

# Standardbred JURNAL

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## DIVIDE CONQUER

2022 Kentucky State Fair Roadster to Bike World's Grand Champion

Driven by Jimmy Robertson

## Standardbred – JOURNAL

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#### ON THE COVER



Divide N Conquer was the winner of the 2022 World's Champion Roadster to Bike Class at the Kentucky State Fair in Louisville, Kentucky. He's driven by veteran driver, Jimmy Robertson.

Cover photo courtesy Howard Schatzberg

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# Dealing With JGBBO

## Ringbone: Prevention, Diagnosis, and Treatment

By Colleen Callahan Photos courtesy Colleen Callahan

MOJO IS A NINETEEN-YEAR-OLD Belgian draft gelding and a therapy horse at Horsepower Therapeutic Learning Center in High Point, North Carolina. He was donated to Horsepower two years ago seemingly sound, though he had scars on his body—the evidence of a hard life and a heavy workload. After settling in to his new environment, he was tested and subsequently passed his certification to join the other eighteen horses at Horsepower and start his new life in healing kids and adults with disabilities.

Executive director and founder of Horsepower Jan Clifford said that Mojo quickly became a fan favorite, winning the hearts of everyone who worked with him. "His sweet disposition and trusting nature—combined with his large stature—made him the perfect therapy horse," she said. "However, within a few months, the staff noticed that he experienced lameness on and off. He was given time off when he appeared lame but would recover after a few days."

When the horse initially was delivered to Horsepower, Clifford noticed that Mojo's feet were in rough shape. Farrier James Hunter, who attends to all the horses at the facility, immediately pulled his shoes and did corrective trimming. It worked for a short while, but Mojo showed signs of lameness once more. Hunter decided to put shoes back on Mojo and continued corrective trimming. When Mojo again came up lame, Clifford decided to call Dr. Mark Wallace, Equine Practitioner and Partner at Carolina Equine Hospital. A lameness test was done and radiographs were taken, and the evidence on the images was undeniable: Mojo had severe ringbone in both front feet upper and lower, in both coffin and pastern joints.

And so began a team effort of keeping Mojo sound and pain-free, with a team that included the farrier, the veterinarian, and barn staff. Knowledge is power, after all, and the more you know, the better you can do.

Ringbone is defined as an "osteoarthritic condition characterized by degeneration of joint cartilage and formation of abnormal bone.... At its best, the condition impairs a horse's soundness, causing on-and-off lameness. At its worst, it may prematurely terminate a horse's athletic career" ("Ringbone in Horses," Kentucky Equine Research, September 8, 2015, https://ker.com/equinews/ ringbone-in-horses).

Ringbone is degenerative and occurs in two lower leg joints—the joint between the long pastern and short pastern bones, called "high ringbone," and the joint between the short pastern and coffin bones, called "low ringbone." In some cases both joints are affected, as was seen in Mojo's case.

According to Wallace, who has board certification in equine internal medicine and specializes in sports medicine and lameness, low ringbone is more difficult to manage than high ringbone. "The coffin joint is a higher-motion joint and much more sensitive to any form of disease than the pastern joint," he said. "However, neither are curable, and once diagnosed, further concussion to these joints leads to rapid degeneration."



The cause of ringbone can differ from horse to horse, but most experts agree that ringbone can start when cartilage is exposed to extreme concussion and stress. Horses that undergo repetitive stress in the pastern region such as jumpers, barrel horses, or polo ponies also suffer from ringbone more frequently. When cartilage deteriorates, it triggers an inflammatory response, causing the formation of scar tissue. And in the case of ringbone, that tissue will eventually harden.

"When this happens, a palpable thickening or 'ring' of bone is created around the pastern and/or coffin joints," Wallace explained. "That is how ringbone got its name. Back in the days before there were X-rays, the only symptom that could be seen or felt was when horses developed a 'ring' of firm swelling around the pastern region. That ring is actually bony proliferation, and the condition is quite painful."

In addition, the doctor has found no evidence that ringbone is an inherited disease. "There is no identified inheritability of this condition," he said, "other than the tendency for larger horses to be affected."

According to Wallace, the early symptoms of ringbone include a thickening of the pastern region, "but more importantly, lameness, shortness of stride, and limping," he said. "There is not a lot of heat associated with ringbone; however, you might feel heat at the onset of this disease if there is a traumatic component to it. For example, if the horse takes a bad step and destabilizes, there might be some short-term heat and swelling."

Ringbone is a slow, insidious disease that can surprise any horse owner. And, again, though early intervention is key, there is no cure. Proper management of a horse with this condition can extend the horse's life, however, with the goal being pain management and an immediate change in workload. The only way to actually diagnose ringbone is through imaging. But in advanced cases, one may be able to actually see and feel the bony buildup under the skin of the pastern region.



"In Mojo's case, we first ruled out what it wasn't, like abscessing, improper shoeing, founder, etc.," Wallace said. "I examined Mojo for heat, swelling, and range of motion in his joints. We also used a hoof tester to check for sensitivity. These are all the normal things we do for a lameness exam.

"Mojo has all the risk factors," he continued. "He's a big horse that carries a lot of weight, and he more than likely has had a very heavy workload for most of his life. In a lot of large-breed horses, since ringbone is mostly a concussion-related degenerative condition, both front limbs can be affected. This is a common and complicated factor. If each front foot hurts equally, it is harder to detect ringbone and the lameness associated with it. If one limb hurts more than the other, you might see a head bob when the horse is in motion, and this only happens when the damage on one limb is significantly more progressed than the other limb."

It is not common to find ringbone in the back foot's lower joints, as this area has less concussion. Additionally, a horse with upright pasterns, or toed-in conformation, can suffer with ringbone even if they have not had a heavy work-



Farrier, James Hunter, and Mojo, the Belgian draft therapy horse, at Horsepower Equine Learning Center. Photo : Colleen Callahan

load in life. Knowing a horse's conformation is critical in keeping the horse sound.

Once Mojo was diagnosed, the team set a plan of action in place to manage his care so he that could continue his work as a therapy horse. "Our program is here to serve people with disabilities, but we also serve our horses," said Clifford. "We knew that if Mojo left our program, his quality of life would be compromised. The chances of someone else spending the money and time to assure his quality of life was slim. He is such a kind and loving animal, and his ability to bring joy and healing to others is so evident that we have committed to his care. That care team includes our farrier, James Hunter; our barn manager, Martina Faltova Cope; and Dr. Mark Wallace, our veterinarian; along with all our staff and volunteers."

James Hunter has been a farrier for twenty-four years, serving the North Carolina Triad area for twenty of those years. He has an impressive resume of education and apprenticeships, including Heartland Horseshoeing School in Barton County, Missouri. He apprenticed under Ken Hass in West Virginia and worked with Steve Fulton in Maryland with the DC Mounted Police. In his experi-

This is a visual showing the center of articulation, and the 50/50 balance necessary to provide comfort to a horse with ringbone. A horse born with, or developing upright and/or toed-in conformation, may be susceptible to ringbone. Photo: Colleen Callahan

ence with farriers of different practices, Hunter discovered a passion for working with complicated cases and "finding a way to give that horse a chance," he said. "The importance of having a qualified team working on behalf of the horse is very important. We should all have the same goal to make the horse comfortable, whether it's a high-dollar show horse or a backyard family horse."

After Mojo was diagnosed with ringbone, Hunter's goal was to alleviate his pain. Knowing that Mojo, being a draft horse, carried more weight than other breeds, balancing his feet to bring him comfort was of the utmost importance. A balanced foot may look differently from horse to horse, especially one with ringbone. One objective would be to ease the breakover forces that act on the hoof each time it left the ground. Hunter believed that supporting the foot at the heel was also very important, especially in Mojo's case.

"Severe cases are cause for severe measures," said Hunter. "When I started working with Mojo, I brought the breakover back pretty well, but he was still coming up lame. So Dr. Wallace and I decided that we had to bring back the center of articulation—meaning when the horse breaks over the toe—even farther to bring him in balance for the duration of the shoeing cycle. As we shoe a horse, we are not just shoeing for that day. We shoe for the next four to six weeks, and we have to think ahead."

Hunter takes extra care while trimming and shoeing Mojo, as he is aware that hard concussion to the foot and flexing the joints is painful. If we use the analogy of a person with severe arthritis in their knee, one can surmise how painful it would be to bend that knee. The same applies to a horse with this arthritic condition. Keeping the leg low with minimal bending during the shoeing process can provide much needed comfort to the horse. "In addition, when driving the nails, we must be thoughtful to the pain they can cause in these cases. I use a rubber hammer rather than steel to alleviate some of that concussion," Hunter affirmed.

Horses with ringbone require a tighter shoeing schedule. "An example I learned from a barefoot trimmer working with horses suffering from clubfoot is that you want to avoid distortion in the hoof capsule," Hunter explained. "Why would you wait six to eight weeks, allowing all that extra growth, which, in turn, just creates more distortion? If you can keep the hoof capsule from distorting and maintain a balanced hoof from heel to toe, inside to outside, on a four-week schedule, then you are much better off."

Hunter acknowledges that Mojo's feet, after trimming and shoeing, might not look right to a person not understanding the disease of ringbone and the pain it brings. "They might not like the look of the hoof after I have worked on it, as it is not conventional, but the goal is comfort, not beauty," he said. "You have to put the horse's agenda before your own." In addition, horses with ringbone such as Mojo benefit from therapeutic shoes. "Those shoes can include rolled toes, rocker toes, square toes, half-round, egg bar, and rubber shoes," Hunter said. "These shoes can provide comfort and ease of breakover. Additionally, pads and hoof packing can alleviate compression."

Both Hunter and Wallace suggest yearly X-rays of the feet as a proactive maintenance tool for any horse owner. "When you take yearly radiographs of the feet and review the images with the team that supports that horse, including a farrier, you can determine whether a horse is showing any early symptoms of disease affecting the feet," said Wallace. "You can compare the yearly changes and make the necessary adjustments to optimize the biomechanics that will protect the lower joints."

There are also medications, injections, and surgical procedures that can help a horse diagnosed with ringbone. Remember, this is a degenerative disease; however, depending on a horse's age, health, and severity of ringbone, options are available. "In the pastern joint [for upper ringbone], the body's response in laying down new bone can create a bony bridge across the joint," said Wallace. "And given that the pastern joint is a low-motion joint, that joint may fuse on its own in a severe case. When this happens, the small amount of motion in that joint will cease and the horse will experience great comfort. If the horse is young, fusion surgery is an option. Again, this is only in upper ringbone, and it has a high rate of success. Another option is to chemically fuse the joint. Chemicals are injected and they destroy the cartilage. This will speed up the body's natural fusing process. Unfortunately, in Mojo's case, given his age and his weight, these are not options."

There are also several experimental therapies one might consider upon recommendation of their veterinarian. PRP [platelet-rich plasma] and stem-cell therapy are now being used to treat ringbone. If you choose to speed up the body's natural fusion process in a case of upper ringbone, arthrodesis [surgical fusion of the joint] and facilitated ankylosis [injection of alcohol into the joint] are two methods currently being used to achieve joint fusion.

Pain management includes managing the weight of the horse affected with ringbone. Systematic anti-inflammatory medications including Bute or Equioxx may also provide short-term relief during particularly painful times for your horse. Prescribed injections, including Legend, Adequan, and Osphos, may also provide pain relief. Even shockwave therapy has been used to treat ringbone in an effort to stimulate new bone growth and accelerate the healing process by reducing painful inflammation. Wallace recommends consulting with your veterinarian before implementing any of these treatments in an effort to treat ringbone.

"Not all horses will have a positive response with certain treatments. One must factor in age, weight, and the

Front Limbs displaying severe upper and lower ringbone. In this horses case, the disease progression was severe, and quality of life was assessed before humanly euthanizing. Photo Credit: Jackie Bowler

severity of the ringbone to make good decisions for your horse," he said. "In Mojo's case, being severe, his options are limited. Some of these treatments might introduce a laminitis reaction, and if a horse carries extra weight, they have a slower metabolism, which can be problematic with the introduction of some aggressive treatments."

Though imaging provides a conclusive diagnosis for ringbone, those images do not have the same visceral and tangible impact of seeing cadaver limbs affected by the disease. Jackie Bowler is a professional barefoot trimmer. She was trained under the tutelage of Ida Hammer, a wholehorse trimmer, rehabilitation specialist, and educator and founder of Mackinaw Dells 2 Applied Whole Horse Hoof Care Program. Like Hammer, Bowler has a passion for education. She specializes in rehab cases and believes that all horses are deserving of a team that will ensure the utmost in quality care. She also acknowledges, through personal experience, that in difficult rehab cases, there is a time when the humane decision must be made to end a horse's suffering. And it's with those cases that she's found that cadaver limbs not only provide further education but also honor that horse, in the process of sharing the cadaver with other farriers and owners, so that the next horse might have a better chance of survival.

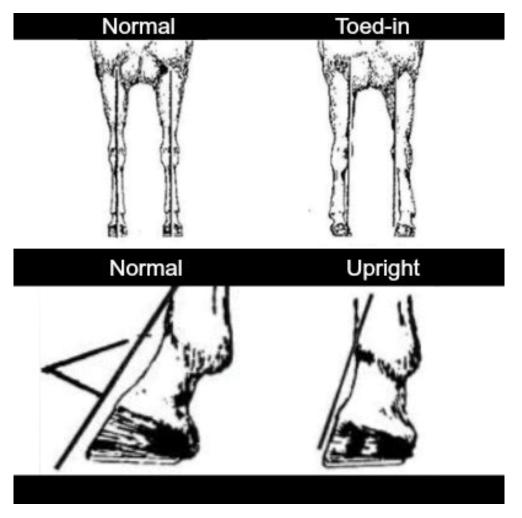
"I was introduced to a warmblood who had a career as a jumper," said Bowler. "My client purchased this horse having no idea that it had ringbone. I immediately saw that the horse was in a state of discomfort. When I felt the pastern region, I could feel the damage; I could see the bony protrusions under the skin. Radiographs were ordered and the evidence was clear. This horse had severe high ringbone and sidebone calcification of the lateral cartage of the coffin bone—in both front feet. You could see on the images that the upper pastern was close to fusing on its own; however, the horse was in severe pain."

Bowler pulled the shoes and brought the toes back, as the horse was long-toed and low-heeled. She proceeded with an aggressive trim to bring the horse off its toe. The comfort the horse experienced was clearly evident after the trimming. However, Bowler knew it was only a temporary fix that would provide short-term relief, being that this horse's condition was very advanced. "Surgical fusion was discussed upon viewing the MRI imaging; however, it did not work out well for that horse," she said. "This is where the 'team perspective' becomes very important. We all have to be on the same page. If you are not, the horse most definitely pays the price. I cannot trim my way out of a problem, just as a veterinarian cannot medicate their way out of a certain diagnosis."

Bowler believes that horses will help guide us with decisions, but she acknowledges that "some are as tough as nails in not showing their pain." When a decision must be made to humanely euthanize a horse, it can be a hard topic to broach. "In the case of this warmblood, the team, including the owner, knew that we had done all there was to do. After one year, the decision was made to end the horse's life," she said. "I have been through this with my own horses, but at the end of the day, I've always promised my horses that I will never let them suffer."

The owner of this horse agreed to provide Bowler with the two cadaver limbs showing the horrific extent and tangible example of the severity of advanced ringbone. In turn, Bowler uses these images to provide education to her clients, farriers, and educators in the field of horse science and welfare. She said, "I posted these images on my Facebook page, and the images went viral. People from all over the world responded, wanting more information on ringbone. I had no idea that these two cadaver images would impact so many. I truly love educating people on the horse. Education is our biggest tool. I did everything I could to save this horse, but this horse lives on through its cadaver limbs."

Bowler recently donated the cadaver limbs to Ida Hammer, who now uses them in her class to educate future



A horse born with, or developing upright and/or toed-in conformation, may be susceptible to ringbone.

farriers and trimmers on what ringbone looks and feels like. "Ida gave me a lot of advice in caring for this horse when it was alive. Her passion is now my passion-educating those who want to learn. The second you stop learning, you're done."

As for Mojo, he couldn't have a better team working on behalf of his comfort and quality of life. "Generally we don't take in horses that are high-cost because we are a nonprofit," said Clifford. "But Mojo's story is one of overcoming neglect and abuse and still having the most trusting nature and huge heart. He is the perfect example of what we do at Horsepower Therapeutic Learning Center. Our love and care for this horse has, in turn, created a horse that loves and nurtures our riders, who benefit from his gentle nature. He's a true healer, and he defines what Horsepower is all about." TSJ

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