are the equestrian athletes who argue, “How can you not be/get fit from riding and taking care of a horse?”

On the other side is everyone else who argues, “The horse is doing all the work!”

Is there really an answer to this question and or which side is correct?

There is a simple definitive answer. Science does not know for sure.

Science and sports medicine do not have a clear understanding of how much cardiovascular and muscular fitness is needed to be an effective equestrian athlete nor of its benefits to the athlete. There simply have not been enough studies done to determine what levels of cardiovascular and muscular fitness the various equestrian athletes need.

What follows is an explanation of how that conclusion was reached.

If you look at the research on this area, you would be surprised as to what is NOT there. I began by looking through the medical databases using the phrases “rider fitness” and “equestrian fitness.” From there I reviewed physiology textbooks looking for information.

While there are numerous studies detailing the injuries

sustained by equestrian athletes (1,2,6,7), I could find only TWO papers (3,4) detailing the fitness parameters and conditioning effects of riding on the equestrian athlete. The textbooks cited the same reference for estimated working demands on equestrian athletes (5,8,9).

At this point in my research, there is essentially no data to support either side of the debate.

So I turned to the only researcher cited who could provide some insight, Michael Meyers Ph.D. of West Texas A&M University.

Coincidentally, Dr. Meyers has in the past been affiliated with the AMEA/SRF (EMSA). He was more than happy to provide insight and thought on this area. What follows are answers to several questions based on those papers.

Q. No specific body type was mentioned as being representative of a “riding athlete.” Is there one?

A. Equestrian athletes are a very diverse population. The skills required to be a successful rider are not necessarily bundled in a specific body type, like they would be for a basketball player or wrestler.

Q. Any thoughts on why there was no statistically significant change in body composition (% body fat) after the 14-week equestrian class?

A. Let's not forget that just because a change is not statistically significant, that does not mean it is not clinically significant. The average subject lost 6.4% body fat and

from a health risk perspective, that is significant.

Q. I was not too surprised to see statistical increases in power, mean power, total work output and improvements in fatigue pre- to post-testing. I was surprised to see handgrip strength and number of sit-ups in a minute was not statistically different.

A. You would figure that with the manual labor involved in taking care of the horse, that there would be an improvement in grip strength. The abdominals are used in a more static vs. dynamic fashion so I am not too surprised at that finding.

Q. I kept going back and forth between the studies as I was reading them. In some places it looked as if the data was the same.

A. Yes, we were surprised to see how similar the groups were. I don't think that is a good sign. There is a great deal of useful information available to the equestrian athlete that for one reason or another is not being utilized (unlike with the rodeo athletes).

Q. I have noticed that many riders will say they use riding for their cardiovascular exercise. While the riding class met ACSM criteria for aerobic activity (5d/w >30 min, average 68% age predicted maximum heart rate), no significant improvement in several measures of cardio-respiratory function were found. What are your thoughts on this finding?

A. While the heart rate response of the rider did reach

“training levels” at the trot, extended trot and canter, the response is driven more by the isometric muscular contractions than generalized large muscle group movements seen in biking or running. Based on HR observations, there should have been a greater cardio-respiratory effect.

Q. A follow up: What do you say to the rider who simply says “I'll ride for a longer time”?

A. With the possible exception of a thoroughly conditioned cross country horse, it is not reasonable for a rider to expect a horse to be able to perform 3 or more days per week, for a minimum of 30 minutes (not counting warm up and cool down), at the trot, extended trot or canter. In addition, what physical effect would this have on the rider?

Q. Any final thoughts?

A. As I stated in both papers, riding a horse as a sole mode of exercise is not adequate to improve fitness. The rider needs to make time away from the horse and participate in a supplemental fitness program consisting of aerobic and strength-training exercises, which in addition to the fitness component will also help their injury risk profile.

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So there it is...both sides are correct and science does not have all the answers.

It is however clear from these findings, and the emerging evidence, that being an

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# PREGNANCY

## — To Ride or Not To Ride...

G. Mark Montgomery MD, FACOG

**T**hat is the question. But...what is the answer? With most equestrian sports dominated in numbers by women and with a large percentage of them riding during their reproductive years, this question comes up very frequently.

What about equestrian sports? The professional published answer to the question of whether to ride or not while pregnant is... NOT. Horseback riding is included with other "dangerous sports" such as downhill skiing, ice-skating, gymnastics, and martial arts that should be entirely avoided while pregnant. The risk of falling and subsequent injury to mother and baby is simply felt to be too great. (ACOG Committee Opinion-Exercise during pregnancy and the postpartum period, number 267, Jan 2002)

As an obstetrician, I tell my pregnant patients that exercise is good for them. Most women can continue to exercise in the same manner

## CLASSICS

### Editor's Note:

Spring is a great time to re-introduce this timeless article with its valuable information for expectant riders.

Enjoy.

Be sure to pass this one along to a friend.

as they did prior to pregnancy. Pregnant athletes can usually continue their training program with only slight modification. Unfortunately, all sports and exercise routines are not the same; some are safer than others. We all know that regardless of the professional byline that many pregnant women continue to ride. For some it is a matter of livelihood—their income depends on their riding, while for others it is a matter of passion, fun, relaxation, or fitness. Whatever the reason, many women continue to ride their horses against the advice of physicians and professional sports organizations. Are there guidelines that can be followed by women who insist on riding during their pregnancies?

I have provided the following information and recommendations for women that insist on riding during pregnancy. Any decision to ride while pregnant should be made only after a discussion with your personal physician.

Since the professional recommendation is not to ride at all while pregnant, the medical profession as a whole would accept none of the following guidelines.

In order to make an educated decision, it is important to understand what happens physiologically during pregnancy.

As the baby develops, a woman's body undergoes several changes, which may determine whether it is safe for her to ride. Hormones cause liga-

ments to soften, making them more prone to injury. Pregnant women are therefore at a higher risk of joint sprains, muscle strains, and joint separations.

While not life threatening perhaps, these injuries can cause significant pain and reduced mobility.

A pregnant woman's center of gravity shifts forward as the baby grows. The curvature of the lower spine increases. Together, these changes reduce mobility and balance increasing the likelihood of falling while riding, mounting and dismounting.

Emergency dismounts are more difficult to perform and uncontrolled dismounts (falls) are much more dangerous.

It is, after all, the danger of falling that is a major concern.

Not only is the pregnant woman more susceptible to falling, but also she is also more susceptible to injury if she falls. The results to the pregnancy may be severe. In the first three months of the pregnancy, the developing fetus is extremely well protected by the bony pelvis. Nevertheless, a severe fall could result in a miscarriage. In the second three months, the uterus moves out of the pelvis; and in the last three months the uterus is completely unprotected, and at major risk of blunt trauma in the event of a fall. Although blunt trauma to the uterus usually does not actually injure the baby, it often does result in pre-term labor, ruptured membranes, placental abruption, or even uterine

rupture, all of which are serious and potentially life threatening complications.

Besides falling, various obstetric risk factors can make riding dangerous. Consider these guidelines for riding while pregnant:

### DO NOT RIDE

#### In the first three months if:

- History of repeated miscarriage

#### After 20 weeks of gestation if high risk of pre-term labor:

- Twins/multiple gestation
- Prior pre-term labor
- Prior pre-term ruptured membranes
- Uterine structural abnormalities

#### At all during pregnancy if:

- History of prior pregnancy loss before 24 weeks
- High-risk conditions during current pregnancy
- Vaginal bleeding
- Uterine contractions
- Placenta previa
- Previous cesarean section
- Hypertension/toxemia
- Other co-existent high-risk-medical conditions

#### Warning Signs During Riding: (Stop riding immediately and consult with your obstetrician)

- Vaginal bleeding
- Shortness of breath
- Dizziness
- Headache
- Chest pain
- Weakness
- Uterine contractions
- Reduced fetal movement

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# PREGNANCY

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- Vaginal leakage of fluid
- Calf pain or swelling

For everyone else, personal decisions need to be made regarding individual benefits of riding versus the risk of falling and resultant injury. Factors to be considered are the type of riding, familiarity with the horse, and rider ability. While many should be able to safely ride until 20 weeks, extra care should be taken after 20 weeks due to reduced mobility and balance as the baby grows.

Remember, there is no scientific evidence to support these recommendations. Frank discussions with your obstetrician regarding your individual risk factors weighed against your need to ride are essential to making a good decision.

With proper preparation and precaution, many pregnant mothers to be should be able to safely ride during pregnancy.

For others it will be best to take a break and resume riding after the baby is born. Consider your options and make your decision carefully. Finally, don't forget to wear your helmet.

Good luck!

Web sites of interest:

[www.acog.org](http://www.acog.org) (American College of Obstetricians and Gynecologists)  
[www.womensportsfoundation.org](http://www.womensportsfoundation.org). (Sports and fitness-exercise during pregnancy)



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equestrian athlete can take a huge physical toll on the body. The best way to minimize and manage the physical effects that can start early in ones riding career is to dedicate time to oneself for a fitness program.

*"We must be able to take care of ourselves, before we can take care of another."*

—Anonymous

References:

1. Bixby-Hammett DM. Horse Related Injuries and Deaths in North Carolina, 1995-1999. *North Carolina Medical Journal*. March/April 2006; 67 (2)
2. Christey GL, Nelson DE, Rivara FP, Smith SM, Condie C. Horseback Riding Injuries Among Children and Young Adults. *The Journal of Family Practice*. August 1994; 39 (2): 148-152.
3. Meyers MC, Sterling JC. Physical, Hematological, and Exercise Response of Collegiate Female Equestrian Athletes. *The Journal of Sports Medicine and Physical Fitness*. 2000; 40 (2): 131-138.
4. Meyers MC. Effect of Equitation Training on Health and Physical Fitness of College Females. *European Journal of Applied Physiology*. 2006; 98: p.177-184.
5. *Exercise Physiology: Energy, Nutrition and Human Performance: Fifth Edition*. McArdle WD, Katch FI, Katch VL. Lippincott Williams and Wilkins 2001.
6. Moss PS, Wan A, Whitlock MR. A Changing Pattern of Injuries to Horse Riders. *Emergency Medicine Journal*. 2002; 19: 412-414.
7. Thomas KE, Annest JL, Gilchrist J, Bixby-Hammett DM. Non-fatal Horse Related Injuries in Emergency Departments in the United States, 2001-2003. *British Journal of Sports Medicine*. July 2006; 40(7): 619-626.
8. *Principles of Physiology*. Berne & Levy eds. C.V. Mosby 1990.
9. *ACSM: Guide to Exercise Testing and Prescription 5th Edition*. Williams and Wilkins 1995.

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