



NEWS

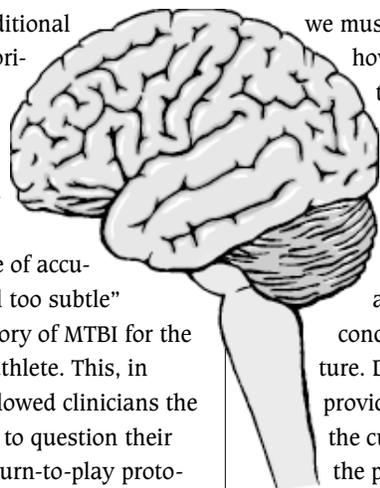
A Change is in the Air

McKeag, Douglas B. MD, MS;
Best, Thomas M. MD, PhD*

It should come as no surprise to anyone in sports medicine that the understanding of mild traumatic brain injury (hence forth referred to as MTBI) is exponentially greater today than even 12 months ago. What is surprising is how long it took to get the attention of those of us in the field caring for individuals with sport-related MTBI. Surely, you would think that chronic and repeated head trauma to high profile athletes be they boxers, football players, or hockey participants should have peaked our interest. Yet, it has taken a relatively long period of time for many clinicians to make sense out of the often confounding variables and recommendations that surround both diagnosis and management of sport-related concussion and MTBI. What initially amounted to a simple extrapolation from the experience of caring for individuals with traumatic brain injury secondary to motor vehicle accidents and emergency room trauma has now blossomed into a full-scale rigorous research endeavor and a recognition of the subtleties of sport-related head trauma. A variety of tools (neuropsychological testing, postural stability testing, etc.) as well as the refine-

ment of traditional neurologic orientation testing has enabled us to better describe with some degree of accuracy the "all too subtle" natural history of MTBI for the concussed athlete. This, in turn, has allowed clinicians the opportunity to question their personal return-to-play protocols originally based on experience, anecdotes, and published guidelines "de jour" to integrating new evidence into the care of concussed athletes. To be sure, we have yet to discover the elusive "One True Return-to-Play Guideline," but the MTBI paradigm is definitely changing.

Grindel and colleagues provide a comprehensive and thorough review of our current understanding of neuropsychological (NP) testing as well as its potential use in the management of MTBI.¹ While



we must be careful of how we use any new tool, it is becoming more apparent that NP testing will play a significant role in how we think about and manage concussions in the future. Dr. Michael McCrea provides an overview of the current thinking on the potential use of a standardized mental status sideline evaluation.² Postural stability assessment provides additional information that appears sensitive enough to detect "hard" neurologic signs and impairment up to 3 days postinjury. The "puzzle" as Dr. Guskiewicz describes it still doesn't fit together, however, and we are now aware that some concussions result in predominantly vestibular and postural symptoms that may not be detected with traditional on-the-sideline evaluations.³ Although symp-

tom severity, neurocognitive function, and postural stability can be affected initially following concussion, they are not necessarily related or even affected to the same degree. Recent technologic advances invite the possibility that diagnostic imaging will play a greater role in the evaluation of concussions. Karen Johnston and colleagues outline some of the recent developments in functional brain imaging that may be useful in identifying underlying pathology following concussion.⁴ Perhaps the most important task ahead of us is the development of guidelines that aid management of MTBI and concussion in athletes through evidence-based medicine. McCrory, Johnson, and colleagues bring us up to date from both the basic science and clinical science standpoint with two evidence-based reviews.^{5,6} Dr. McCrory also discusses the existence of second impact syndrome and calls into question those current guidelines based on second impact syndrome dictating the management of concussion.⁷ In yet another article, McCrory reviews some of the newer pharmacologic treatments being proposed for MTBI.⁸ It would appear from his discussion that no evidence-based pharmacologic

AMERICAN MEDICAL EQUESTRIAN ASSOCIATION

A tax exempt 501c3 organization.

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MISSION STATEMENT

The American Medical Equestrian Association 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 note from the President

Janet M. Friesen MD

Good things are happening in the AMEA, thanks in great part to our new Executive Director, Rusty Lowe, and our perennial supporters (Drs. Hammett, Stremple, Koepke, etc). Our web site is receiving many hits daily and is obviously more accessible. Our toll free number (866) 441-AMEA is now available. We have been in contact with our counterparts in England and a new partnership in research is being forged. New members are joining and old members are re-newing.

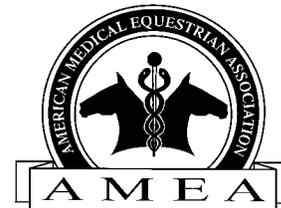
As I write this article I must share with you a small note from "Headline," the Newsletter of the Brain Injury Association of British Columbia. It recounts how Julie Bjorge, a winner in a poker ride for brain injury prevention, used the proceeds to buy herself a new helmet. Only one week later, while training her colt, he bucked her off. She hit the back of her head on a river bed. While the helmet was pushed forward onto her face it did stay on. The damaged helmet had to be returned to the manufacturer but the Peace Country Society for Brain Injury lent her a new one so she could continue to train her horse safely. This may seem slightly trivial when you think of some grand scheme to have all riders wearing helmets but I think we need to remember that each time a helmet saves someone from head injury or death deserves a bit of celebration. This is one of the main reasons for the existence of the AMEA.

Small things, like loaning

her a helmet until her replacement helmet arrives, are great starts to communities assisting riders to be safer. Last issue I mentioned setting personal examples by wearing our own helmets and now I would like to add supporting others to wear their helmets in small but tangible ways like the Peace Country Society for Brain Injury has done.

We often look at the great masses of riders who do not wear helmets and feel frustrated but progress is slowly but surely being made. A perfect example is the US Pony Club and their reduced head injury data, USA Equestrian's new rulings and the fact that the AMEA exists and is supported by educated responsible people. We will get the job done, one step at a time.

Janet M. Friesen, MD
President
AMEA



The American Medical Equestrian Association is a non-profit professional association working in the field of research & education in equestrian injuries.

It serves as a resource for safety committees and others dealing with rider safety, injuries and recovery.

Rider injuries are a fact of life in the sport and important work needs to be done in this field for the benefit of all riders.

www.ameaonline.org

Please access our site for our newsletter and information on joining our organization to support this worthy cause.

Janet Friesen, MD
President
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A Change Is In the Air

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treatment exists at the current time to offer the concussed athlete. Another important question facing clinicians in the counseling of athletes and families of athletes is the risk for long-term neurological consequences from repeated MTBI.⁹ We still don't know how many concussions should result in termination of an athlete's career. Meheroz Rabadi and Barry Jordan review the current literature and conjectures based on their experience with professional boxers and soccer players, to shed some light on this important public health concern and the risks for chronic traumatic brain injury with repeated MTBI. Finally, Professor Mitten brings the reader up-to-date with current legal standards summarizing nicely the recent cases and judgments that have come down concerning MTBI.¹⁰

Please understand that the road to universal agreement of return-to-play guidelines following sports-related MTBI is long and arduous. These papers do not represent a uniform recommendation, but rather an explanation and review of where we are currently and perhaps more importantly, what we don't know about sports-related concussion and MTBI. Uniformity in diagnosis and treatment continues to elude us. There is no gold standard test for diagnosis of MTBI, which makes our newer diagnostic tests somewhat difficult to interpret at this point in time. It is not the intent of this special issue to espouse any existing or yet-to-be-defined set of rules for MTBI management.

We simply are not there yet. Rather, it is hoped that the reader will be enlightened by the evidence-based work presented here and the potential for new diagnostic tests and procedures.

For decades, team physicians have done an excellent job applying their own personal paradigms to the management of head-injured athletes. As you read these articles, it may occur to many of you that what was at one time intuitive is now becoming evidence- and outcome-based. Still others may have more questions than answers. We are indebted to both the authors and reviewers of the manuscripts in this special issue who have devoted their time and critical honesty to bring to the forefront our current thoughts on diagnosis and management of MTBI and concussion in athletes. Remember, as physicians caring for injured athletes, we must apply what we know to each situation on a case-by-case basis when arriving at the best possible care of the head-injured athlete.

Grade school children should benefit from our new understandings just as much as high profile professional athletes. Perhaps, we will come to the revelation that there will never be "One True Return-to-Play Guideline." Perhaps, we will come to realize that MTBI should be described, not categorized, then treated and managed based on the entire clinical picture. The simple axiom that no two concussions are alike is becoming more ap-

parent as we learn more. Indeed, a change is definitely in the air.

¹The Assessment of Sport-Related Concussion: The Evidence Behind Neuropsychological Testing and Management
Scott H. Grindel, MD; Mark R. Lovell, PhD; Michael W. Collins, PhD

² Standardized Mental Status Assessment of Sports Concussion
Michael McCrea, PhD

³Postural Stability Assessment Following Concussion: One Piece of the Puzzle
Kevin M. Guskiewicz, PhD

⁴New Frontiers in Diagnostic Imaging in Concussive Head Injury
Karen M. Johnson, MD, PhD; Alain Ptito, PhD; Jeffrey Chankowsky, MD; Jen-Kai Chen, BA.

⁵Evidence-Based Review of Sport-Related Concussion: Clinical Science
Karen M. Johnston, MD, PhD; Paul McCrory, MBBS, PhD, MSc; Nicholas G. Mohtadi, MD; Willem Meeuwisse, MD, PhD

⁶Evidence-Based Review of Sport-Related Concussion: Basic Science
Paul McCrory, MBBS, PhD; Karen M. Johnston, MD, PhD; Nicholas G. Mohtadi, MD, MSc; Willem Meeuwisse, MD, PhD

⁷Does Second Impact Syndrome Exist?
Paul McCrory, MBBS, PhD

⁸New Treatments for Concussion: The Next Millennium

Beckons
Paul McCrory, MBBS, PhD

⁹The Cumulative Effect of Repetitive Concussion in Sports
Meheroz Rabadi, MD, MRCPI; Barry Jordan, MD, MPH

¹⁰Legal Issues Affecting Medical Clearance To Resume Play After Mild Brain Injury
Matthew J. Mitten

The full text articles may be ordered from the concussion issue (July 2001, Volume 11, Number 3) on the *Clinical Journal of Sport Medicine* website www.cjsportmed.com.

Executive Director's Statement

The AMEA strongly supports all manufacturers of ASTM/SEI certified helmets. Even though equestrian helmets are only a small portion of their business, these dedicated companies and their representatives have taken proactive roles in their support of the AMEA's involvement with equestrian organizations in passage of mandatory helmet rules. We appreciate their dedication to the AMEA and equestrian sports. For the most up to date list of ASTM/SEI approved helmets, go the following link on the Safety Equipment Institute's web-site: www.seinet.org/CPL/astm1163.htm.

Rusty Lowe

AMEA Vision



by Rusty Lowe, EMT-P, Executive Director, AMEA

Things are moving right along!

Looking back over the past few months, time has passed very quickly. What started out looking like a task too big to handle, has been very enjoyable. There have been a few "bumps in the road," but otherwise the AMEA is moving right along.

New members have joined,

Wrong Number!

Please note the change in the toll free number for the AMEA. Originally, we were assigned (800) 441-AMEA, but due to a mistake by the carrier, the number is actually

**(866)
441-AMEA**

our web site is becoming more popular, people are writing and e-mailing for resources and I am learning my job. I have met or talked to members who have great suggestions for our future and the Board has been more than gracious to me while relocating our office to my home. Please note the change in the toll free number. Originally, we were assigned (800) 441-AMEA, but due to a mistake by the carrier the number is actually (866) 441-AMEA.

Also, this is my first edition of the News to edit. Dr. Doris Hammett wonderfully edited the last two editions during our transition and has "passed the torch" to me. She still continues to be involved and provide valuable input. I was concerned as I was putting the articles together that the content of most was regarding head in-

jury. However, the "hot topic" of most equestrian organizations at the present is head injury or more specifically concussive brain injury. So, I feel it is our duty to educate our



Julie, Carolyn, Drake (the horse), Russell & Rusty Lowe.

sport regarding the issues at hand. Dr. John Stremple has been very helpful as our Medical Editor. Also, the Brain Trauma Foundation and Children's Safety Network is being very helpful

and establishing partnerships with us.

As you will see, there is momentum in the sport with regards to mandatory helmet rules. Equine Canada and the United States Equestrian Association have passed their rules. Please note the articles by Dr. Julie Ballard and Laurel Wood in this issue of the AMEA News. The AMEA was instrumental and had influence on these committees that encouraged their organizations to pass these important rules. We will work with them to keep them aware of current research and how changes can be made in the future to strengthen rules. Dru Malavase, a long time member and friend of the AMEA, can not be thanked enough for her involvement as our "helmet expert." These rules are long overdue.

Overall, the AMEA is in good shape. We are more financially sound and gaining new members. The pace is a little slower than I expected, but Rome was not built in a day. As long as we make forward progress and can see that we are helping the sport, I am satisfied. Membership renewals are coming in slowly and I strongly encourage you to renew your membership if you have not done so. Also, remember your gifts to the AMEA are tax deductible.

Thanks for all of your support and I look forward to taking this great organization into the future. Oh, I apologize for my name being mentioned in too many of these articles. I would prefer to be just one of the team. But, I am proud to say that I worked with some remarkable people to assist in passage of these life saving rules.

*Rusty Lowe, EMT-P
Executive Director AMEA*

REMINDER

If you haven't
already mailed in your renewal,
your AMEA membership renewal
is due.
Thank you.

Editorial comment on special issue of *Clinical Journal of Sports Medicine*

Dr. Donna Broshek:

The special issue of the *Clinical Journal of Sports Medicine* (July 2001, volume 11) devoted to sports-related concussion provides an excellent overview of the clinical issues and implications, as well as emerging research. In particular, the articles by McCrea, Johnston and McCrory and their colleagues, and Grindell and his co-authors nicely summarize the identification and assessment of concussion from both neurological and neuropsychological perspectives. McCrory and Johnston and their colleagues review recent research on the pathophysiology of concussion, as well as describe various neurodiagnostic procedures that may provide clinically relevant information and expand our understanding of concussion.

Although none of the articles in this special issue highlights the risk of concussion in equestrian sports, equestrians are at high risk for head injury, ranging from severe and fatal injuries to mild head injuries, such as concussion. Education about concussion is critical within the equestrian community. All riders should be familiar with the signs and symptoms of concussion and when to seek medical evaluation. Because most equestrians are highly motivated to return to riding as soon as possible ("if you fall off a horse, get right

back on"), educational materials and programs should emphasize the importance of allowing the injured brain time to heal before resumption of riding. Based on commonly accepted return to play guidelines used in various sports, any equestrian who sustains a significant concussion should not return to riding the same day. In addition, trained personnel should be on-site at all equestrian events to identify riders who might have sustained a concussion and who require further medical evaluation. Like other athletes, equestrians are dedicated and competitive and often minimize or deny concussion symptoms so that they can continue riding or participating in an event. The presence of trained personnel at equestrian events who can recognize a concussed athlete and prevent that individual from returning to riding and refer for further medical evaluation if needed is critical. As noted by Johnston and colleagues in the special issue, the following are some of the situations which merit referral for immediate and more extensive medical evaluation: deteriorating mental status, focal neurologic signs, extended loss of consciousness, and persisting headache and/or vomiting post-concussion. Furthermore, any equestrian who experiences persisting symptoms after concussion and/or experiences multiple concussions should be referred for neurological and neuropsychological evaluations.

When an equestrian sustains more than one concussion, it is important to examine factors that might be increasing that individual's concussion risk. According to Drs. Brooks and Bixby-Hammett, such factors might include failure to wear an approved helmet, use of a horse that is not adequately trained or capable of performing in a specific capacity, and/or equestrians attempting activities beyond their skill level. In 2000, the International Eventing Safety Committee proposed safety measures including on-site medical coverage sufficient for management of severe head trauma, minimizing response times for medical personnel to reach injured equestrians on cross-country courses, random drug testing of competitors, and inspection of helmets at all three-day events. In summary, educating equestrians, event personnel, and medical professionals who work with equestrians about concussion symptoms, recovery from concussion, and mandating safety measures such as those noted above are critical in reducing the high rate of head injury in equestrians.

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Doris Bixby
Hammett, MD:

Head injury is the cause of death in 60-90% of horse-related deaths in studies of the equestrian activities. Head injury is the diagnosis in 19.3% (*AMEA NEWS* Dec. 2001) of injured equestrians going to emergency rooms with 4.9% concussion diagnosis in these patients. There may be no field of medicine that is under greater change than the diagnosis, treatment and recommendation for return to play in sport injury concussions.

The issue of *Clinical Journal of Sports Medicine*, July 2001 11(3), Lippincott Williams, Wilkins, Inc., was a thematic issue devoted to sport injury concussion. Although the authors do not list horseback riding in the sports with chronic and repeated head injury, we feel our sport should be listed. We feel this subject is of greatest concern to the physicians who care for horse related injuries. We hope this summary will direct the concerned physician to the most recent developments in this field.



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United States Eventing Association (formerly USCTA)

SAFETY COMMITTEE 2001 Report

Julie Ballard, M.D., Chairman

MISSION

Keep abreast of current safety issues and recommend safety programs and standards. Monitor injuries that occur at competitions, compile statistics and evaluate trends.

The Safety Committee of the United States Eventing Association (USEA) meets every other month via teleconference and communicates frequently through an email group. The agenda includes review of recent injury reports from competitions as well as discussion of issues pertinent to eventing safety, including medical care at events, personal protective equipment, equestrian related injuries, etc.

One of the committee's ongoing missions is to ensure that competitions understand and are in compliance with USA Equestrian rules regarding safety in eventing. In 2001, we compiled a short version of the Safety Coordinator Manual that hopefully will be more user friendly for the Organizers, and completed a new edition of the more detailed Manual with input from experts around the country. We also created a resource team of medical experts to help Organizers formulate emergency plans for their events and assist them in obtaining coverage. We were thrilled when Mr.

Scott Ward of MEDTRONIC NEUROLOGICAL arranged for his company to donate \$10,000 for a fund to be used to pay for medical coverage at events that cannot afford to do so themselves.

Rusty Lowe continued his well-received safety talks as part of the Instructor Certification course curriculum and worked with the Education Committee to make CPR/First Aid training part of the certification process. We strongly support the Education Committee's desire to make safety a priority for the Certified Instructor. Reduced insurance rates for Certified Instructors as proposed by John Hart of American Equine Insurance Group will be a strong stimulus for the program.

The committee committed a significant amount of time reviewing the current medical literature concerning head injuries in equestrians especially as they relate to eventing and the current British rules restricting riders from competing after head injuries. An article was published in the USEA magazine to educate riders about the dangers of repeated head injuries. Although the committee initially considered a rule similar to the British rule, we had to acknowledge that enforcement under our current system would be difficult. We elected to continue educating riders on the subject of riding after injuries and do further work on the rider passport system as is in

current development by the FEI. However, the committee strongly believes that voluntary compliance by the rider, acknowledged with a signed statement stating that they are medically fit to compete, is going to be the best initial step. The International Olympic Committee is in the process of developing standards concerning return to play for all sports that will guide us in further addressing this issue.

The committee felt a huge relief when a rule requiring ASTM/SEI certified helmets was finally passed at the 2001 convention. A lot of hard work by many people went into the passage of this rule. It will be presented as an extraordinary rule change at the spring USA Equestrian board meeting, to take effect December 1, 2002. It will apply not only to USEA competitions but to USEA sponsored clinics also.

At the USEA convention in December, Rusty Lowe made an extraordinary effort to get the helmet manufacturers to participate in the Safety Committee's booth to show that there is a comfortable, attractive helmet that fits – for every rider. Over 200 Certified helmets were sold. Mr. Roy Burek from the Charles Owen Company fascinated everyone with his talk during the Open Safety Forum and we cannot thank him and his associates enough for their part in the success of this endeavor. In addition to letters of support

from all the manufacturers, special thanks should be given to International, Troxel and Eurocasque who sent products and catalogues for demonstration during the convention.

Copies of the USEA Safety Coordinators' Manual and Safety Coordinators' Job Description can be ordered from the USEA, 525 Old Waterford Rd., Leesburg, VA 20176; phone (703) 779-0440.

Julie Ballard, MD is an Emergency Physician from Newnan, GA who is an active farm owner, foxhunter, dressage and eventing rider. She is a Board Member of the AMEA, Chairperson of the United States Eventing Association Safety Committee, and a member of the USA Equestrian Safety Committee. Her other commitments to the sport are too many to list and we appreciate her dedication to safety within our sport and the AMEA.

Prompt Care for Brain Injury Results in Better Outcomes

By Geraldine Connors

According to the American Academy of Pediatrics, Committee on Sports Medicine and Fitness, approximately 20% of equestrian injuries are traumatic brain injuries (TBI), and 60% of all equestrian deaths are from TBI's. In fact TBI is the leading cause of death and disability in children and young adults in the United States. Because so many victims are young and their needs must be served for many years, brain injury and the disabilities they cause account for annual health care costs in the billions of dollars.

The challenge for those entrusted with the care of brain-injured individuals is to preserve neurological function in order to ensure optimal outcomes. Research has proven that most brain damage occurs after the initial injury, due to brain swelling. In most cases, this secondary damage can be controlled using scientific-evidence based assessment treatment guidelines.

The Brain Trauma Foundation's (BTF) mission is to improve the outcome of those with a TBI through education and clinical research. Founded in 1986, as a non-profit organization, BTF has developed evidence-based prehospital and in-hospital treatment *Guidelines for Severe Traumatic Brain Injury*. Independent research from trauma centers throughout the country confirms that when *Guidelines* are successfully incorporated into clinical treatment pathways, there is a reduction in mortality and patients are dis-

charged from the hospital with less neurologic disabilities.

BTF's educational programs train all levels of health care professionals, from the EMT to physicians and nurses, in the best treatment methods for TBI. With a multi-year grant from the National Highway Traffic Safety Administration (NHTSA) BTF developed a comprehensive educational program for all prehospital care providers in the U.S. based upon the *Guidelines for Prehospital Care of Traumatic Brain Injury*. The program be-

gan in 1998 and is currently in 21 states, with ten additional states receiving training in 2002.

In New York State, through funding from the Department of Health, BTF is implementing a model quality improvement program that educates medical professionals on the *Guidelines for the Management of Severe Traumatic Brain Injury*, provides them with access to a web-based database for clinical patient data entry, and based upon the reports from the data, works with the center individu-

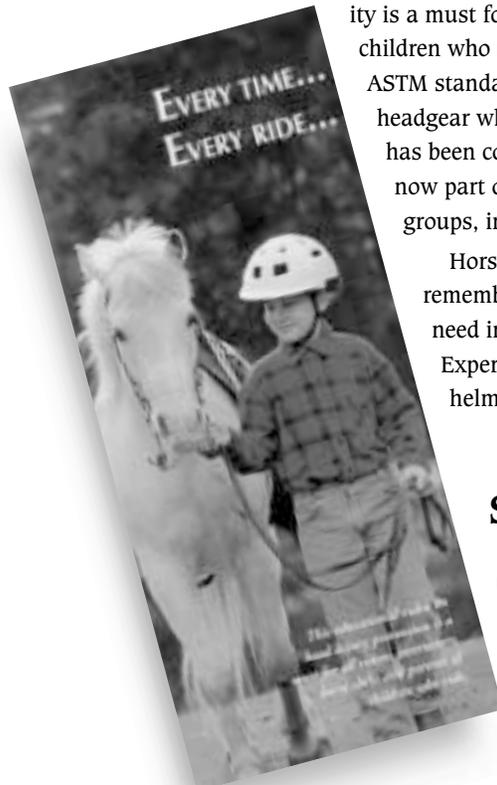
ally to identify areas for improvement in TBI care.

To learn more about the Brain Trauma Foundation's educational programs, or to review the *Guidelines*, please contact our website at www.braintrauma.org.

Geraldine Connors is the Director of Development for the Brain Trauma Foundation and can be contacted by e-mail address:

gconnors@braintrauma.org

Every Time...Every Ride...



This education video on preventing head injury in equestrian activity is a must for all riders, instructors, horse clubs and parents of children who ride. The 20-minute video demonstrates the need for ASTM standard/SEI-certified, properly fitted and secured protective headgear when mounted on a horse. Produced five years ago, it has been consistently well received by thousands of riders and is now part of the curriculum for many equestrian educational groups, instructor training organization, and riding clubs.

Horse activities have new participants of all ages. We must remember that these new members of the riding community need introduction to the use of ASTM/SEI-certified helmets. Experienced riders also need a reminder that they too use a helmet Every Time...Every Ride.

Doris Bixby Hammett, MD

\$15

**(5 or more at \$11 each
includes shipping)**

Send name, address and check or money order to:

**Washington State 4-H Foundation
7612 Pioneer Way
Puyallup, WA 98052-4998
E-mail: 4-hfound@wsu.edu**

CONGRATULATIONS CANADA!

The following notice was received regarding a significant rule change in Canada. The AMEA salutes Equine-Canada for their proactive rule.

On January 1, 2003, ASTM/SEI-approved helmets will be compulsory for juniors while mounted anywhere on the grounds of any Equine Canada-sanctioned competition. This rule change was endorsed by Jump Canada and the Canadian Equestrian Council at the recent Equine Canada Convention in Regina.

Why do we want to take this step? In the event of a serious blow to the head, the brain is actually hurled from one side of the skull to the other, causing brain injury. Research by both Equine Canada and the AHSA shows that in the event of a fall causing impact to the head, an ASTM/SEI helmet "decelerates the brain inside the skull, which can minimize concussion, trauma and damage. A special polystyrene lining inside the helmet absorbs much of the force of concussion and dissipates the force away from the skull." In the face of these facts, there can be no doubt that we must promote approved helmets for the safety of our riders; all riders are therefore strongly advised to wear approved helmets at all times while mounted.

Please look at the following two websites for more information on these helmets: www.equestrian.org/safety/helmet/slides/01.asp and www.equestrian.org/safety/helmetrule.asp.

The first is a slide presenta-

tion promoting the use of approved helmets and giving their manufacturers, and the second site has excellent pictures of approved helmets.

In order to give our members time to learn about these standards, and in order to reduce the financial impact on families, approved helmets will not be compulsory until January 1, 2003. However, all riders are urged to put their own safety first and start wearing only approved helmets right away.

Equine Canada will not recommend any particular brand of helmet by name, but does endorse any helmet bearing the seal of the North American ASTM/SEI or the British BSI. These helmet standards were tested for Equine Canada by an independent body, Biokentics and Associates. Their report, Review of Equestrian Headgear Standards, is available through the Equine Canada office.

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Who Cares About Safety Anyway?

It was interesting to listen to the comments of people who visited the North Carolina Horse Council (NCHC) Safety Exhibit at the Reeve-University of North Carolina (UNC) Healthcare Show last fall. Children skipped up to the booth and eagerly gathered up brochures and candy. Comments like "this is about the new hat rule" or I knew him, pointing to a picture of the late Bryan Jones (whose death motivated formation of the NCHC Safety Committee). A number of adult riders stopped to watch the videotapes "Rider Safety" and "Every Ride Every Time" and agreed to fill out a safety survey. Some had stories to tell about accidents from first hand experience, they were "safety converts". Show management was very supportive of our efforts. We were given a complementary "booth and help to set up". Then there were the most eager learners of all...the parents, who pay trainers to teach their children to ride safely. But who teaches the parents? I was delighted by the obviously "nonhorsey" dads who poured over the statistical charts and read literature about "When can my child ride". They asked questions "how do I pick out a competent trainer?" Good questions and open minds. All of these folks care about safety in varying degrees and seemed appreciative that the information came to them.

Insurance companies are very interested in safety, first aid and medical people are interested in safety just to name

a few more. I believe it is safe to say that anyone who wants to avoid the pain, suffering, expense and inconvenience of an injury is interested in at least reducing risk and or minimizing an injury or loss. Education and prevention programs work together to make riding a safer sport. Accidents can be minimized and handled more effectively through advance planning. So why not care about safety?

The NCHC Safety Committee is very interested in planning safety programs and seeks your support and participation. The committee is planning to sponsor a CPR course, a Safe Sharps Disposal Campaign and tailor other programs according to the results of the 2001 NCHC Safety Survey.

*Linda Mansmann, RN
Chairperson for the North Carolina Horse Council (NCHC)
Riders' Safety Committee*

Executive Director's Note:

Linda Mansmann, RN, and the NCHC Safety Committee are to be commended regarding their efforts. In a short time they are making change within their organization. The AMEA and some of its members have contributed significantly to their cause. *Congratulations!*

Keeping Youth Equestrian Safety Alive

The National Children's Center for Rural and Agricultural Health and Safety strives to enhance the health and safety of all children exposed to the hazards associated with agricultural work and rural environments. With funding from the federal Maternal and Child Health Bureau and the National Institute for Occupational Health and Safety, the Center serves as a catalyst to identify health and safety concerns of children living in rural communities.

Since assuming the responsibility of youth equestrian safety from the Harborview Center in the mid-1990s, the National Children's Center has continued to provide technical assistance and services to equestrian safety advocates on the national, state, and community level. While equestrian safety is only part of the overall program, it has been a unique and growing role.

Facts we have compiled mirror facts that the AMEA has compiled:

- A youth might be at equal risk of injury while dismounted as compared to being mounted on a horse.
- An approved and fitted equestrian helmet might reduce the likelihood of severe head trauma.
- A more experienced rider who rides more often might be at increased risk for injury.

- Youth under the age of 15 years represented 20% of the equestrian-related emergency department visits.

These facts and other resources can be found in a comprehensive professional resource packet developed by the Center. The packet can be downloaded from <http://research.marshfieldclinic.org/children/Resources/Equestrian/horses.htm> In addition, the staff is available to research the difficult questions and provide guidance to individuals and groups.

Initial discussions have been held with the AMEA and the Center to host a meeting of national and regional organizations involved with youth equestrian safety efforts. The purpose would be to assess current needs and chart the future of youth equestrian safety efforts. The time has come for greater coordination of efforts to promote equestrian safety with youth and families.

For additional information you can contact the National Children's Center toll free at 1-888-924-7233 or visit our Web site listed above.

*Chris Hanna, MPH
hannac@mflclin.edu*



Q Good afternoon, I read in your helmet fact sheet that bicycle helmets are not adequate for equestrian use. Could you please provide me with the reasons? I will be meeting with parents soon and would like to be able to discuss this with them.

*Rose Hudson
Youth Education Assistant
Courthouse, 201
Palmyra, MO 63461*

A Rose, this link will give you the answer to your question, without my having to rewrite a response! If you are still left with additional questions, by all means get back to me directly.

www.law.utexas.edu/dawson/amea/feb96nws.htm#bike

If it doesn't work, go to www.law.utexas.edu/dawson/ and on the left side box select American Medical Equestrian Association. Scroll down to the News list, and continue to February of 1996. The article is there.

In background, most bicycle crashes are face first over the handlebars. Equestrian crashes impact every part of the head, mostly on a level with the ears all the way around the head and face. The top of the head is the least impacted. If you look at most bike helmets, they

don't have much coverage at the back of the head, and most of their retention (fitting) systems are very unsophisticated, allowing the helmet to move too easily on the head in all directions.

This is particularly obvious in the ones under \$15.00, many of those falsely claiming to meet particular standards. Consumer Reports a few years ago found that 25% of helmets then on the market failed to meet ANY performance standards.

Thank you for your good question and concern!

Dru Malavase

***Rose communicated back that this information helped her tremendously and thanked us for our timely reply.*

Note

When a request for information is received, I try to forward the request to our "expert" or person(s) most knowledgeable about the subject. I also may forward the request to a more appropriate partner organization. For this request I would like to thank Dru along with Bob and Jan Dawson of AAHS who maintain our web-site. Please feel free to contact us at any time.

Supplemental Comments: Neuro-ophthalmological sequelae of horse-related accidents

We share the enthusiasm of Dr. Fleming and his colleagues (AMEA NEWS XII #4) to wear appropriate headgear when engaged in horse-related activities. We also recognize the excellent editorial note by Dr. Bixby-Hammett that appears in the December 2001 issue of the *News*. The purpose of these additional comments is to explain that despite the improvements in helmet construction and performance, no helmet can protect the brain against all impacts—especially acceleration-deceleration injuries.

The ASTM-SEI and the improved AS/NZS-3838 helmets provide about equal protection to deformation injuries of the skull and brain.¹ In closed head injuries, there is no deformation of skull or brain but cranial nerve palsies can occur

from seemingly mild head injuries.² In these instance, no helmet, shell liner and retention system can offer adequate deceleration at impact to prevent all nerve damage.

Acceleration-deceleration forces are difficult to assess but Davis Straub has described the importance of the time change in velocity to determine deceleration and hence the force applied to the head.²

If the time is increased by a factor of 2, the deceleration (thus the force) is decreased by one half; if the time is increased by a factor of 4, the force is reduced to 25% of what it would have been without a helmet. The useful term used to measure acceleration is a “g” (1 g is a unit of acceleration of 32 feet per second). A healthy human brain can generally withstand 400 g without ill effects. A force of 400 to 700

g will produce concussion with a variable period of unconsciousness and 700+ g will result in permanent brain damage.²

Certified ASTM-SEI and AS/NZS-3838 helmets are required to attenuate energy so that the instrumental head form inside the helmet being tested will read less than 300 g. All SEI-certified helmets “buy back” milliseconds to decelerate motion of the brain by crushing the liner in the helmet and by spreading the force over the area of the helmet’s shell. Human factors vary with velocity of the collision, angles of surfaces contacting one another, rigidity of the neck, etc. Helmets also provide several factors that may affect the number of milliseconds needed to decelerate the impact.

If one accepts this concept

of physics, it is quite clear that a helmet is of very little or no value to mitigate cranial nerve injuries. The nuclear and proximal fibers can also be damaged by deformation and crushing injuries to the skull and other portions of the brain via pressure or trauma to the brain stem and cranial nerves.

The fourth cranial nerve or Trochlear nerve is injured frequently because its small nucleus and short fibers are vulnerable to contusion and infarction as they rest against the edge of the tentorium.³ After independent consultation with six board-certified neurosurgeons and three neuro-ophthalmologists, there was agreement that more than one half of patients with traumatic fourth nerve palsies recover. A lesser number undergo demyelination, muscle atrophy and strabismus.

It is gratifying to learn of the united effort of Australians with others to promote a standard making body and to promote research on the protective qualities of equestrian headgear.

*George H. Koepke, MD
& Drusilla Malavase
ASTM Committee F8.53*

¹ McMillen A: member of the Australian Equestrian Protective Headgear Committee, manufacturer of AS/NZS-3838 and ASTM F 1163 Helmets

² Straub D, “SAHGA AIR TIMES”, Oct 2000

³ Wilkins RH, Rengachary SS, Neurosurgery, New York City, McGraw-Hill 1996 Vol 2:2655 and 109

Outstanding Equine Educator Recognized

AMEA would like to congratulate Pat Comerford from Pennsylvania State University, as the most recent recipient of the 2001 Paul Travis Memorial Equine Educator of the Year Award.

The American Association for Horsemanship Safety, Inc. presented the award to Pat at the American Youth Horse Council Annual Meetings in February.

Pat Comerford has been involved in the development of a number of innovative programs with youth horsemanship educational programming that



puts safety and youth first. Her leadership in the “Agricultural Safety” area has moved this educational programming area from a hand full of extension agents to being a national initiative.

Although her primary focus area includes Equine/youth extension (4-H) programs, she has also had extensive involvement with

equine adult extension programs and with undergraduate courses in equine studies. Pat’s success as an educator and a person are grounded in her commitment to people, her

high standards for integrity, and her ability to listen, learn and communicate. Pat has succeeded in gaining respect of her peers, clientele and administration due to her strong integrity, leadership skills, and the ability to follow projects through to completion. It is not a coincidence that AYHC has become a prominent voice in the equine industry during Pat’s tenure in the President position. We extend sincere congratulations to a leader in equine safety and education.

*Betsy Greene, PhD
Board of Directors, AMEA*

(ST-38) Statement on Bicycle Safety and the Promotion of Bicycle Helmet Use

by the American College of Surgeons

At its October 2001 meeting, the Board of Regents approved the following "Statement on Bicycle Safety and the Promotion of Bicycle Helmet Use." The statement was developed by the Subcommittee on Injury Prevention and Control of the College's Committee on Trauma.

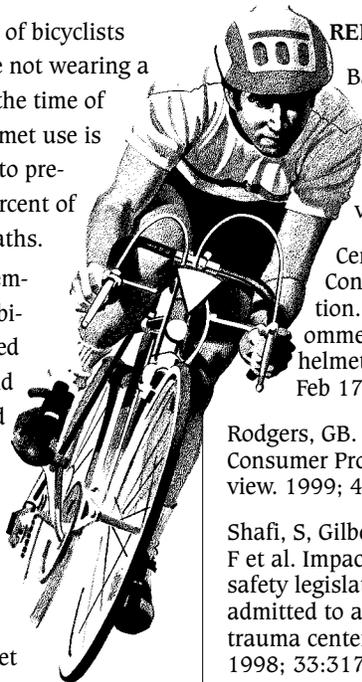
The American College of Surgeons and its Committee on Trauma recognizes the importance of injury prevention in the spectrum of care of the trauma patient, especially with regard to the prevention of traumatic brain injury. Cycling remains an important means of transportation and recreation; however, the bicycle rider can be at significant risk of serious injury.

The College recognizes the following facts:

- Approximately 800 people die and 17,000 are hospitalized in the United States due to bicycle-related injuries. Bicycle crashes are the fourth largest contributor to childhood injury costs and quality of life losses.
- Bicycle injuries account for the largest number of sports-related injuries treated in emergency departments.
- Bicycle helmets can reduce the risk of head injury by 85 percent. Bicyclists hospitalized with head injury are 20 times more likely to die as those without head injury.

- 98 percent of bicyclists killed were not wearing a helmet at the time of injury. Helmet use is estimated to prevent 75 percent of cycling deaths.
- As of November 2000, bicycle-related injuries and deaths had decreased in the 17 states that have youth bicycle helmet laws.
- Helmets can benefit adult riders as well children. As more helmet laws target youth, the proportion of adults comprising bicycle fatalities has risen from 32 percent in 1975 to 71 percent in 1999.
- Helmet laws are necessary. 43 percent of bicyclists report that they never wear a helmet, and of those who do, 44 percent report that they do so only because a law requires it.

Therefore, supported by these and other epidemiologic and outcomes data, the American College of Surgeons supports efforts to promote, enact and sustain universal bicycle helmet legislation.



REFERENCES

- Baker, SP, O'Neill, B, Ginsburg, M, Li, G. The Injury Fact Book, pp. 287-291, Oxford university press, 1992
- Centers for Disease Control and Prevention. Injury-control recommendations: Bicycle helmets. MMWR 1995 Feb 17; 44:1-17
- Rodgers, GB. Bike Helmets. Consumer Products Safety Review. 1999; 4 (1); 1-4
- Shafi, S, Gilbert, JC, Loghmanee, F et al. Impact of bicycle helmet safety legislation on children admitted to a regional pediatric trauma center. J Pediatr Surg 1998; 33:317-21
- Thomas, S, Acton, C, Nixon J, et al. Effectiveness of bicycle helmets in preventing head injury in children. BMJ 1994;308:173-6
- Thompson, R, Rivara, FP, Thompson, DC. A case-control study of the effectiveness of bicycle helmets. NEJM 1989; 320:1361-7
- Thompson, DC, Rivara, FP, Thompson, R. Effectiveness of bicycle helmets in preventing head injuries. JAMA 1996; 276: 1968-73
- Yelon, J, Harrigan, N, Evans, J. Bicycle Trauma: A Five Year Experience. Am Surg 1995; 61: 202-205

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Medical Editor's Comment

The AMEA has contacted The American College of Surgeons in order begin the process of developing a statement on equestrian safety and the promotion of ASTM/SEI harnessed equestrian helmet use by the Subcommittee on Injury Prevention and Control of the College's Committee on Trauma which we hope will be approved by the Board of Regents. We also invite the readers input. Contact the AMEA via e-mail at amea@charter.net.

John F. Stremple, M.D., F.A.C.S.

Executive Director's Note:

The AMEA does not recommend bicycle helmets for horseback riding. See: "Why not use a bicycle helmet for horseback riding?" AMEA NEWS VI #1 February 1996.

Statement on Bicycle Safety
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Sequelae of Horse Related Accidents
Keeping Youth Equestrian Safety Alive
Who Cares About Safety Anyway?
Congratulations, Canada!
Better Outcomes
Prompt Care for Brain Injury Results in
USFA Safety Committee 2001 Report
Sports Medicine Special Issue
Editorial Comment on *Clinical Journal of*

AMEA Vision
A Change is in the Air

INSIDE

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American Medical Equestrian Association



MEMBERSHIP APPLICATION



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