

## ***A new model for the Holistic approach to Performance Hoof Care, Applied Equine Podiatry!***

For well over a decade, I have worked at developing a scientific approach to hoof care, one that ultimately was spurred on by lateral thinking. The scientific approach that I am referring to is that of Applied Equine Podiatry (a holistic approach to hoof care). Applied Equine Podiatry has since proven itself as a viable alternative to the conventional farrier practice. It goes far beyond the natural hoof care model that has served so many over the past two decades. Applied Equine Podiatry goes beyond static mechanics (the basis of the farrier sciences), kinematics (the study of motion), and even dynamics (the study of the energies that result in motion) by utilizing the science of "Energetics." Energetics defines how we look at the relationship physiology and biomechanics hold to one another, and how they work in concert to support and achieve health in the equine foot. The unique approach of using lateral thinking grounded in science has led to many breakthroughs, and is continuing to solidify this approach to the study of the equine foot.

*"The essence of Applied Equine Podiatry is the conscientious study of the equine foot, always striving to expose it to proper environmental stimuli, making every effort to promote proper structure and function, as we progress toward achieving high performance."*

With the development of sound working theories, we have been able to create a solid model of the equine foot, one that supports the principles of AEP. To better understand the model used, and how this approach differs from that of the wild horse model, and the conventional farrier model, it is probably best to outline some of the principles and philosophies that guide the practice of AEP. After all, laws and rules govern all science, and even though science may seem far less romantic than "getting back to nature," it is every bit as exciting. In fact, we could not get any closer to nature than by working to achieve health in the domesticated horse's foot.



### **Principles of Applied Equine Podiatry:**

#### **> Structure + Function = Performance**

With an understanding of correct structure, and each structure's individual function, we are able to determine what needs to be done (stimulus) to achieve peak performance (function of the whole).

#### **> The horse has the innate ability to heal itself.**

We are confident in stating that the horse has the innate ability to heal, this must however be qualified by stating that this is only true if the environment that the horse is kept in is conducive to healing. Environment is defined not only by the turnout, but by the stimulus provided by its care giver.

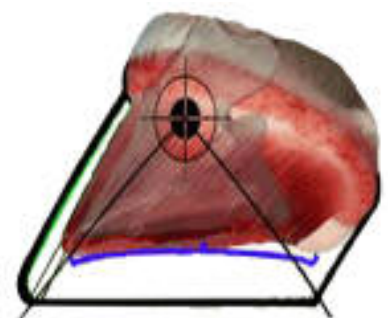
#### **> Correct Pressure is the stimulus for correct growth.**

This fact has served the horses we treat well. It is a scientific fact that correct pressure produces healthy tissue, while too much, or too little pressure will result in poor tissue development. This principle is one of the most important principles of AEP. By studying each individual structure of the foot, we have been able to integrate practices that promote correct stimulus for each given structure. This fact allows us to investigate new ways to aid the horse in its development, by establishing an environment that is conducive to healing.

### **Do no harm**

This is something that we have been teaching for over a decade now, though it is mentioned last for a very good reason. If we do not have a good understanding of the above listed principles and theorems, we cannot, in good conscience, say we are doing no harm.

Applied Equine Podiatry allows us to look at the attempts made to better hoof care over the past century in a new light. I wholeheartedly believe that never before has



the opportunity to improve the welfare of the horse, and increase its potential for performance, been so great. There have been so many breakthroughs over the past decade that it is impossible to list them all in this article, but what I can do is highlight how this approach to hoof care is changing the face of the equine world.

Scientific research and facts support the theories that make it possible to question conventional thinking; this process again is referred to as lateral thinking. As a result of lateral thinking, the science of Applied Equine Podiatry has made huge advances in the treatment of the horse's foot. Allow me to mention several of these advances.

For nearly two centuries, common belief has dictated that whenever the equine foot is stricken by disease or dysfunction that we must stabilize it by making it rigid. New research into foot function has shown us that this is not true. Studies support our findings and indicate that in nearly all cases the back half of the foot must be able to distort on all dimensions, not simply expanding and contracting. Studies also make it clear that the amount of distortion is an important factor in achieving health and performance. Excessive distortion can be as destructive as too little distortion. Our research into chronic founder offers evidence to support this belief.

In the case of chronic founder, it is readily accepted that the lamellae are responsible for maintaining the position of the coffin bone within the hoof capsule. Our new research is proving that this is not true. Just think about that for a moment. This misconception has resulted in an entire industry (farrier, veterinarian, manufactures) working to develop ways to support, manipulate, and stimulate the lamellae into doing a job they were not designed to do. If the lamellae were meant to maintain the position of the coffin bone in relationship to the bone column, *why then does the coffin bone remain in alignment with the bone column and coffin joint when the hoof capsule is removed?*

It is a fact that the position of the coffin bone in relationship to the bone column is the result of ligament, tendon, and cartilage health, and not simply lamellae attachment. Ongoing research will prove that those horses with healthy structures (Internal Arch Apparatus™) *within* the foot, stricken with laminitis do not have to rotate.

"I believe that many of the mistakes made by conventional farriery have been the result of the industries complacency with the simplicity of conventional thinking." Chronic founder is the result of this complacency. Chronic founder is the result of mismanagement from the very onset of laminitis. With this understanding, it becomes clear that conventional chronic founder treatments are way off base, and that this new approach to the problem is proving to be extremely effective. Chronic founder is now treated with the understanding that distortion must be controlled, not eliminated. Stability is required about the coffin bone, this helping to isolate distortions to the lateral cartilages, and back half of the foot. We can no longer look at the bar shoe, egg bar, reverse shoe, or hoof boots as viable options for the treatment of chronic founder. In most cases, the welfare of the horse also limits barefoot as an option. Examining such breakthroughs allows us to state with resounding confidence, "Where for over two centuries, the conventional farrier sciences have developed as a result of being *reactive*; Applied Equine Podiatry has developed as a result of being *proactive*." So how do we utilize such knowledge?

We utilize this knowledge in a holistic approach to hoof care that helps in developing methods, techniques and products that can provide the correct stimulus needed to maintain or return healthy structure to the internal workings of the horse's foot.

It has been lateral thinking and Applied Equine Podiatry that has allowed us to look at commonly used products in new ways. What follows is yet another example of how Applied Equine Podiatry is helping to change the face of the equine world.

In early 2007, we were approached by a distributor of equine casting materials, and asked to try their product. As a farrier, I had used casting materials years earlier, the first being fiberglass cloth with Equilox™ applied to it (1989), and later a casting material by 3M™. So what was different about this new casting product? Honestly, very little was different from those earlier types, however *we were now evaluating this product based on its ability to support the theories of Applied Equine Podiatry, theories that I did not have when I used casting materials in those earlier years.* We immediately began to ask the question, "Does this product support the theories and principles of Applied Equine Podiatry which have evolved over the past 12 years?" We tested and re-tested the product hoping that we could develop a *method* that would support those theories. The traditional casting product proved not right for our needs, showing little promise as a replacement for conventional horseshoes or hoof boots. We soon came to realize that we needed a different material, a better material, one that was less rigid, easier to work with, and more economical. We also discovered that simply applying material as if it were a cast would not support our theories. The material needed to be applied in a fashion that would support true foot function within AEP. After more than a year of trials, and testing, we were ready to introduce the Energetics Brand™ Perfect Hoof Wear System™, a **Non-Cast alternative to conventional horseshoes and hoof boots.** The PHWS supports our theories on foot function, and the theorem Structure + Function = Performance, allowing for three dimensional controlled distortion.

## What is it?

The Perfect Hoof Wear System™ is a method to create a custom hoof wear that actually promotes accelerated healthy growth of all hoof structures. The Perfect Hoof Wear System supports the theories of AEP, promoting the stimulus needed to achieve optimum health from within.

There were several factors that needed to be addressed in the development of the PHWS.

1. Must support the theories of AEP
2. Could not hinder true foot function
3. Needed to aid in providing correct stimulus
4. Must allow for correct controlled distortion
5. Could not promote infection
6. The method needed to be simple, and user friendly
7. Needed to be economical

Fortunately, theory and past history could be used as a guide in the Energetics™ footwear's development. Studies have proven that casting, like shoeing, can reduce true foot function. As stated, we were not comfortable with the current products being offered as equine casting materials. "Knowing horseshoes did not work within our theories, why would we "cast" a foot, minimizing even two-dimensional distortion (expansion and contraction)." We are not comfortable with current hoof boot development, as none provide the controlled distortion we desire. With boots, there is the issue of poor fit and rubbing, that can cause sores. They are also usually heavy, weighing in excess of a pound each. Our biggest concern for the industry's "over-use" of hoof boots is that with the rigid bottom, the hoof does not receive the correct stimulus. In recent years, we have received call after call from clients who were told to boot their horses in the name of "natural" 24/7 due to weak structure, and their horse is no nearer to having a healthier foot. This is due directly to the "environment" a hoof boot creates. Utilizing a non-cast material, applied via a specific method within an easy to use system, the PHWS satisfied all of our concerns, and produced results that far exceeded our expectations. So much so that The Perfect Hoof Wear System™ is now poised to replace the conventional horseshoe, corrective/remedial horseshoes, and booting systems, allowing those that wish to go barefoot to do so, with far less stress for both horse and owner.

The Perfect Hoof Wear System™ consist of several components, that when used correctly, form a custom foot wear that does what a conventional horseshoe, boot, or cast cannot, provide protection, and stability, *while promoting optimum stimulus* for healthy growth of the internal structures of the equine foot, known in AEP as the foot's Internal Arch Apparatus™. The PHWS utilizes a patent pending method, along with high quality materials consisting of a uniquely woven fabric *impregnated* with water activated resin, and a *density specific closed cell* foam impression pad. The method produces unique, **non-cast** footwear.

The PHWS should not be mistaken for other casting products. Veterinarians, farriers, and specialty companies have been promoting casting for the treatment of hoof problems for decades. There are several common types of casting materials, fiberglass, fiberglass composites, moldable plastics, and even metal plates. There are in fact several casting products comprised of a fabric and resin, but the similarities end there. Unlike casting materials that use fiberglass or fiberglass blended fabrics, the PHW wrap material contains no fiberglass. We have also found that the resin in some other casting materials is often simply applied to the fabrics surface, likely applied by a resin bath. That type of process makes for a very inconsistent resin application, thus weakening the effectiveness of the wrap. PHW material is *impregnated* with a water activated resin. Impregnating the resin produces a cleaner material that virtually eliminates pooling of the resin during the curing process, thus the weave remains more open, promoting flexibility and reducing sweating under the footwear. This makes for a much cleaner and simpler application.

The PHWS though applied in a similar fashion to casting material, it is not a cast. Viewed as a **non-cast**, the PHWS utilizes a very minimal amount of adhesive, resins that cure flexible, and remain flexible for the duration of its serviceability. The PHW is designed to offer the optimum wear to distortion ratio. Though some casting can be made more flexible by using less material, wear resistance is often sacrificed making the material far less cost effective. Simply stated, casting is done to make rigid, Perfect Hoof Wear is not.

## When is it used?

Replacing horseshoes and hoof boots: The PHWS™ is used *in place* of horseshoes and hoof boots. It is ideal for those horses transitioning to barefoot. Because conventional horseshoes prevent freedom of movement, maintaining a healthy foot is nearly impossible. New research provides evidence that expansion and contraction are not enough, therefore all boots fall short. Studies also show that frog pressure is not enough, so simply placing pads into a boot will not provide the stimulus that is created by correct three dimensional distortions. The horse's foot needs to distort on all dimensions for correct foot function to occur.

Therapeutic uses: It can be used to treat hoof ailments including, hoof wall cracks, flaring, chronic founder, navicular type problems, thin soles, frog infections, white line deficits and infection, and overall poor foot health. The footwear also takes away some of the burden placed on the horse owner that has the desire to go barefoot. The footwear allows most horses to continue exercise, which is often the most important factor in treating hoof disorders.

Hoof wall growth: Our research provides evidence that hoof wall growth is not limited to the coronary band. (La Pierre, Natural Horse, 2001) Hoof wall growth also originates at the lamellae, producing horn that defines the rate at which the hoof capsule grows distally. The lamellae have multiple functions, holding the coffin bone in place is just **not** one of them. By providing the correct resistance (stimulus), the horse can utilize nutrition more affectively. Most horses are receiving the nutrition they need to produce healthy horn; the foot is simply not utilizing it. No matter what supplements you are feeding your horse, if the foot is not functioning correctly, it is money wasted. We have seen a huge increase in hoof wall growth with the introduction of controlled distortion, via this non-cast technique.

Performance enhancement: PHWS produces light weight (less than 1.5 oz.) footwear, with unique properties that help the horse move more freely. With the return of proper foot function, and healthy structure, a horse has the greatest potential for reaching peak performance.

The Everyday Horse: All domestic horses can benefit from Energetics Perfect Hoof Wear™. The domestic horse is faced with an environment that is not conducive to healing to the degree we need, in order to progress to a desirable level of performance. It is a fact that, hoof imperfections, whether due to infection or lack of health of one of the foot's structures, your horse during turnout is less likely to utilize its body correctly, and will compensate for that weakness. The beauty of AEP and the PHWS is that your horse is engaged in a true 24/7 rehabilitation program. He is able to utilize his body more effectively, thus developing a more correct musculature system to support locomotion, all brought about by the use of the PHWS. Those that have barefoot horses that need a little extra protection without sacrificing proper foot function the PHWS is proving to be the hot ticket.

The PHWS is a complete system providing everything you need to start building healthy structure from the inside out. The idea behind the PHWS was to produce a system that would allow the average horse owner to introduce the principles and philosophies of Applied Equine Podiatry into their everyday hoof care program. Now, anyone can do just that, and it is as easy as trim, apply and exercise.

So there you have it, just a few of the new developments resulting from the practice of Applied Equine Podiatry, a science that spurs further advancements and methods that promote health in the whole horse. Applied Equine Podiatry is truly a holistic approach to modern hoof care for the domestic horse. At the Institute of Applied Equine Podiatry, we will continue our work to develop studies, methods, systems, and products that will make domestication of today's horse less invasive and more productive. Applied Equine Podiatry and the Perfect Hoof Wear System™ are truly changing the face of the equine world.

For more information on Applied Equine Podiatry, the Perfect Hoof Wear System™, and the Institute of Applied Equine Podiatry, please visit the following web sites.

[Appliedequinepodiatry.org](http://Appliedequinepodiatry.org)