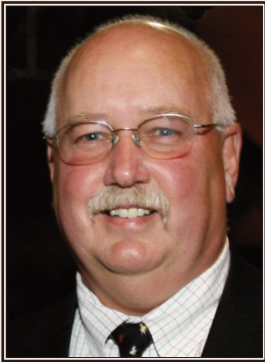

TOUCHING BASE WITH LARRY BRAMLAGE



Lawrence Bramlage, DVM, MS, Diplomate ACVS, is an internationally recognized equine orthopedic surgeon and a partner at Rood and Riddle Equine Hospital in Lexington, Ky. He is a 1975 graduate of Kansas State University. He received his Master of Sciences degree from The Ohio State University College of Veterinary Medicine, where his master's thesis was on the study of bone grafts and bone plating. Prior to joining Rood and Riddle, Dr. Bramlage was an associate professor of equine surgery at OSU. Dr. Bramlage has served as an American Association of Equine Practitioners On Call veterinarian since 1993 and covers such major events as the Triple Crown and Breeders Cup World Thoroughbred Championships. He focuses his veterinary career on the care of the race horse. He is a past president of AAEP and a member of The Jockey Club, as well as a recipient of its Jockey Club Gold Medal. His other honors include the Special Award of Merit from the British Equine Veterinary Association. Dr. Bramlage is a member of the board of director of Grayson-Jockey Club Research Foundation and was founding chairman of its Research Advisory Committee.

In your remarks at the Welfare and Safety of the Racehorse Summit, you described the fact that bone needs to be challenged to become stronger and that long gallops are good for the heart and lungs but do not enhance the strength of the skeleton. Are you of the opinion that the common routine of training Thoroughbreds, i. e., long gallops interspersed with fast works of five furlongs or so, is NOT the optimal way to prepare them for races of a mile or more?

There are many ways to train a horse, but the thing to remember is that beyond a furlong or so, the bone does not need volumes of work; in fact, it is damaging to the bone, and that damage has to be repaired. Bone trains to the "level" of work over a short distance, likely about a furlong from what we know, not the "volume." Heart and lungs, and to an extent muscle, need volumes of work, so you have to do both types of work. But, the ideal workout for bone would not be long gallops at the same speed. Beyond a furlong or so that just results in wear and tear on the bone. For the developing horse the ideal workout would be whatever volume of work you need to develop the heart and lungs, with one furlong a little faster than the rest of the work. That shows the bone where it has to go "next week" for the next level of exercise while still allowing the heart and lungs the work they need. For a "made" horse, the ideal workout would include some jogging, some galloping and a little stretch of faster work as well. Getting the volume of work in varying levels of work spreads the force seen by the bone over a larger range and does not result in the monotonous fatigue of the bone that results from long gallops at the same speed. For bone, short bursts of fast work are good. Large amount of the same level of work, no matter what level, result in cyclic damage to the bone.

The researcher Dr. David Nunamaker of New Bolton Center developed a training regimen of works ending in the sort of final furlong speed which you described as enhancing the strengthening of bone. He saw this as a way to reduce the incidence of bucked shins in two-year-olds. Is it your observation that young horses buck shins less routinely than in the past?

Yes, I do think we see fewer "bucked shins," but they also concern us less because we understand them better. We used to look at them as a disease. We now interpret them more correctly as a "sign" that is telling us that the horse can't keep up with the training regime he is being given. Since horses always recover from simple "bucked shins" you can almost regard them as a friendly sign to alter the training until the horse catches up, because the next thing to show up might be something that we can't recover from as completely.

Dr. Nunamaker also said that "Standardbreds are trained to race; Thoroughbreds are trained to train." What is your response to that generalization?

This is part of the epiphany that bone responds to the "level" of work it sees, not the amount. So, the bone needs some exposure to the "level" at which he will be expected to perform, but it doesn't take a lot. In fact, a lot of high level work is harmful, because it creates cyclic damage to the bone. Bone adaptation is work specific. The horse has to be exposed to the level of work at which the horse will perform, but it doesn't take a lot of exposure. In the work done by the necropsy program at U.C. Davis it showed that when you move from 25 high speed furlongs (furlongs fast enough to be considered a work, or a race in the horse's past performances) to 35 high speed furlongs in a two month period your chance of fatal musculo-skeletal injury doubles. So, you are best to do some high speed work, but there is harm in excess. You must use varied gaits, trot, gallop, breeze, in a high enough combined volume to train the heart and lungs, but it should not be all fast work as more than one high speed furlong in any one work session adds to the destruction of the bone, not the strength. This illustrates that training is a "science *and* an art" that requires combining these factors to train the horse enough to make him competitive; this certainly requires lots of exercise, but not to use any one level of work to an excess as the bones neither need, nor do they desire, this much monotony.

What are some of the types of injuries which can be repaired successfully today that confounded orthopedic surgeons earlier in your career?

Across the board, surgery is more practical. Fragments in joints were only removed as a last resort when I first started; now arthroscopic removal is the first line of defense. Horses with articular fractures who came back to race were an oddity when I was a young veterinarian; now they are barely a story. When we can reconstruct a fracture with screws and no joint surface was lost to the fracture we expect them to run and, more importantly, not lose any class. While we previously counted the year's successes as horses who returned to race, we now count how many Eclipse Awards, Classic Wins, and Breeders Cup Championships each year.

What do you consider the key strengths of the relationship between horse owners/trainers and equine researchers?

Many owners know that money invested in research eventually pays back in better horse health care; many don't. So that is the strength and the weakness of the interface.

How could equine research be moved ahead more rapidly?

More resources! We have the tools to get the money applied in the right place. The strength of the Grayson-Jockey Club research funding process is that it combines a filter for great science, with a filter for impact on the problems, and the industry to get the best projects undertaken. If we had more money we could accelerate the process, fund longer-range projects, and make progress faster.

The saving of Personal Ensign's racing career is perhaps the highest visibility case that has been reported on in your career. What are some of the other cases which you found particularly gratifying in terms of overcoming problems to help a patient return to a useful life?

This is a difficult question because to name a horse you really need an owner's permission, but I can give you some categories that I have a particularly warm feeling about. Two of the last three Horse of the Year winners have been my surgery patients; two winners and two seconds in the Kentucky Derby after surgery, five Eclipse Award winners last year for post-op patients, and four Breeders' Cup Champions this year are all gratifying.

Do you think there are enough young people going into both research and veterinary practice that the next generation will be as strong as today's?

Yes, there is plenty of talent in the pipeline. Once the "Baby Boomers" move on, the baton will be picked up by the Generation X, Y, Z etc. The emphasis will be different. I developed in the "technical" era of surgery in the horse. The next generation is going to grow up in the "biologic" era of equine practice.

Is the skill set required for use of moderate surgical equipment different from earlier equipment?

Yes, but so is the education. Many of us have talked about how we came along at the "golden age of opportunity" in equine surgery. General anesthesia had just become practical when my career started, making sophisticated surgery possible. The Japanese invented the fiberoptic light source which was the key to arthroscopic surgery and made that possible early in my career. The A-O Group had just developed internal fixation and techniques for people, and we were able to adapt the principles to the horse. I think my generation contributed well to equine surgery, but so will the next generation.

What are your interests outside your professional practice?

As strange as it may seem they are not so far afield from what I do day to day. My wife and I have a small farm and we raise some cattle, so mowing grass, fixing fence and feeding cattle occupy most of what's left of my spare time since we have no hired help and do it all ourselves. After a technical day at work, it is good to do some manual labor when you get home, and not have to talk on the phone to do it. But having grown up on a farm and having a father who worked in the cattle business, it is sort of like visiting my childhood, when I can leave my cell phone behind! We have three horses racing right now. They are particularly fun, especially if they get to the winner's circle occasionally. And, I am a real college football fan. Being a Kansas State graduate, it has been a particularly fun year this year.

But also being a graduate of The Ohio State University, where do your sports loyalties lie?

I don't think anyone who was as deeply immersed in the undergraduate experience as I was and who had as much fun going to college as I did ever replaces their Alma Mater. I follow Ohio State, and I don't have any tattoos, but if I did, it would be a "Power Cat" not a "Buckeye."

What are your favorite vacation spots?

South Africa is number one for me. There is nothing like the African wildlife. My favorite city to visit is Rome, my favorite beach site is Kauai, Hawaii, and Alaska in the summer is our best family vacation yet.

What is your favorite type of music?

I actually like all types of music. When I am driving I listen to Country when I have the radio on music; when I am working on a project, like answering these questions, I play classical music as white noise in the background. Also, my wife Marilyn and I like Broadway musicals and go to as many as we can fit in each year.

What are your children doing in their careers?

We have a daughter, Joey Marie, who is an attorney in Chicago, and a son Matthew, who was trained as a mechanical engineer, but works in the computer industry in "Silicon Valley" in California.