

# Stress is lower among youths who work with horses – the science proves it

By [Horsetalk.co.nz](http://Horsetalk.co.nz) on Apr 25, 2014 in [Focus](#), [Research 30](#)



Sue Jacobson, left, Patricia Pendry and Phyllis Erdman with two PATH horses. © Kate Wilhite, WSU

Youths who work with horses experience a substantial reduction in stress, according to research that measured the levels of the stress hormone, cortisol, in their saliva.

The results of the new research at Washington State University have been published in the American Psychological Association's *Human-Animal Interaction Bulletin* this month.

Three years ago, the National Institutes of Health in the US began asking researchers to tackle big questions about the effects of human-animal interaction on child development.



Stephanie Roeter, Washington State University graduate student and co-author, processes saliva samples to measure stress hormones. © Patricia Pendry, WSU

With the support of a \$US100,000 institute grant, Patricia Pendry led a research project to engage students in grades 5-8 in a 12-week equine-facilitated learning program in Pullman, Washington.

“We were coming at this from a prevention perspective,” said Pendry, a developmental psychologist at the university who studies how stress “gets under the skin” and the effects of prevention programs on human development.

“We are especially interested in optimizing healthy stress hormone production in young adolescents, because we know from other research that healthy stress hormone patterns may protect against the development of physical and mental health problems.”

Her work is the first evidence-based research within the field of human-equine interaction to measure a change in participants’ levels of cortisol.

“The beauty of studying stress hormones is that they can be sampled quite non-invasively and conveniently by sampling saliva in naturalistic settings as individuals go about their regular day,” she said.

While human-animal interaction programs with horses, dogs, cats and other companion animals have been credited with improving social competence, self-esteem and behavior in children, scientifically valid research to support these claims – and an understanding of the underlying mechanism for why people report a positive experience in these programs – has been limited.

Pendry approached the co-ordinator of PATH (Palouse Area Therapeutic Horsemanship) in the university’s College of Veterinary Medicine, which had been running a therapeutic riding program for over 30 years.



A child leads a horse during a 12-week equine-assisted learning and prevention program. © Patricia Pendry, WSU

Pendry has been riding and working with horses since she was a child and reacquainted herself with therapeutic horsemanship when she began to look for her next research project at the university.

She said stress hormone functioning was a result of how we perceived stress, as well as how we coped with it.

Stress was not just what people experienced, she said, but how people interpreted the size of the stressor.

A child in front of a large, unfamiliar horse may experience more stress than when he or she encounters a smaller, more familiar animal.

Working with PATH director Sue Jacobson and Phyllis Erdman from the WSU College of Education, Pendry designed and implemented an after-school program serving 130 typically developing children over a two-year period that transported students from school by bus to the barn for 12 weeks.

Children were randomly assigned to participate in the program or be wait-listed.

Based on natural horsemanship techniques, the program provided 90 minutes weekly to learn about horse behavior, care, grooming, handling, riding and interaction.

Participants provided six samples of saliva over a two-day period both before and after the 12-week program. Pendry compared the levels and patterns of stress hormone functioning by measuring cortisol. The results were exciting, she said.

“We found that children who had participated in the 12-week program had significantly lower stress hormone levels throughout the day and in the afternoon, compared to children in the wait-listed group,” she said.

“We get excited about that because we know that higher base levels of cortisol – particularly in the afternoon – are considered a potential risk factor for the development of psychopathology.”

Pendry said the experimental design underlying the study gave more scientific credit to the claims of therapeutic horsemanship professionals, parents and children who have reported a positive impact from these types of programs.

In addition, she hopes the results will lead to development of alternative after-school programs.

While the research focused on prevention, Pendry believes it could provide a starting point to look at the impact on children of high levels of stress and physical or mental health issues.

“Partly because of NIH’s effort to bring hard science to the field of human-animal interaction, program implementers now have scientific evidence to support what they are doing,” she said.