

THE LASIX QUESTION



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What is exercise-induced pulmonary hemorrhage?

A horse affected by exercise-induced pulmonary hemorrhage (EIPH)--a bleeder--suffers from ruptured blood vessels in the lungs during the stress of training or competing. This physiological reaction to strenuous exercise affects not just Thoroughbred racehorses, but all equine athletes, including polo ponies, three-day event horses, barrel racers and steeplechasers.¹ The severity of the condition is determined by the amount of blood in the horse's trachea, and graded on a scale of 0 to 4. In a horse graded as a 4, there is blood covering the entire trachea and performance is severely affected; when the horse is in crisis, there is blood draining from one or both nostrils (epistaxis). In those cases, the condition can be critical. Some 60% of sudden deaths in racing have been attributed to pulmonary hemorrhage.² Studies have proven that the vast majority of racehorses will suffer EIPH at some point during their careers, and that even a grade 2 bleeding episode can affect a horse's performance by as many as six lengths³



First documented in the early 1800s, EIPH had long been suspected of having a negative impact on a racehorse's ability to perform at its peak level. But, until the early 1970s, the only symptom of EIPH beyond the subpar performance was epistaxis. That changed with the introduction of the fiberoptic endoscope more than 40 years ago, which, for the first time, allowed a veterinarian to examine the horse's upper respiratory system, and determine the origin and severity of the bleeding. Not only did this ground-breaking advance in diagnostics prove that the blood originated from the lungs, but also demonstrated that EIPH was prevalent even when epistaxis was not evident.

Dr. Ken Hinchcliff, the recognized leader in EIPH research, was lead author on studies conducted in Australia and South Africa, which proved definitively that EIPH affects the majority of Thoroughbred racehorses. The results from his Australian study, released in 2005, determined that 55% of horses suffered some level of EIPH, and was the first to clearly demonstrate the connection between EIPH and poor performance.³ Subsequent studies have found that the prevalence of EIPH is even higher. If you scope a horse after three successive strenuous workouts, nearly 100% will be diagnosed with EIPH by the third endoscopic examination.⁴

Dr. Hinchcliff then set out to determine if the most common treatment for EIPH, the administration of Lasix, was, in fact, effective. The results of the study, conducted under racing conditions in South Africa, were published in the Journal of the American Veterinary Medical Association in July of 2009.² Not only was the study able to quantify the impact on performance with regard to the severity of the EIPH, but proved that Lasix was highly effective in alleviating the condition. A small percentage of the 152 horses involved in the study evidenced the highest degree of bleeding without Lasix-- grades 3 and 4--but not a single horse evidenced a grade higher than 2 after the administration of Lasix. Twice as many horses were completely unaffected by EIPH when treated with Lasix as when racing without it.

The scientific evidence is irrefutable. Horses bleed. Lasix works. But, despite this evidence, many in our industry are staunchly opposed to the use of Lasix. What are the common objections to using an effective medication to treat a condition that is at minimum uncomfortable and distressing for the horse, and, at its worst, fatal?

Separating Fact from Conjecture...

1) Racing in the U.S. survived without Lasix for hundreds of years. Why do we need it now?

• Lasix wasn't even approved for veterinary use until 1967.⁵ Just a few years later came the introduction of the fiberoptic endoscope, an equine medical advancement that finally allowed the definitive diagnosis of EIPH. Anecdotal evidence that Lasix had the potential to treat EIPH led to clinical trials in the 1970s. States began permitting its therapeutic raceday use during that decade.

• There have been many, many advances in medical science, in technology, in the sport of horse racing, in everyday life, that were not available 50 or 100 or 200 years ago.

- penicillin
- women are warned not to smoke or drink during pregnancy
- the internet
- football players are aggressively protected from concussion syndrome
- cell phones and tablets
- seatbelts and air bags are mandatory by law
- the starting gate
- young children must ride in car seats and wear bike helmets
- nuclear scintigraphy
- low-dose aspirin is a daily regimen to prevent heart attacks and strokes
etc, etc...



• "Because we got along without them," is no argument for not taking advantage of these advancements.

2) They race without Lasix in Europe, in Hong Kong, in Japan. Why do we need it in the U.S.?

• Outside of the United States, the majority of racing jurisdictions still use archaic medical science when it comes to an official diagnosis of EIPH.⁶ If a horse does not show evidence of epistaxis (bleeding from one or both nostrils), they are not considered bleeders. With the modern technology available to aid in diagnosis, this is the medical equivalent of refusing to use an X-ray machine to diagnose fractures. It is irresponsible to wait for a horse to be in crisis to make a diagnosis.

• Outside the United States, the majority of racing jurisdictions fail to officially acknowledge the prevalence of EIPH, despite the incontrovertible evidence that it affects the majority of horses. A recent study in Hong Kong determined that 63% of the horses involved suffered EIPH after a race, and 54% suffered EIPH after a workout.⁷ Lasix is prohibited in training and racing in Hong Kong, but horsemen in Europe and Australia are permitted to use Lasix during training. The trainers acknowledge its effectiveness in treating EIPH--the ONLY motivation for using Lasix during morning workouts is the alleviation of EIPH.

"Certainly, we do not want 4% of our horses to bleed from the nose, like they do in Hong Kong, when a simple, safe and effective preventative, Lasix, will prevent this severe pathological condition which requires serious medical treatment and extended rest." Dr. Clara Fenger, DVM, Phd, TDN Op/Ed, Aug., 2014.

- To treat EIPH, European trainers have been known to use medications other than Lasix in competition.



Nick Henderson had a positive test for the medication Tranexamic Acid in 2009 with a steeplechase horse owned by The Queen. Henderson's response to the positive test? "I was very surprised," he told *The Guardian*. "I didn't think we had administered anything terribly illegal..." He told a panel of the Royal College of Veterinary Services convened to hear the case that "plenty of trainers" were using the banned medication, and concluded, "The horse was not doped. She was given

a drug for her own benefit."⁸

3) Human athletes are not allowed to compete on medication. Why would we race horses on medication?

- This is a common misconception. Amateur and professional athletes are banned from competing on certain medications--steroids, human growth hormone and illegal narcotics top the list of specifically banned substances. But there is a laundry list of medications that are permitted in competition. Quarterback Tony Romo took pain-killing injections to his ribs DURING four straight games at the beginning of the 2011 season.⁹ When pro tennis player Novak Djokovic beat Rafael Nadal in the U.S. Open final that year, he was popping pain pills DURING THE MATCH.¹⁰ Andy Murray had to call for painkillers five games into the quarterfinals of the 2014 Miami Masters.¹¹



- Olympic athletes, long perceived as being completely drug free, have a lengthy list of approved medications from the World Anti-Doping Agency that can be used on the day of competition, including:

That daily low-dose regimen of aspirin you take every day to prevent heart attacks and strokes? You couldn't give it to a racehorse within 96 hours of competing, or you'd end up with a positive test.

anesthetics such as novocaine, xylocaine and even adrenaline; antidepressants; antihistamines; asthma drugs; caffeine; muscle relaxers; pain relievers and anti-inflammatories; sedatives; and ulcer medications. Even cortisone injections are permitted on the day of competition. The U.S. Anti-Doping

Agency grants Therapeutic Use Exemptions to athletes for any prohibited substance, including Lasix, if there are sufficient grounds for therapeutic use.¹² (A list of WADA's approved drugs is attached).

- The medications approved for use in competition in human athletics are not nearly as tightly controlled as in Thoroughbred racing. The raceday use of Lasix is highly regulated. It must be administered no less than four hours prior to a race, in strictly controlled dosages, by a licensed veterinarian. In New York, Lasix is administered by veterinarians employed by the New York Racing Association, eliminating the practice of having a private veterinarian in a horse's stall on race day. This provision is one of the key elements of the national Uniform Medication Program.

"Virtually no member of a baseball, basketball or football team in America could pass the post-race drug testing that racehorses pass every day. In New York, more than 40% of the equine competitors are tested after each and every race. The testing standards in Thoroughbred racing are second to none." NYTHA presentation for NY State Senate Racing Committee hearing

- In a statement released in 2011, the Association of Racing Commissioners International revealed, “The ‘anti-doping’ standards in horse racing are more aggressive than those deployed in the Olympics. In fact, the worldwide annual drug testing budget of the World Anti-Doping Agency (WADA) is dwarfed considerably by the collective investment made by the state racing commissions in just one country, the United States. U.S. state racing commissions commit over \$35 million annually to directly test for medication violations. By comparison, the World Anti-Doping Agency’s world-wide effort relies on \$26 million in funding. The financial statements published on their website reveal that, of that amount, \$1.6 million is specifically earmarked for testing fees.”¹³



- According to the RCI, “In 2010, 324,215 biological samples were taken and tested. Lab results show that 99.5% of those samples were found to contain no foreign or prohibited substance. In other words, only 1/2 of 1% of samples tested was found to have contained a substance in violation of the rules. An examination of racing commission data also reveals that, in those relatively rare instances when a violation of a medication rule does occur, most were associated with a legal substance administered in the normal course of equine care by a licensed veterinarian and

“Horse racing’s anti-doping program tests for more substances at deeper levels than any other professional sport. These facts are inexplicably ignored by many who wish to opine on this matter and have been successful in drawing attention to their assertions by spinning negative headlines about the sport. The perception created is not consistent with the facts.” Ed Martin, RCI “Drugs in U.S. Racing - 2010

cannot be characterized as ‘horse doping’ or as indicative of a ‘drugging.’ Those substances that could legitimately be construed as a ‘horse doping’ (RCI Classification Categories I and II) represent just 47 instances out of 324,215 samples tested in 2010. That represents 0.015% of all samples tested. The use of terms like ‘rampant,’ ‘endemic,’ ‘widespread,’ ‘chemical warfare,’ or ‘racing’s drug addiction’ do the sport and the tens of thousands of families who rely on it a great disservice.”¹⁴ U.S. racing commissions sent 340,932 biological samples to professional drug testing laboratories in 2013; 99.65% of those samples were found to have no violation.¹⁵

4) Lasix is a performance-enhancing drug.

- Much has been made of the effects of weight loss on an athlete’s performance. The weight loss effect of



Lasix is comparable to the weight loss a horse might experience if denied hay and water for 24 to 48 hours before a race, as was often the practice before

The weight loss effect of Lasix mirrors what a horse might experience if denied hay and water for 24 to 48 hours before a race. Is taking away a horse’s hay and water for even a half day humane?

the advent of Lasix. While Lasix use is strictly controlled, there is no oversight for if or when a trainer takes away a horse's

nutrients. Will this necessitate the introduction of security to ensure that all trainers observe the same protocol? Will it lead to headlines proclaiming, “Horses Starved and Dehydrated Before They Race”?

- Lasix does not allow a horse to perform beyond its peak natural ability. It alleviates, but does not eliminate, a condition that hampers peak performance. Anecdotally, historically and scientifically, it has been demonstrated clearly that EIPH adversely affects performance. Horses run slower when they bleed. Anecdotally, historically and scientifically, it has been demonstrated clearly that Lasix is significantly effective in minimizing EIPH. The refusal to connect these dots is the height of, “Don’t confuse us with the facts.”

“No amount of Lasix will make a horse run past his ability.”²⁸ Dr. Scott Palmer, equine medical director for New York State and past president of the AAEP

- Even those who once had been staunchly opposed to Lasix have recognized that it is a performance restorer, not an enhancer. A 1988 *Washington Post* article entitled, “Handlers Hope Lasix Will Help Private Terms Regain Lost Form,” documented how GI Wood Memorial winner Private Terms’ form deteriorated due to EIPH, then was restored when he was put on a Lasix regimen. According to the article, trainer Charlie Hadry, “reiterated his belief that the use of Lasix in no way diminishes Private Terms’ status as a racehorse of high quality. It’s not a stimulant, Hadry said, but a drug that rids the body of surplus fluids and simply will allow Private Terms to run to his potential.” Then 80, the late Stuart Janney Jr., owner/breeder of Private Terms, and of the great Ruffian, was quoted in the article, saying, “I know I was very much opposed to using



Lasix or anything else at one time. But I’ve had [bleeding] happen so many times to so many of my horses that I don’t feel that way any more. I’ve gotten to be an old man, and I even have to take Lasix once in a while.”¹⁶

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5) Why is there such widespread use of Lasix?

- There is a cumulative effect that can increase the severity of EIPH each time it occurs. An analogy would be metal fatigue in airplane wings. The airplane is subject to ongoing stress that creates tiny fractures in the wings. Over time, as the stress continues, the fractures worsen, and can lead to catastrophic failure. “In the long term, reducing the severity of bouts of EIPH is beneficial to the health of the horse’s lungs. The presence of blood in them has been shown to induce permanent changes in their tissue structure,” then-AAEP President Dr. Robert D. Lewis stated in a 1995 press release.¹⁷

“People who are advocating the elimination of [Lasix] have to explain why they want to deny a horse medicine that has been shown to be beneficial to the horse’s health and well-being.”²⁹ Michael Davis, physiological sciences professor and Oxle Endowed Chair in Equine Sports Medicine at Oklahoma State University’s Center for Veterinary Health Sciences.

- Anthony Verderosa, Chief Examining Veterinarian for the New York Racing Association (NYRA), reported that episodes of epistaxis, the most severe form of EIPH--when a horse is in crisis and bleeding from the nostrils--was IMMEDIATELY reduced nearly 80% in New York after Lasix was legalized in the state in 1995, and has remained at the lower level in the two decades since.²⁷

- Speaking during the “International Summit on Race Day Medication, EIPH and the Racehorse” in 2011,



Graham Motion and Christophe Clement, two of the four trainers invited to speak, voiced the opinion that it is necessary to be proactive in the prophylactic treatment of EIPH. “I certainly breeze some of the 2-year-olds on Lasix, even if they haven’t been bleeding previously,” said Motion, who has not had a single positive test since taking out his trainer’s license in 1993. “Prevention is important--I don’t want them to start bleeding that early.” Clement, who also boasts a pristine record, remarked, “If a horse bleeds, right away, you’ve got a situation. You’ve got to do everything you can. You can’t avoid bleeding--it’s a fact of life. What you can avoid is it becoming chronic.” It should

be noted that both Motion and Clement are originally from Europe.¹⁸

- Proper maintenance of EIPH is key to maintaining the health of the equine respiratory system, and is in the best interest of the horse.

6) Does Lasix mask other medications?

- During the “International Summit on Race Day Medication, EIPH and the Racehorse,” Dr. Richard Sams, PhD, director of HFL Sport Science Inc. in Lexington, stated that, after the American Association of Equine Practitioners came up with a universally accepted standard of practice for Lasix in 1983--recommending that it be administered intravenously and at a time four hours prior to a race--the concern that Lasix could affect the detectability of other medications was addressed. “That concern is largely eliminated when [Lasix] is administered in a tightly controlled environment, as it is in the United States,” Dr. Sams said. He concluded, “I don’t refer to [Lasix] as a masking agent. Its impact on post-race testing is not very significant.”¹⁸

“Furosemide does not interfere with drug detection, provided that it is administered at least four hours prior to racing and within an intravenous dose range of 250 to 500 mgs. New, ultra-sensitive instrumental testing, combined with the regulatory control outlined above, precludes the possibility of furosemide interference with drug testing.”

Dr. George Maylin, director of the New York State Racing and Wagering Board's Equine Drug Testing Program at Morrisville State College.

- In an article in *Daily Racing Form*, Steven Crist said, “The whole issue of whether Lasix can mask other drugs was a valid concern a generation ago--perhaps the best reason to oppose its use--but from all veterinary accounts this is now a non-issue. The vastly increased precision of testing, and a greater reliance on plasma rather than urine tests, has made this a moot point.”¹⁹

7) Does the use of Lasix contribute to fewer starts per horse per year? Will it weaken the breed?

- The average number of annual starts per horse has dropped dramatically in the U.S., from a peak of 11.31 starts per year in 1960 to a low of 6.06 starts per year in 2010. But the trend started before the advent of Lasix, with the average dropping to 10.23 by 1975. When the AAEP standard for Lasix administration was approved, the average was down to 8.28 annual starts, but it held relatively steady for the next decade, with the average at 7.84 starts in 1994. There is no anecdotal or scientific evidence to single out Lasix as the cause for the decline, and the numbers have actually rebounded slightly since 2010, with the average at 6.3 starts in 2013.²⁰

- There is a misconception that horses in countries that do not allow the raceday use of Lasix average more starts per year than those in the U.S. In fact, the average in Europe is no better than in the U.S., and in some countries, it is considerably lower. Horses in Germany, lauded for its high standards, average 5.0 starts a year; in France, 6.0; in England, 6.0; in Italy, 5.2. Australia's average is similar to the U.S. at 6.2 annual starts; New Zealand averages 5.8 starts a year.²¹

- Countering arguments that American horses are weaker than their foreign counterparts, Dr. Hiram Polk Jr. presented, "Case Study: North American Pedigrees Down Under," during the 2013 Jockey Club Round Table, and demonstrated that horses with North American bloodlines raced more frequently and needed less time between races than those with Australian pedigrees.²²

- There are many potential contributing factors to the decrease in the number of starts. The '80s saw the demise of "Millionaire's Row," the area of the Belmont Park backstretch where the old (and wealthy) names in racing once stabled their horses. The stalls had been filled with the Rokeby and Greentree and Calumet and Darby Dan horses, horses bred from meticulously selected bloodlines that prized soundness. As the venerable family stables cut back or disappeared completely, the explosion of the commercial breeding industry was underway, and the standards of the breeding industry changed. An emphasis was placed on precocious speed with less regard for soundness. Stallions went to the breeding shed after making just a handful of starts because there was so much money to be made in stud fees. Foal surgeries to correct conformational flaws became common place and acceptable. Young horses, formerly turned out and toughened in very natural conditions, were suddenly being raised like hothouse flowers. All of these factors could contribute to raising softer horses that don't race as often.



- Another potential factor in the decrease in the number of annual starts is the fact that a premium is placed on a trainer's winning average. The late Hall of Famer Bobby Frankel, who was known to scratch his horses if the conditions did not appear favorable for a victory, was hired by Juddmonte Farm based, in part, on a computer analysis that highlighted his exemplary win percentage.²³ A 10% strike rate is a knock against a trainer. The acceptance of the "bounce" theory, quantifying the negative effect that a peak effort can have on a horse's next start, has also tempered trainers' enthusiasm for running back on less than a month's rest.

8) The public is anti-Lasix.

- There has yet to be a published survey that directly addresses the Lasix issue. The survey questions posed are ambiguous, generic and, at times, leading. The results are much what you would expect if you asked the public, “Do you think kids should take drugs?” when trying to determine if there was support for medicating asthmatic children.

- In an Op/Ed for the *Thoroughbred Daily News* in October of 2014, professional handicapper Jerry Brown stated that those in his profession supported the continued use of raceday Lasix, and added, “...the Lasix issue is being lumped in with the illegal drug issue, because both involve drugs, and in some cases because people have agendas. I've been heavily involved in trying to stop cheating in our game for a long time, not for idealistic reasons, but because money is being stolen from honest horsemen and horseplayers [like yours truly]. Attempting to stop something illegal, which everyone agrees about, and attaching it to banning a legal therapeutic drug, which is controversial, is like having a bill to fix the Veterans Administration, and combining it with declaring war on Iran, because both involve the army.”²⁴



- Attempts have been made to show a correlation between the raceday use of Lasix and the issue of steroids in professional sports. The fact is, when the call came to ban steroids in Thoroughbred racing, the response was a unified stand to phase out the medication as quickly as possible. In stark contrast to the Lasix issue, horsemen supported the elimination of steroid use, because there was no single therapeutic application for steroids. There is a single scientifically supported use for Lasix. Horses bleed. Lasix works.

- During a presentation of the McKinsey Report during The Jockey Club's 2011 Round Table Conference on Matters Pertaining to Racing, a pie chart purporting to support the conjecture that the public is anti-Lasix demonstrated that 74.5% of those who responded to a survey of members of the Horseplayers Association of North America were for the elimination of raceday medication. In fact, according to the HANA website, the question posed was, “Do you support The Jockey Club's position on raceday medication.” Responders had to click on a link to the TJC position; it was not posted with the survey. The question was clearly slanted; no clear-minded individual could in any way interpret this survey as an objective attempt to find the truth about the Lasix issue. An earlier survey of HANA members, conducted in 2009, found that only 59% were “extremely” concerned over the ILLEGAL use of medication and drugs. That means 41% did not consider illegal medication a major concern.²⁵ Go figure.

“We know from a scientific and a medical perspective that furosemide is good for horses that race, but is it good for the business of racing? That paradox is one we've made an enormous effort to try to resolve. Fundamentally, we believe what's good for the horse has to be good for racing.”³⁰ Dr. Scott Palmer, equine medical director for New York State and past president of the AAEP

- Despite the depth and breadth of the McKinsey Report presented at the Round Table, the published results did not include any specific reference to Lasix in any of the polls of the public, racing fans and industry stakeholders. “Medication of horses” was considered a significant issue by 78% of stakeholders interviews, but only 25% felt that medication issues “adversely impacted wagering.”²⁶

• In a 2011 survey of racing fans included in the McKinsey Report, only 36% felt that “medication was one of the top three issues facing racing.” But 78% “would stop betting if they knew horses were not treated well.”²⁶ One could easily argue that banning Lasix, a medication that safely and effectively treats a condition suffered by the majority of racehorses, could be defined as not treating the horse well. After Lasix was permitted for raceday use in New York 16 years ago, the incidence of epistaxis following a race immediately dropped nearly 80%.²⁶ How do you explain to racing’s fans a willingness to let 80% more horses suffer critical bleeding from the nostrils after they run, and put them at risk for a condition that, when severe enough to cause epistaxis, can be fatal?

• In a *Daily Racing Form* article headlined, “Banning Lasix Won’t Stop the Bleeding,” Steven Crist said, “If you poll civilians about whether racing [or water polo, or your local crafts fair] would be better off without ‘performance-enhancing drugs,’ they will answer in the affirmative. From personal experience, however, I see no evidence that this translates to Lasix keeping anyone away from racing. Over the last decade, I have conducted over 100 question-and-answer seminars with tens of thousands of fans and players at tracks and betting parlors across the country. The next one I meet who thinks Lasix is a major issue, or a reason not to play the races, will be the first.”¹⁸

THE REAL ISSUE...

Those opposed to the use of Lasix trumpet they are concerned, first and foremost, with the welfare of the horse. But the arguments offered against the use of Lasix never address what is in the best interest of the horse. Opponents are concerned about what the international racing community thinks, what the public thinks, the long-term effect on the breed, testing standards, etc. There isn’t a single argument that stresses the health and welfare of the horse.



The majority of horses bleed when under exercise-induced stress. It is result of their physiology. EIPH affects performance horses of all breeds. It is a condition that is at minimum uncomfortable and distressing for the horse, and, at maximum, fatal. The only way to eliminate EIPH completely is to shut down the racetracks and put all the horses out to pasture. That is not an option.

If there was a viable alternative to Lasix, the industry would embrace it. But opponents have no researched and reasoned plan for dealing with EIPH in the future. The thinking seems to be, “eliminate Lasix and somehow the horses will stop bleeding.” That’s not going to happen. There is a problem, and ignoring it isn’t the solution.

We do have a safe, effective treatment that allows horses to perform, not over and above their natural ability, but to the highest level their natural talent dictates. Until a better option is discovered, it is unarguably in the best interest of the horse--and, by extension, in the best interest of the sport and the industry--to alleviate EIPH with Lasix.

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