American Medical Equestrian Association
Safe Riders Foundation NEWS

Support for The Thinking Rider

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United States Pony Club 2002 Accident Report

Introduction

The United States Pony Club has reported accidents involving its members to the Safety Committee since 1979. Accidents are reported regardless of whether or not they result in injuries. Age, gender, rating, cause of accident, site of the accident, and if there is an injury, type of injury, body location, and treatment is tabulated by the Safety Committee. The Safety Committee uses this information to give an annual report to the Board of Governors, and if indicated, make recommendations aimed at providing the safest possible experience for our children.

A total of 127 accidents were reported nationally during United States Pony Club activities in the year 2002, of which 113 resulted in injuries. This is significantly higher than last year's (2001) total of 100 accidents reported. It is also very close to the high end of the range of accident reports from prior years (110 in 2000, 81 in 1999, 130 in 1998, and 106 in 1997). Since only 12 of the reported accidents occurred at Nationals (when we can be reasonably sure that all accidents are reported), it appears likely that the increase is real, and not just an artifact of conscientious reporting.

The charts below compare the percentages of children in each category (rating) for the years 1999 through 2002. The word "pony" is used loosely to refer to both horses and ponies.

UNR (Unrated) are not rated as to their riding ability. D1 rating requires a child to be able to mount and dismount correctly, sit in the saddle with a balanced seat, control the horse in a stop and turn while walking. D2 rating requires these controls at a trot, canter with the correct leads, riding in the open and jumping. The D3 rating requires emergency dismounts, riding without stirrups, backing the horse, pulley reins to stop a horse and changing speeds. C is an intermediate level of horsemanship with ability to ride independently and correctly on the flat, over fences, and in the open as well as beginning skill in teaching others horsemanship. The B, HA, and A ratings are national ratings. The A is divided into two parts: The HA, which covers horse management, teaching and training, and the A, which tests the riding phase. It includes being able to ride different horses at various stages of training, assessing each horse's level of schooling, recognizing problems, and formulating a long-term plan to improve the horse's training.

Percentage of Accidents by Ratings (1999-2002)

	Percent					
Rating	1999	2000	2001	2001 w/o Natls/Fest	2002	2002 Membership
Adult			1		6	
UNR	7	5	9	16	7	21
D1	12	15	11	19	11	14
D2	27	27	17	26	24	21
D3	12	24	10	12	10	15
C1	12	15	17	19	17	12
C2	14	10	11	3	12	9
C3	6	1	8	2	5	5
B	4	0	3	2	2	2
H, HA, A	0	3	3	2	1	1
N/A	5	0	10		7	

Ratings

The table above shows the percentage of accident reports for each of the last three years broken down by the ratings of pony clubbers involved in accidents. The relative USPC membership of each rating group for 2002 is also provided. Even though the rating was unknown for 8 of the accident reports, it still appears that the percentage of D's and Unrated's involved in accidents is comparable to 2001, although the percentage of D2's did increase substantially. The percentage of D's and Unrated's involved in accidents also continued to be less than 1999 and 2000, as well as being substantially less than 2001 with the reports from Nationals/Festival removed. The other rating groups also tended to have comparable percentages when comparing 2001 and 2002. What made

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MISSION 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.

AMEA/SRF Vision

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

As with many volunteer organizations, the quality of the organization can be negatively affected by the actions or inactions of a few members. When I offered to take this position with the AMEA (prior to the SRF merger), the previous person in my position left me with quite a bit work to bring this great organization back to a front burner in the horse world, as well as stimulating a re-dedication and re-motivation of the current and future members. Drs. Doris Bixby-Hammett, Julie Ballard and Janet Friesen encouraged me to take on this challenge to help this organization continue in a pro-active manner. (And, as some of you know, Doris does not take no for an answer!) Joe Carr said I could do it. My wife, Carolyn, said to try it out. The Board agreed. After some thought, I took on the challenge and began this mission.

In the past two or so years, many changes have occurred. Our membership has increased, donations have increased, our own website is up and running and receiving many hits daily for information, international relations with other organizations are ongoing (including the Japanese Medical Equestrian Association translation of our website for their use and Canadian Eventing's request for assistance with medical requirements at shows), relations with organizations within the US are increasing and we've merged with the Safe Rider's Foundation to assist injured riders. Protective equipment manufacturers have been involved and very supportive. We have representation on safety committees of most national equestrian organizations. The ***AMEA/SRF News*** circulation has increased as well as appeals to the medical and lay community. There are many other changes that I know I have forgotten so please forgive me for not listing all of them. Our work has and will continue to help save lives and minimize injury within equestrian sports.

I am very proud of what **WE** have achieved. In no way do I take full credit for all of this because it has taken teamwork, time and intestinal fortitude of many. Also, many of you have endured my enthusiasm, whining, begging, and haggling to assist us in our mission. Some have spent as much or more time than I have to keep us going. It is amazing to look back on what we have done and where we are going.

Unfortunately, with positives there are always negatives. There are organizations that should support us and don't, there are individuals who are very vocal critics, but are the first to claim association with us in print, and there are people within the AMEA/SRF that have the potential to do more, but don't. My personal negatives include poor administrative skills, lack of consistency, poor follow-ups and holding grudges when things don't go my way.

One of the biggest drawbacks of "doing what I do" is the time spent away from my family. By being Chair of the US Eventing Association Safety Committee, Co-Vice Chair of the US Equestrian Federation Safety Committee, Safety Coordinator and Medical officer at several events throughout the country, teaching clinics and giving talks, consulting, maintaining my "day job" as a Lieutenant/Paramedic with the Hoover Alabama Fire Department, and as Executive Director of the AMEA/SRF, does not leave much time for being a good husband and father. Something has to give.

I was taught that a good quality of a leader is to realize his limitations. Well, I have realized my limitations, and the AMEA/SRF has outgrown me. It is time for someone else to take the reins and work with us on improving administrative issues, membership relations, public relations, fund-raising and marketing. I titled this column "AMEA/SRF Vision" for me to help give my view as the "glasses of the organization" and it's now time to "change the glasses".

While looking for a person to take the reins, Amy Slayter offered her services. Amy has formal training and experience in all of the above areas. She is a former eventer with a love for equestrian sports and safety. An example of her passion was demonstrated when I was talk-

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2002 unusual, however, was the number of reported accidents that involved adults. While not a large percentage, the number of adults injured in 2002 deviates sharply from virtually no adults being injured in the preceding three years. Of the seven reported accidents involving adults, four were not horse-related (falls, suspected heart attack), two fell or were bucked off while riding, and one was kicked while holding a horse. While there is probably not much more that can be done to prevent spectator accidents (and these accidents may have gone unreported in the past), the other three serve as a reminder that adults, like pony clubbers, can be seriously hurt.

Comparing the 2002 accident percentages with the 2002 membership percentages shows that the Unrateds have a much lower percentage than might be expected, while the D1 percentage is what we would expect. We were concerned about the high percentage of accidents involving lower-rated pony clubbers in 2001 when reports from Nationals/Festival were excluded, but this pattern does not appear to have continued in 2002. The D2, C1, and C2 are higher than we would expect. This continues a trend that we have seen in the past four years, namely that our pony clubbers in the middle ratings (which account for about half the membership) and especially the D2s continue to be a challenge as this group consistently accounts for well over half the reported accidents.

Percentage of Accidents by Age (1999-2002)

	Percent				
Age	1999	2000	2001	2002	2002 Membership
5 & under	1	0	0	0	0
6 to 8	5	3	4	4	6
9 to 11	23	22	20	25	22
12 to 14	35	42	34	37	34
15 to 17	26	28	35	27	26
18 & over	10	5	7	7	12

Age

The table above shows the percentage of each year's accident reports for the last three years broken down by the ages of pony clubbers involved in accidents, along with the percentages of pony clubber ages reflected in the 2002 USPC membership. The 2002 accident percentages tend to reflect the membership percentages, with only the oldest group showing a much lower accident rate than would be expected, likely reflecting that these are usually our most experienced and well-educated members. Compared to the previous three years, the accident percentages for all the groups tend to fall within their historical range with the exception of the 9-11 age group which hit a four-year high. Prior Accident Reports have noted that the accident percentage for the 12-17 age group has tended to exceed their membership percentage, and have speculated that keeping them safe is a challenge, given that adolescents are more prone to balking at authority figures and to engage in risky behavior. Happily, 2002 did not continue this trend.

Percentage of Accidents by Activity (1999-2002)

	Percent			
Age	**1999**	**2000**	**2001**	**2002**
Unmounted			24	15
Rally	12	3	37	22
Cross Country	22	17	16	17
Jumping	17	26	21	28
Mounted Meeting	17	26	24	22
Games	14	3	9	11
Taking Lesson	0	0	11	8
Other	17	25	8	14

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ing to her about our very limited funding for salary and her initial response was, "That's o.k. for now; I just want to give something back to the sport."

The Board has graciously accepted my resignation as Executive Director, and has approved Amy as my successor. She and I will be working together for a smooth transition, and you will learn more about her in the next edition of the *News*. Updates will be on our website, also. Please give her your full support and join me in welcoming her aboard.

I would like to thank all of you who have helped me help this organization survive. It has not been an easy task, but there are many of you who have made it enjoyable and I could not have done it alone. I'm proud of what we have done together and will always cherish the experience that I have gained and the people we have helped.

With regards to my family, I want to tell you in print that I am going to have more time at home now to toss the ball, help ride the bikes without training wheels, help with homework, read together and be the husband/father that I should be. Julie, Russell and Carolyn — most importantly — thanks for **YOUR** support while I was working at home for the AMEA/SRF and you were doing the above.

I urge you to continue and/or increase your support of AMEA/SRF and look for some exciting growth and changes with Amy at the helm.

Everyone, please be safe.

Rusty

P.S. I'm not going too far away; the Board also approved my request to become a Board Member.

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Activity

Of the 127 accident reports in 2002, 109, or 86%, of them involved mounted activities; in 2001, 76% involved mounted activities. Of the mounted activity accidents, 22% were from rallies. This is much higher than 1999 and 2000 percentages, and while it is considerably lower than the 2001 percentage, it is likely that 2001 was abnormally high due to being a Nationals/Festival year. The Unmounted and Rally percentages are included in the above table, along with the percentages for the various mounted activities included in the accident reports and the percentages from 1999, 2000, and 2001. Each mounted percentage reflects the percentage that a particular activity represents of all the mounted activities; e.g., 17% of the mounted accidents occurred during cross-country. This was done so that the percentages associated with the mounted activities could be compared across years. The "jumping" activity excludes cross country jumping, while "mounted meeting" excludes all jumping, "games", and "taking lesson" reports. Although comparison between the years may be difficult due to changes in the way accident activities were tabulated, it comes as no great surprise that jumping fences remains the highest area of risk. 45 percent of the mounted accidents in 2002 were jumping-related. While this is a modest decrease from the 49% in 2001, it still appears to reflect an increasing trend, as jumping fences constituted 39% of the mounted accident reports in 1999 and 43% in 2000. Accident report percentages involving mounted meetings, games, and "taking lesson" were comparable to those of 2001. The accident reports for hacking/trail riding (4), polocrosse (3), as well as vaulting, dressage, etc., have been lumped under "Other" since their percentages are so low.

Percentage of Accidents by Location (1999-2002)

	Percent			
Location	**1999**	**2000**	**2001**	**2002**
Arena/Ring	37	53	27	50
Outside Course	40	26	42	23
Saddling	4	5	0	0
Trail	4	2	2	5
Pasture	11	5	0	2
Stall	0	0	8	5
Grooming	0	0	5	0
Other	6	8	16	15

Location

The location percentages for 2002 reflect a general return to the percentages seen in 2000, where reported accidents were much more likely to occur in an arena/ring, with an outside course being the second most likely. We do not have the data to tell us whether mounted activities were more likely to be held outside or in rings. However, a further analysis of the 2002 accident data revealed that causes such as falling/slipping, refusing, and bucking, were more likely to occur in a ring than outside. While this finding does not diminish the need to maintain tight control outside of the confines of a ring, even being within those confines does not allow us to relax. Accidents can still happen in a ring when pony clubbers are overfaced, or not in control. The incidence of pasture accidents remained low, continuing the trend seen from 1999 to 2001, while stall and grooming accidents (categorized as "saddling" in 1999 and 2000) also decreased. The "Other" percentage was about the same as 2001, and continued to be higher than 1999 and 2000. The "Other" category included accidents that occurred while mounting/dismounting in the barn area, working in the trailer area, and walking to/from the barn. These percentages serve as a reminder that accidents do happen everywhere, and that both pony clubbers and adults need to maintain a focus on circumstances on the ground that could lead to accidents away from "where the action is."

Percentage of Accidents by Causes (1999-2002)

	Percent							
Causes	1999	2000	2001	2002	2002 Unmntd	2002 Mounted	2002 Jumping	2002 Flat
Pony refused jump	17	8	10	5	0	5		
Pony fell or stumbled	17	9	11	14	1	13	27	14
Pony bucked/reared	15	27	12	15	0	15	8	36
Pony kicked rider	1	5	7	2	2	0		
Pony stepped on rider	0	0	4	4	2	2		
Pony running away, spooked, shied	15	12	12	20	1	19	8	30
Pony overjumped, knocked fence, broke fence	5	2	0	4	0	4	21	-
Rider out of position or not in control	19	24	12	18	0	18	23	8
Unrelated to riding	2	5	3	2	2	0		
Equipment failure	0	0	2	0	0	0	0	0
Other	7	6	19	12	5	7	10	12
Unrelated to horse	0	0	2	2	1	1		
N/A	0	0	6	2	1	1	1	0

Causes

The table above presents the accident cause percentages for 1999 through 2002. Percentages are also presented for accidents that occurred in 2002 while the pony clubber was unmounted and mounted, and while the pony clubber was mounted and either jumping or working on the flat. The cause percentages related to falling/stumbling, bucking, spooking, jumping badly, and being out of position all increased from 2001 to 2002. As might be expected falling/stumbling and being out of position were more likely to occur in a jumping situation. What was not as expected, however,

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was the substantially higher likelihood that an accident caused by bucking or spooking would occur when working on the flat rather than when jumping. This is true even if the accidents caused by jumping are excluded. Working on the flat is not an opportunity to relax and forget about concentrating on being safe. A further analysis of mounted injuries related to bucking/spooking and pony clubber age was done. It revealed that bucking/spooking was a cause for roughly 50% of the mounted accidents experienced by pony clubbers younger than 15, but was a cause for only 33% of the accidents if the pony clubber was 15 or older.

The "Other" causes dropped from 19% to 12%. The "Other" causes included accidents related to spectators falling, "flare-ups" of competitors' nagging injuries, an arena door closed unexpectedly, etc. There was only one report of an insect sting, and only one report of heat illness. The single case of heat illness represents a significant improvement over 2001, when there were eight reports. Hopefully, this is not a data anomaly, but rather a reflection of all the effort that has been put into educating pony clubbers, parents, and officials about the dangers of heat illness and how to avoid it. There were no "Equipment Failure" reports in 2002, and the "Pony kicked" percentage decreased substantially. All of the "Pony kicked" reports occurred while the victim was standing on the ground, and included being kicked while passing behind horse, a horse rearing and striking while being held, and being kicked by another horse while holding a different horse.

Percentage of Accidents by Area of Body Injured (1999-2002)

	Percent					
Area of Body Injured	1999	2000	2001	2002	2002 Unmounted	2002 Mounted
Head	14	12	19	22	2	20
Face	6	12	12	6	3	3
Dental	1	2	1	1	0	1
Neck	7	6	8	8	0	8
Dorsal/Lumber Spine	6	13	7	12	0	12
Chest/Ribs	3	0	3	2	0	2
Side	0	0	0	2	0	2
Collarbone	3	2	1	1	0	1
Shoulder	12	6	7	8	0	8
Upper Arm	3	0	0	5	2	3
Elbow	4	4	4	11	1	10
Forearm	7	7	11	9	1	8
Wrist/Hand/Fingers	25	12	13	12	3	9
Abdomen	0	0	2	2	1	1
Pelvis/Hip	12	12	6	9	0	9
Buttock	3	2	4	1	0	1
Thigh	3	2	1	3	1	2
Knee	10	3	5	9	4	5
Leg	3	9	7	6	0	6
Ankle/Foot/Toe	6	10	13	10	3	7
Other	0	0	5	1	1	0
N/A	0	0	2	4	1	3

Area of Body Injured

The table above presents the body area injury percentages for 1999 through 2002. Accidents that occurred in 2002 are also presented as unmounted and mounted. There were a total of 113 injured pony clubbers, but if more than one body area was injured, all injuries were included in these statistics. Since multiple body areas may have been affected by a single accident, the columns in this table will total more than 100.

Head injuries continued to increase, going from 19% in 2001 to 22% in 2002. Most of the head injuries involved mounted activities and highlight the need to wear an ASTM/SEI, fitted, secured helmet when riding. The head injuries that occurred when unmounted involved a jump standard falling off a trailer onto a volunteer's head, and a horse that reared and struck out, hitting the victim in the head and knocking her unconscious.

In general, the body area percentages did not differ markedly from 2001 to 2002, with the exception of facial injuries decreasing by 6%, and spinal, elbow, upper arm, and knee injuries each increasing by at least 4%. Unmounted injuries tended to be associated with the face, hand, knee, and foot, while mounted injuries most often involved the head, spine, arm (typically caused by putting out an arm to break a fall), and hip. The "Other Area" accident was the suspected heart attack.

Percentage of Accidents by Type of Injury (1999-2002)

	Percent					
Type of Injury	1999	2000	2001	2002	2002 Unmounted	2002 Mounted
Open Fracture	0	2	0	0	0	0
Closed Fracture	25	22	11	15	2	13
Concussion/ Unconscious	4	3	1	4	0	4
Concussion/ Conscious	9	6	9	8	1	7
Bruise/ Abrasion	33	39	44	50	9	41
Sprain/ Muscle Pull	17	18	11	16	1	15
Laceration/ No sutures	0	2	9	1	1	0
Laceration/ Sutures	6	4	1	3	1	2
Dislocation/ Separation	6	1	0	3	1	2
Internal Injuries	0	2	1	0	0	0
Shook Up	0	0	5	5	0	5

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Sunstroke/ Heat Exhaustion	3	0	10	1	0	1
Insect Bite/ Sting	0	0	5	1	1	0
Other	0	0	8	6	1	5

Type of Injury

The table above presents the injury type percentages for 1999 through 2002. Percentages are also presented for accidents (from 111 reports) that occurred in 2002 while the pony clubber was unmounted and mounted. These percentages may also total to more than 100.

The percentage of concussions increased from 2001 to 2002, which is consistent with the increase in the percentage of head injuries noted earlier. The association between injuries involving the head and the incidence of concussion was examined. While 20% of the mounted injuries involved the head, 60% of these injuries were associated with a concussion, a significant increase over 2001, when 38% were associated with a concussion. We can assume that the incidence of concussion would have been much higher had the pony clubbers not been wearing ASTM/SEI helmets that stayed on during the accident. If the percentage of concussions stays high, it may indicate that helmets are not being properly worn, or are continuing to be worn even after their efficacy has been compromised by previous hard impacts.

Fractures increased from 11% to 15%, most of which involved mounted activities, but also included the pony clubber that was kicked by a rearing horse and a spectator who fell. The percentage of sprains and muscle pulls also increased somewhat from 11% to 14%. Bruises/abrasions continued to be far and away the most common injury type, but there was no change between 2001 and 2002.

As mentioned earlier, sunstroke and heat exhaustion dropped dramatically from 10% in 2001 to 1% in 2001. This suggests that regional/local programs are doing a good job of educating their pony clubbers about heat-related risks, as well as taking steps to minimize that risk (e.g., making sure pony clubbers are hydrated, scheduling activities at cooler times of the day, etc.).

The "Other" category included possible neurological problems (seizure, paralysis, "tingly"), a chipped tooth, and stomach ache.

Percentage of Accidents by Type of Treatment (1999-2002)

	Percent					
Type of Treatment	1999	2000	2001	2002	2002 Unmounted	2002 Mounted
No Treatment	30	31	25	33	2	31
Treated on Grounds, returned to ride	2	6	27	20	6	14
Treated on Grounds, unable to return to ride	4	1	15	30	3	27
Taken to Hospital, able to return to ride	3	3	3	0	0	0
Taken to Hospital/MD, unable to return to ride	52	48	29	14	1	13
Hospitalized	0	2	0	2	2	0
Left, did not return	0	0	1	1	1	0
Expired	0	1	0	0	0	0

Treatment

The table above presents the injury treatment modality percentages for 1999 through 2002, with the data for 2002 separated into treatment of injuries that occurred unmounted and mounted. The percentage of accidents that did not involve treatment increased from 25% in 2001 to 33% in 2002. These accidents typically involved soreness and/or bruises; the pony clubbers were examined and no treatment was deemed necessary. The percentage of pony clubbers taken to a hospital or a doctor continued to show a dramatic drop, going from around 53% in 1999 and 2000 to 32% in 2001, and to 16% in 2002. These pony clubbers were instead treated on the grounds. Reasons for this shift from hospital to grounds might be due to the increased presence of medical personnel (including parents) at mounted activities, or that situations that could have led to a more serious injury were kept from escalating to that point (e.g., improved teaching, more suitable mounts). Regardless, this highlights that since most mounted activities take place without an EMT present, having an adult with at least some basic first aid training who can respond to a medical emergency may result in keeping the emergency from escalating into a life-threatening situation. Of course, an appropriate first-aid kit also needs to be available at every mounted activity.

Conclusions/Recommendations

All the pony clubbers in these accident reports were wearing helmets that meet ASTM/SEI standards, as required by Pony Club guidelines during all mounted activities. Compliance continues to be a non-issue and as a result, the incidence of head injuries has declined significantly since these guidelines have been in place. However, the increased percentage of concussions resulting from head injuries is a source of concern, and will need to be reassessed in future accident reports. In the meantime, we need to be aware of the importance of not only wearing a helmet, but also of being sure that the helmet is properly fitted and adjusted so that it will not move when impacted. We also need to be vigilant that pony clubbers are not wearing helmets that have sustained an impact and have not been refurbished by the manufacturer. Our riders are also wearing approved footwear when working around horses, thus contributing to the decline in foot and ankle injuries from the fifteen-year study. Approved footwear is a shoe that is securely fastened, and covers the entire foot and ankle with a sturdy material (preferably leather). The importance of wearing such footwear, whether mounted or unmounted, continues to be emphasized by the fact that the percentage of foot injuries over the past three years has remained at 10% or above. This percentage also underscores the need to be sure that pony clubbers are taught how to lead horses safely, and to maintain an awareness of where their feet are and where the horse's hooves are.

The use of vests is becoming increasingly commonplace, espe-

cially during cross-country schooling, although they are not mandated by USPC. Unlike helmets, there is no clear data on the level of protection vests actually afford. We cannot tell from the accident reports whether the vests provided protection. Only two of the reports involved chest/rib injuries. In these reports, the trauma was caused by impact with the ground. An adult on a trail ride was not wearing a vest and suffered broken ribs and a punctured lung, while a pony clubber wearing a vest had her horse flip on cross country and suffered a concussion and bruised ribs. None of the riders that had accidents involving a broken collarbone or the dorsal/lumbar region were reported wearing a vest, although it was noted in one report that the rider's cold weather clothing probably mitigated her injuries. The vast majority of parents of children who do wear vests believe that the vests are preventing more serious injuries, but this is anecdotal at best, and we do not have anywhere near sufficient data to address this. One concern that has been raised about vests is that they might contribute to heat-related injuries. However, since there was only one report of a rider suffering a heat-related injury and that rider was not wearing a vest, the data again does not offer much guidance. We will need more data to make any type of valid conclusions about the efficacy of vests in reducing serious injuries, and more consistency in pony clubbers wearing vests that meet the ASTM testing standards that have been established for vests.

While we may tend to think of jumping as a much riskier activity than riding on the flat, the 2001 accident data reflect that all mounted activities carry some element of risk. Granted, jumping activities did constitute 38% of the 2002 accident reports, so we need to have adequate supervision during jumping activities, and be sure that pony clubbers and their mounts are not being "overfaced" and asked to jump an obstacle for which they are not ready. However, with non-jumping mounted activities accounted for 47% of the accident reports, due primarily to horses bucking or spooking, we also need to be sure that our pony clubbers, especially the younger ones, are riding suitable "bombproof" mounts. The fact that unmounted activities accounted for 15% of injuries, down from 24% in 2001, indicates that we may be doing a better job of providing adequate supervision at unmounted meetings, and educating pony clubbers that horses can behave unpredictably when they feel frightened, surprised, or threatened. With the high percentages of accidents being seen in the D2 to C2 ratings, we need to make sure that we are providing pony clubbers with adequate supervision to make sure that their risk taking is kept to a minimum. In addition, we need to be sure that they're ready to meet all of the challenges that accompany the transition from being a novice to being an accomplished horseperson. The same could also be said for pony clubbers in the 12 to 17 age range.

Appropriate equipment is an area where everybody involved with pony club appears to be doing an excellent job. All riders involved in mounted accidents were wearing ASTM/SEI helmets, and those helmets stayed on. There were no reports of inappropriate footwear in any of the accidents, nor were there any reports of the usual equipment failures such as stirrup leather stitching coming undone, saddles slipping, reins breaking, etc. This reflects extremely well on the attention that is being paid to good horse management practices in the clubs' instructional programs, as well as the efforts of the horse management judges at rallies. Nonetheless, we must always be vigilant in trying to anticipate the unexpected while at the same time, always checking that helmets are ASTM/SEI and are properly secured, footwear meets the approved recommendations, girths are tight, stirrups are the right size, tack is supple, etc., etc., etc.

Another area that continued to go well according to the 2002 accident data was in the treatment of accidents on the grounds, and the continuing decline in the percentage of pony clubbers requiring hospital or physician care. For this to continue, we continue to recommended that each club encourage some of its parents to get first-aid training, and to have one or more of these parents present at every mounted meeting. An appropriate first-aid kit also needs to be available at every mounted meeting, and the kit should contain (at a minimum) the items described in the "Club Human First Aid Kit" section of the *Pony Club Safety Information Packet* (available through the USPC Bookstore). The adults responsible for supervising a mounted meeting should consider having a supply of ice to supplement the cold packs in the kit in dealing with swelling from a trauma and the effects of becoming overheated. Pony clubbers who are allergic to bee stings should always bring a "bee-sting kit", while pony clubbers suffering from asthma should always have access to an emergency breathing treatment. In general, there always needs to be a plan in place ahead of time should a medical emergency arise. We need to be aware of what might go wrong and be prepared to deal with it. In addition to the training and the first-aid kit, this entails having the pony clubber's medical release form at hand documenting their medical history and indicating conditions such as allergies, asthma, diabetes, etc. Prompt and appropriate interventions in these cases can prevent serious complications. The "Preparing for Emergencies" section of the *Pony Club Safety Information Packet* discusses a number of issues, along with providing several checklists, that need to be taken into consideration when planning and conducting any mounted meeting.

Finally, given the unusually high number of accidents reported in 2002, it was either a rough year or more of an effort was made to document incidents that caused concern. We would encourage everyone involved with pony club activities to continue to report such incidents, regardless of whether they resulted in an injury. Such data could provide everyone associated with pony club additional information not only about the circumstances of an accident that led to an injury, but also the things that might prevent an injury when an accident occurs.

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Dr. Baker received his PhD (1974) in Psychometrics from the University of North Carolina at Chapel Hill. He is a Senior Product Manager at MetaMetrics, Inc., doing research on measuring reading and mathematics achievement. He has been a 'pony club dad" for 20 years, and continues to be involved with Pony Club as a Chief Horse Management Judge and as a member of the Safety Committee.

Leading Causes of Accidents That Generate Litigation

When discussing litigation, it is necessary to point out that there are few frivolous lawsuits. There are severe penalties for lawyers bringing such suits and almost none are brought forward. The vast majority of accidents that *could* produce litigation do not. Most potential suits are never filed. Of those that are filed, the majority of the cases are resolved in the pretrial phase in favor of the defense; that is, in favor of the party being sued. There is always much publicity about the ridiculous jury awards for things like hot coffee burns. The sad fact is that when the appellate court reverses the award and rules against the plaintiff, it gets no media coverage.

Given the question, "What is the most common cause of accidents that you see in the cases with which you deal?" The answer was simple: people, both amateurs and professionals alike, take horse's behavior for granted. They believe at the moment of the accident that they can predict the horse's behavior, and are counting on it. Unfortunately, they cannot. Forty-four state legislatures have said as a matter of law that horses are unpredictable. In those states, at least, it is unwise to be counting on the horse's behavior. It is unwise to do so in any situation if it encourages one to put someone near or on a horse without the appropriate training or skills. It is silly to think that several hundred years of breeding will overcome 60 million years of genetic development.

But what does that mean in practice?

Do we have to assume that the good old school horse is not the good old school horse? Of course not, but we do need to redefine "good old school horse." *It does not mean* this horse is totally safe to be ridden by someone who knows nothing. *It does not mean* that the horse will never kick, never buck or spook. "Good school horse" means a horse that is immensely tolerant of a rider whose aids are not refined and who may make mistakes. The rider or handler still must follow correct procedures to reduce the likelihood of being injured, which means that he or she must have the skills the procedures require. An instructor must be sure to teach these procedures and skills and teach them in a context that is easy to remember. The instructor must also insist that the procedures be followed consistently. Lack of enforcement of stable procedures or rules is almost worse than no rules at all, and figures in frequently as a contributing factor of accidents.

Following are some of the incidents that have resulted in court proceedings. All were easily avoidable.

1. **Lungeing without an ASTM-SEI certified helmet** — Two girls suffered head injuries in separate accidents — In one incident two girls were lungeing one horse. One with the whip and one with the lunge line. In the other, a three-year-old horse had been sold to a 12-year-old girl with little experience and whose parents had no experience. She had only free-lunged a little in the round pen, but was sent home with an improper lunge line, a new horse, no experience, and the horse was to be housed in a place without an enclosure in which to lunge.

The United States Pony Club requires an ASTM-SEI certified helmet for lungeing. The United States Dressage Foundation also requires appropriate helmets in its manual on lungeing. We generally fear rope burns and entanglements; however, many injuries are blows to the head. Nice horses do kick when fresh. Lungeing is a skill which must be carefully taught and fully learned, and even then, it is a dangerous activity in which the horse's behavior is usually taken for granted.

2. **Unsupervised staging areas (e.g. warm up rings, waiting area for ring entry) for youth classes at shows** — one youngster walked into the back of another youngster's horse and suffered a life-altering brain injury. We can teach the youngsters, but it may take a while for the importance to sink in. During that time supervision is best. We cannot pass the responsibility on to parents. They haven't taken the lessons and often they are not present, even if they are at the show. Many parents actually add to the confusion, because they know nothing about horses. While one exhibitor has a parent, some of the rest may not. Many problems arise while a group is waiting to go in the gate for a class. Trainers may haul several youngsters and their horses to the show. They may not be able to supervise properly all riders at once. It is a reasonable expectation to count on a safe environment in which to show.

It is unrealistic to think that one trainer who has as much right to claim a place for the order in which the class will enter as anyone, should either have to police the in-gate to gain safe conditions for his or her students, or give up the desired place in the order of go.

3. **Assuming the old school pony will do what he always does**. A child riding her regular, 20+ year-old lesson pony is injured when the pony runs away on the trail. She had no training in an emergency stop (which would have included shortening her reins). Her instructor's certification did not address trail riding. She had no warm-up in the ring to reinforce control skills.

Small children are often accepted into a lesson program but never taught any emergency control skills. The lesson can be an expensive, glorified pony ride. The assumption is that the school pony will take care of the child. The same problem exists for instructors teaching older students on school horses. The lesson, the situation and the animal must

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be within the learned control skills of the student. Control skills, such as the ability to shorten reins in the process of an emergency stop, should be taught before mounting and practiced often. There is no reason for ever allowing a student to do something incorrectly or, to put it another way, for a student to be permitted to ride in a manner that someone will have to correct later. Horses are not play toys and should never be treated as such.

4. Instructors do not heed the warning signs when the school horse begins to do something different or odd. An instructor ignored the persistent head ducking of the lesson horse saying he was clearing his nose even though the horse did not usually do this and the rider had expressed concern. The horse bolted with the rider and injured her. Instructors, especially inexperienced instructors, can be too ready to attempt to explain away the behavior of a horse with a beginner aboard. This is dangerous because if a problem exists, the beginner cannot solve it. And, unless the student is on a lunge line, the instructor cannot either. An instructor should never attempt to talk a student through a problem without being sure the student has the necessary skills to follow the instructions.

5. Instructors do not professionally manage group lessons, and unwittingly place students in dangerous positions. A student arrived late to her beginners' group riding lesson having missed two prior lessons. In the ring without a warm-up her horse bucked, reared and fell over on her. When beginner lessons are offered as a set of group lessons for a reduced price, a student may miss one or two early lessons. In a group situation this may be dangerous. That student will have missed some important basics, and without individual help, will be behind. There is also a problem with students who are tardy. They will not have a warm-up and will be playing catch-up. A safe lesson program addresses these issues specifically. The responsibility cannot be placed on the student because at this level the student does not even have a reasonable frame of reference from which to make a judgment as to the risk. This situation should be anticipated and preparation made.

6. Private owners sometimes treat their horses as if they were four-wheelers or other recreational toy and make the horses available at parties or for use by guests. At a party several of horses were made available to the guests; during a guest-led trail ride all the children's horses ran off. A four-wheeler is sold with a safety video, helmet, and extensive instructions for its safe operation. One should expect no less for the horse. When comparing the horse to the four-wheeler, we would have to say that the horse would be a four-wheeler with defective brakes, steering, and accelerator. This is especially true in the case of a horse being ridden by a novice rider. The problem is that the owners are often also novices and it doesn't occur to them that we cannot always count on the behavior of these animals. "I just don't know what happened; he never did that before," are all too common words to hear after an accident.

When the situation was examined, there was one child on the ride who had never ridden before, and who did not even have permission from his parents to ride. The horses were used frequently by unknowledgeable adults. The bridles had various types of bits and the owner who had primarily tacked up the horses was not aware that any bridle or saddle went with any particular horse.

7. Horse people, even experienced ones, forget the horse's instincts. A guest ranch wrangler allows his ride to become split and the horse of one of the isolated experienced riders begins to rear and plunge, finally falling over on the rider, crushing her.

Horses are herd animals. Trail horses are still accustomed to staying with their group. This animal is a prey animal that has been on Earth for about 60 million years. Its instincts are its hard drive. We cannot rewrite the hard drive. The training is the software and it can crash with or without warning. Some software works better than others. Whenever the mental or physical pressure is sufficient, the software can crash and there is nothing left but the hard drive. This is when the training goes out the window and the horse is controlled by its instincts. It can happen completely or by degrees.

The equine activities statutes were designed to cover the activity sponsor and others in this situation — **unless there is negligent human intervention such as here, where the careless mistake of the wrangler set up the sequence that caused the horse to act as it did.**

Preventing the Common Litigation-Causing Accidents

The competent professional is automatically thinking through most of what he or she does. Mistakes usually happen when we act without thinking. Does the person getting ready to ride have the necessary skills to manage this situation? What criteria are required by this situation? If the answer begins with, "Smoky is real quiet; we don't have to worry about…," you are probably in trouble already. Smoky needs to be tolerant for a novice, but Smoky is still a horse, and Jimmy still needs basic control skills to go on a trail ride. It is better to have a good seat as well. Someone needs to be able to have seen Jimmy demonstrate his ability to use the necessary skills before he went on the trail ride. Otherwise we don't truly know if he had the skills.

Many, many accidents could be prevented if people would not treat their horses as toys or worse, as humans. Horses should not be loaned to people who do not know how to ride — not even for a few minutes.

If there is not an extra ASTM-SEI certified helmet that fits, then don't let the person ride, especially minors.

When taking someone else's children to a social gathering, if there are horses there, be sure that the children have the requisite skills and that ***parents have given permission for each child to participate***. A casual party is not a place for someone's first introduction to riding. It is a bad idea to use horses as entertainment at a party.

Many of the accidents that result in litigation could prob-

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ably have been prevented by appropriate procedures. Many horse professionals have not given much thought to the procedures that are lacking in their lesson or trail ride program. Too often the selection of the horse is the last careful act. No one remembers that the riders still have to have certain skills, appropriate protective gear, and that horses are "predictably unpredictable."

Staff training can be poor to nonexistent. Before a thought is given to training instructors to teach, they first should be taught how to both cause no harm and to prevent accidents. Everything else is second. It is not hard to train an entire staff to be accident-sensitive. It simply requires setting basic standards of behavior for the facility and upholding them. Consistency should be evident in the actions of the trainers and the instructors. When this happens, there is no problem getting the amateurs and youth to follow proper procedures. They will do what the trainers and instructors do.

The procedures for safe horse handling and basic horsemanship do not differ between disciplines. Horses are horses, whether dressage or cutting horses. They may differ in size, but they have not read the books. They know that they are all just horses. The only difference is that bigger horses can reach further when they kick.

JAN DAWSON is an attorney and President of the American Association for Horsemanship Safety Inc. She is the author of *Teaching Safe Horsemanship,* and through AAHS, has conducted many clinics teaching safe riding by the *Secure Seat* [sm] method. Jan and her husband Dr. Bob Dawson (a law professor at the University of Texas) are long time friends of the AMEA/SRF. For more information about AAHS, go to www.ameaonline.org and click on "links."

THANK YOU for editorial assistance

Dr. Josie Trott, UVM
Post Doctoral Researcher

AMEA/SRF Dues Structure Change

Effective May 1, 2004 membership dues for the AMEA/SRF will be:

Member

$ 50.00 (all categories now the same)

Organization

$100.00 (group or organization with 100 or fewer members)

Large Organization

$250.00 (large organization with staff and more than 100 members)

Clinic Donates to AMEA/SRF

Board Member Wendy Wergeles recently hosted a Jimmy Wofford Clinic at Cottonwood Ranch in Tres Pinos, CA, and suggested that participants make donations to the AMEA/SRF in lieu of audit or lunch fees. Dana Sachey was head lunch chef with Ellen Coudray assisting. The participants donated a total of $390 to AMEA/SRF! We appreciate their donation, and encourage other clinics to follow their example.

Rusty

CORRECTION:

In the last edition of the AMEA/SRF News on Page 12 **"Safety Seminar Held at US Equestrian Meeting,"** Rusty Lowe was incorrectly identified as being an *EMT-PA* and Dick London was incorrectly identified as being a *Radiologist and MD*. Rusty is an EMT-P (Paramedic) and Dick is an EMT-PA (Emergency Medical Technician and Physician's Assistant). We apologize for the error.

Rusty

Aging and Horseback Riding

NEWSWEEK (1/19/04) reported horseback riding over the age of 45 years was the third most common cause of athletic injury to females and the fourth most common cause in males. Horseback riding injuries to females were the third most common cause of athletic injury. This information was obtained from the Centers for Disease Control and the Sports Medicine Center, University of Rochester. For men, the activities listed in the first three spots were cycling, exercise, and fishing. For women, exercise and cycling ranked above horseback riding.

Equestrians are to be commended for continuing their sport over a long duration of time. While horseback riding did not appear in the six most frequent activities of all persons, it was quite common in older athletes who continued their sport into their mature years. Exercise is the key to avoiding many of the problems associated with aging — poor circulation, loss of muscle strength, weak bones, weight gain, loss of flexibility and poor balance. Regular exercise reduces the risk of heart disease, lowers blood pressure, controls diabetes, and is an antidote to depression. Older athletes are more motivated to do exercise if they have personal goals, the activity is an essential part of the lifestyle of the individual, and/or serves as a stress relief.

The age of peak athletic performance depends upon the key functional element required of the successful competitor. In events where flexibility is paramount (for example, gymnastics and brief swimming events) the top competitors are commonly adolescent. In aerobic events, performance usually peaks in the mid-twenties, as gains from prolonged training, improved mechanical skills and competitive experience are negated by decreases in maximal oxygen intake and flexibility. Because of a longer plateauing of muscle strength, performance in anaerobic events declines less steeply, and in pursuits such as golf and equitation, where experience is paramount, the best competitors are ages 30-40 years.[1]

Certain precautions can increase the safety of exercise for the older individual. The recommended dose of exercise should do no more than leave the participant pleasantly tired on the following day. Recovery processes proceed slowly, and vigorous training should thus be pursued on alternate days. Arthritis may be an issue for the older athlete, hindering their athletic abilities. Although the mechanism is unknown[2], nutritional supplements like glucosamine and chondroitin may reduce symptoms of arthritis.

The older athlete can prevent injury through pre activity conditioning and warm up. Muscles should be stretched before and after the ride. An appropriate ASTM/SEI fitted secured helmet should be worn. A protective vest when appropriate as well as supports such as neoprene compression sleeves on joints prone to injury may be advisable.

1 Shephard RJ, Aging and Exercise. School of Physical & Health Education & Department of Preventive Medicine & Biostatistics, Faculty of Medicine, University of Toronto, Toronto, Canada. Encyclopedia of Sports Medicine and Science. http://sportsci.org/encyc/agingex/agingex.html.

2 Raasch WG. Advice for the Aging Athlete. Associate Professor of Orthopaedic Surgery, Director of the Division of Sports Medicine, Medical College of Wisconsin and Froedtert Hospital. http://healthlink.mcw.edu/article/953058816.html

Doris Bixby Hammett, MD
AMEA/SRF BOD EMERITUS

AB, University of Kansas, Phi Beta Kappa; MD, University of Kansas, Alpha Omega Alpha
Practice of primary care Pediatrics 1951 to 1985 Waynesville, NC
Haywood County Pony Club: Founder and District Commissioner 1968-1972. USPC Equestrian Trails 1973-1977. Co-Chairman Headgear Committee 1977-1979, Safety Committee 1980 to present. Designated a USPC Legend at the 50th USPC annual meeting in January 2004.
Championed protective headgear for horseback riders for the USPC while serving on safety committee through mandating protective headgear in 1979. Obtained the support of the American Medical Association and the American Academy of Pediatrics and state medical societies and associations.
Conducted studies and wrote articles for medical books, publications, journals and the equestrian news media.
American Medical Equestrian Association founder; served as secretary and editor of AMEA News. *Member of Board of Directors since founding; currently serving as Emeritus.*

Wayne DuPage Horse Trials Announces BankOne Sponsorship and Continued Support

Wayne, IL
April 30, 2004

The American Medical Equestrian Association/Safe Riders Foundation is pleased to announce that the Wayne DuPage Horse Trials has secured BankOne as their first corporate sponsor. Wayne DuPage Horse Trials was in existence for many years hosting a One-Day Novice Level Event and in1987 Dan Kowalewski became organizer and the event has grown to host over 250 competitors offering Beginner Novice through Intermediate level. This year's horse trials will be held August 20-22 at the Lamplight Equestrian Center. Dressage will be held Friday and Saturday. Cross Country will be Saturday directly across from the Lamplight Equestrian Center at Pratt's Wayne Woods Forest Preserve. Sunday the competition will return to Lamplight Equestrian Center for Show Jumping.

Also being announced, Wayne DuPage Horse Trials' continued association with American Medical Equestrian Association/Safe Riders Foundation for a second year. A portion of each entry will be awarded to the AMEA/SRF for funding. Last year the Wayne DuPage Horse Trials donation provided over $1000 in funding for the AMEA/SRF.

For more information about the AMEA/SRF, please contact:

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An Epidemiological Look at Head Injuries in Young, Female Horseback Riders

Michele G. Yurgil, BSN, RN

Many people, young and old alike, engage in recreational or professional horseback riding. Between 12-15 million people in the U.S. ride horses every year. Furthermore, the American Horse Council estimates there are 1.9 million horse owners in the U.S. and 7.1 million Americans involved in the horse industry[1]. Despite this love for horses and passion for riding them, horseback riding can be a dangerous and potentially deadly sport. An in depth review of the literature suggests there are epidemiological patterns to horse riding injuries. Although injuries due to contact with horses occur at a rate of about 20 percent, most riding injuries occur during recreational or pleasure riding and involve young, female riders[2]. The most common cause of death and serious injury in all riders is head injury[3].

Some Important Variables in Equestrian Sports:

Who is at Risk?

Gender & Age

Current research regarding equestrian sports injuries state that females are more commonly injured than males while horseback riding. According to the 2001 National Electronic Injury Surveillance Data (NEISS), females are more likely to sustain riding injuries and seek medical treatment, whereas males are more likely to die as a result of injuries[4]. In an electronic interview with Dr. Doris Bixby Hammett, the doctor explained that more females ride horses and engage in equestrian activities than males; therefore, females sustain more injuries than males[5].

Since demographic data is difficult to obtain regarding the number of young women that ride horses, some hospital emergency rooms have conducted studies to determine the population at risk for equine-related traumas and found that the typical patient admitted to the hospital as a result of equestrian trauma was a young, female recreational rider[6]. Similarly, a three-year chart survey and questionnaire done at a regional trauma center in Chester County, Pennsylvania (a county with a large equine population), revealed that most equestrian injuries were to young female riders with a mean age of 27 years, +/- 11 years[7]. The latest National Electronic Injury Surveillance System (NEISS) data supports these findings. Of the 79,745 people treated in U.S. emergency rooms in 2001 for horse related injuries, 37.8 percent of all equestrian accident patients were in the 25-44 year old age range, and 17.8 percent were in the 5-14 year old age group with females making more visits to hospital emergency rooms than males[8].

Head Injuries

Most injuries with horses are due to falls. A fall may be described as the separation from the horse caused by bolting, shying, spooking or bucking. Since horses are unpredictable animals, falls are relatively common. Although fractures, sprains, and strains are common injuries, head injuries result in higher morbidity and mortality rates. The AMEA states, "the most common reason among riders for admissions to hospitals and death are head injuries[9]." In the Chester County, PA study, closed head injury was the most common diagnosis, as 60-80 percent of deaths secondary to equestrian trauma were caused by head injury[7]. Interestingly, the group at higher risk for injury were female recreational riders and riders not wearing a helmet. "Recreational equestrians had a higher admission rate than professional equestrians, and had a significantly higher head and spine injury rate than the professional group[10]."

The NEISS: An Important Surveillance Tool

The National Electronic Injury Surveillance System is a research tool used to track equestrian sports injuries. The NEISS is operated by the U.S. Consumer Product Safety Commission (CPSC), and for the past 30 years, it has been an instrumental public health research tool not only for the CPSC in the U.S., but globally as well. The CPSC performs epidemiological investigations based upon NEISS injury data gathered from hospital records. Statistics gathered in 2001 by the NEISS show "almost two thirds of rider deaths result from head injuries, and 19 percent of all equestrian injuries involve the head and face[8]. The NEISS has proven to be a valuable epidemiological tool to assist health care professionals in identifying those at risk for injury as well as determine the population most likely to benefit from prevention programs.

Implications: Preventing Head Injuries in Riders

Helmet Use

Prevention of head injuries in horseback riders is linked with consistent use of approved equestrian helmets. In the University of Kentucky Medical study of 75 equestrian trauma patients, the results of the study showed that head injury remains the predominant cause of death and that prevention of death from horse related accidents is synonymous with prevention of head injury[11].

Cost of Injury

Those who survive a traumatic brain injury are at risk for many long-term problems such as seizures, epilepsy, memory loss, and personality changes. As a result, the cost of injury can be crippling. According to the AMEA, long term, extended care costs may exceed $3 million[12]. Considering the relatively inexpensive cost of a helmet, it makes sense to invest in protective headgear.

Education

Safe handling and knowledge of horse behavior is paramount in preventing equestrian related injuries. The equestrian community needs to be educated regarding proper use of safety equipment and basic

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horsemanship safety. For instance, according to Dr. Bixby Hammett, every equestrian-related organization should have a safety committee that tracks and records injury. This way, future safety recommendations could be made[7] (personal communication, 2003). Since young women are most at risk for equestrian associated injuries, physicians, nurses, and other healthcare professionals need to educate patients about injury prevention. This could be offered at yearly gynecological examinations, or annual visits to the pediatrician for the younger riders.

In summary, for many individuals, horseback riding is a popular and enjoyable hobby or career choice. However, due to the unpredictable nature of horses, engaging in equine sports can result in severe injury or death. Epidemiologically, female riders have a higher incidence of becoming injured while engaging in equine activities than men. Moreover, traumatic head injuries can result in poor outcomes, guarded prognoses, or death. The cost and long-term care of a head injury can be financially catastrophic. Epidemiologists, nurses, physicians, and other healthcare professionals need to educate the public that prevention is key when engaging in equine sports. Whether you ride horses professionally or engage in occasional recreational riding, helmet use must be encouraged and/or mandated. Ongoing epidemiological studies are required in the area of equine sports, so that epidemiologists are better able to offer prevention programs to those in the equine community. Only through the use of continued surveillance and further studies to identify those at risk for horse injuries, can horseback riding be made safer.

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Michele Yurgil, RN *is a critical care nurse with 14 years experience, has been married for 11 years, owns a quarter horse gelding and a very smart mixed breed dog! Michele has ridden horses most of her life and had a very bad fall three years ago sustaining a fractured humerus. She credits her ASTM/SEI certified helmet as saving her life and regards rider education as being paramount.*

Because of her personal and professional experiences and while pursuing her Master's of Science degree in Nursing, Michele chose to write her required academic paper on this subject. Thanks are sent from Michele to Rusty Lowe for his assistance and Dr. Doris Bixby Hammett for sharing her knowledge and expertise and assisting in obtaining the information needed for her paper.

Michele states, "I wear my helmet every time I ride my horse, and I encourage those I ride with to do the same. As equestrians, we must lead by example; in doing so we may ultimately save someone's life, including our own."

The brochure, When Can My Child Ride A Horse, right, may be printed out from the AMEA/SRF website, www.ameaonline.org

How Much Weight?

A question which frequently arises in equestrian endeavors is the amount of weight a horse should or can carry. It is obvious that such added weight is a significant factor both in the ability of a horse to perform and the duration of such performance. This has, of course, long been recognized in the use of added weight to handicap Thoroughbred racehorses.

While an easy question to pose, it is a difficult question to answer. The ability of a horse to carry a given weight is a function of how long that additional weight is to be carried and at what speed.

Of singular importance is what measure or measures are to be used to determine optimum weight-carrying ability once an optimum has been defined. The optimum would have to include consideration of size, conformation, condition, age, the speed at which the work is to be done, and the duration of the work.

When the horse was a significant factor in travel and warfare, this question was of wide interest and importance. In the modern era the question arises most often, in my experience, with endurance and trail riding horses and horses used for police work. The matter is rarely mentioned in modern books and, if mentioned, the statement is usually that a horse can carry 20% of its own body weight.

Veterinary-Major Frederick Smith (later Major-General Sir Frederick Smith) addressed this question in *The Journal of Comparative Pathology and Therapeutics* in 1898 (Vol. XI, No. 4) and again in several editions of his *A Manual of Veterinary Physiology* (5th Ed. Eger. Chicago, 1921).

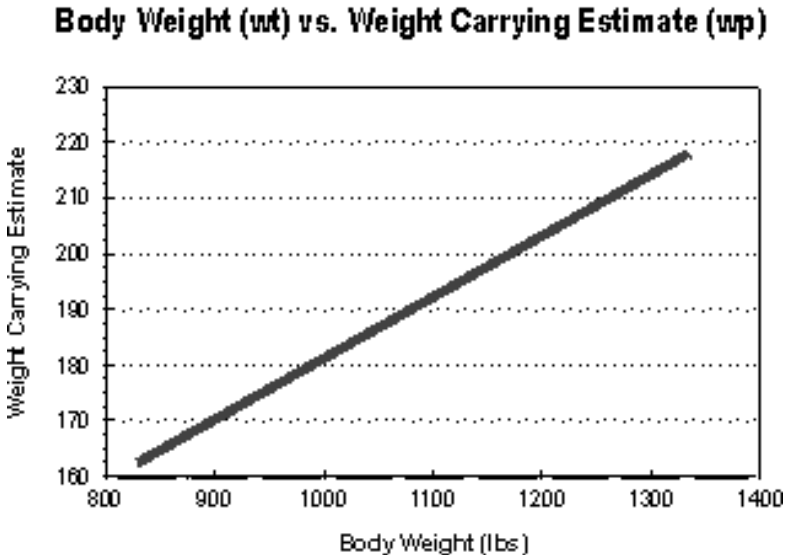
In the 1898 paper Smith used 136 horses weighing between 840 and 1,333 pounds. The weight-carrying ability of the horses was estimated, and the horses weighed after the estimates had been made. The estimation was done by two different "experts" in two different groups of light and heavy cavalry horses on two separate occasions.

The expert opinion assigned weight-carrying ability to the horses with the assumption that they would be doing hard work as hunters but no mention was made as to duration of work, so it is presumably that of a usual fox-hunting expedition.

The relationship of the weight-carrying estimates to the body weight of the horses is shown in Figure 1 with a linear regression line. Smith gives some individual values and some mean values making a clean statistical study impossible, but the trend is apparent. This shows that the expert evaluation of the weight-carrying ability of a horse correlated reasonably well with the body weight of the animal.

Smith believed that the experts' evaluation was not simply a one-to-one relationship of weight and weight-carrying ability but provides no details or support for that view. It would certainly appear that they were using a subjective estimate of body weight in making their estimates of weight-carrying ability.

Figure 1.



Smith concluded in 1898 that, "The rule to ascertain the carrying power of a horse is to divide his body weight by 5.757, and, if intended for only moderate work, add to this 28 lbs."

In 1921 Smith appeared to be less secure about these estimates and recommendations, giving 15-20% of body weight as the general rule. His opinion may well have been modified by awareness of the above average weight-carrying ability of ponies and donkeys.

Smith's work was pioneering and, though seriously flawed and subjective in modern scientific terms, may serve as a guide and stimulus for new work with modern scientific tools.

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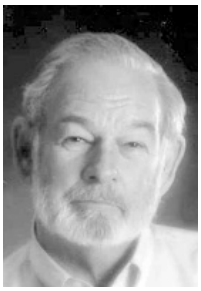

Dr. Rooney is diplomate emeritus of the American College of Veterinary Pathologists. He has taught and conducted research on horses at the College of Veterinary Medicine, University of Pennsylvania, New Bolton Center; the Equine Health Trust, Newmarket, England; The Royal Veterinary College, Sweden; and as the Director of the Gluck Equine Research Center, Department of Veterinary Science, University of Kentucky.

Dr. Rooney has worked and lectured throughout the United States and Canada as well as England, Ireland, Sweden, Germany, Italy, Switzerland, South Africa, Australia, and New Zealand. He is recognized as the authority on equine lameness and biomechanics.

He is the author of many scientific and popular articles on horses, including eight books on anatomy, pathology and orthopedic diseases.

Dr. Rooney recently retired as professor emeritus from the University of Kentucky and is presently living with his wife, Audrey, on the Wye River in Queen Anne's County, Maryland.

Asphyxiation in Horse Trailers

In the 1993-94 eventing season, two fatalities of eventers at USEA (formerly USCTA) recognized events occurred as a result of asphyxiation in the sleeping area of horse trailers. At the 1993 Prairie Creek (Texas) Horse Trials, a veterinarian used a kerosene heater in her horse trailer for heat at night. She died of asphyxiation. At the fall 1994 North Georgia Horse Trials, an eventer did not appear for her dressage test. Her stable neighbors noted that her horse had not been fed. After calling her parents, her locked trailer was opened and she was found to have a barbecue grill inside her trailer. She died of carbon monoxide poisoning. Unfortunately, fatalities continue to occur from the use of heaters in horse trailers a decade later.

Carbon monoxide is a product of the incomplete combustion of organic substances. Common sources of carbon monoxide exposure are motor vehicle exhaust, fumes from propane heaters, smoke from fires, barbecue grills (even without smoke) and fumes from malfunctioning or poorly ventilated shelters. Deaths have been reported from children traveling in the back of pickup trucks under a rigid closed canopy. Two young, healthy mountain climbers succumbed to carbon monoxide from fumes generated by a small cook stove in the enclosed space of their tent at 14,200 feet.

Carbon monoxide is a non-irritating, odorless, colorless, and tasteless gas with an affinity 200 to 250 times greater than oxygen for hemoglobin, the oxygen carrying protein of our blood. Carbon monoxide intoxication can cause injury to hypoxia-sensitive tissues such as the brain and the heart resulting in permanent injury or death. Carbon monoxide intoxication is the leading cause of death by poisoning in the United States and accounts for 3,800 deaths annually. Some authors have described carbon monoxide poisoning as an "occult epidemic." Many cases occur during the winter when barbecue grills are mistakenly used indoors for heating and cooking during power outages. The use of gas or propane heaters without proper ventilation is also a cause.

Horse trailers generally do not conform to the standards of the Recreation Vehicle Industry Association (RVIA). The RVIA standards require each fuel burning appliance to have a combustion air inlet and a flue gas outlet. Propane heaters such as the highly portable Coleman propane heater require two openings of 24 square inches to provide adequate oxygen intake and fuel exhaust. Typical horse trailer dressing rooms and gooseneck beds have windows but no vents. The dressing rooms are often used at horse shows as a place to sleep as well as change clothing. They are not designed as a place to use a heater without ventilation. (The same can be said of cooking with propane, kerosene, or Sterno.) Heaters utilize oxygen in combustion as well as generating carbon monoxide and other gases. Manufacturers of propane and kerosene heating units do not recommend they be used while asleep and only with adequate ventilation when awake. Members of the horse community should be aware of the extreme danger of using propane or kerosene heaters in horse trailers. A sleeping bag designed for cold weather exposure should be used instead.

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How does CO harm you?

Carbon monoxide is harmful when breathed because it displaces oxygen in the blood and deprives the heart, brain, and other vital organs of oxygen. Large amounts of CO can overcome you in minutes without warning — causing you to lose consciousness and suffocate.

Besides tightness across the chest, initial symptoms of CO poisoning may include headache, fatigue, dizziness, drowsiness, or nausea. Sudden chest pain may occur in people with angina. During prolonged or high exposures, symptoms may worsen and include vomiting, confusion, and collapse in addition to loss of consciousness and muscle weakness. Symptoms vary widely from person to person. CO poisoning may occur sooner in those most susceptible: young children, elderly people, people with lung or heart disease, people at high altitudes, or those who already have elevated CO blood levels, such as smokers. Also, CO poisoning poses a special risk to fetuses.

CO poisoning can be reversed if caught in time. But even if you recover, acute poisoning may result in permanent damage to the parts of your body that require a lot of oxygen such as the heart and brain. Significant reproductive risk is also linked to CO.

What can you do if you suspect someone has been poisoned?

When you suspect CO poisoning, promptly taking the following actions can save lives;

- Move the victim immediately to fresh air in an open area.
- Call 911 or another local emergency number for medical attention or assistance.
- Administer 100- percent oxygen using a tight-fitting mask if the victim is breathing.
- Administer cardiopulmonary resuscitated if the victim has stopped breathing.

Warning: You may be exposed to *fatal* levels of CO poisoning in a rescue attempt. Rescuers should be skilled at performing recovery operations and using recovery equipment. Employers should make sure that rescuers are not exposed to dangerous CO levels when performing rescue operations.

U.S. Department of Labor
Occupational Safety and Health
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2002

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INSIDE

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American Medical Equestrian Association
Safe Riders Foundation

MEMBERSHIP APPLICATION

American Medical Equestrian Association
Safe Riders Foundation

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