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The following article by Coach Bryan Hoddle was printed in the Washington Coach December 2007 issue.

Bryan Hoddle was named Head Coach for the 2004 USA Paralympics Track and Field Team/ Athens, Greece. During his career, coach Hoddle helped Tony Volpentest and Marlon Shirley who went on to set three world records. Coach Hoddle is also a coach's coach and is the director for the annual All Sports coaching meeting in Seattle which attracts over 2,000 high school, college and professional coaches from all over the USA.

Posture Dynamics is currently assisting Coach Hoddle in preparing yet another Olympic class athlete currently in qualification for the 2008 Beijing Olympic Games. To learn more about Posture Dynamics and Posture Control Insoles, please visit www.MortonsFoot.com.

GROUND FLOOR COACHING

The Critical Importance of Posture and Body Alignment for Track and Field

Bryan E. Hoddle-Tenino High School
 Head Coach 2004 USA Paralympic Track and Field Team-Athens, Greece
<http://www.hoddlespeak.homestead.com/files/>

As a track and field coach, no matter how meticulously you plan workouts, no matter how analytical you get about training, no matter what techniques you use for mental toughness and focus, I've discovered there is something even more fundamental and basic to injury prevention and coaching athletes to top performance.

You might say it is coaching at the ground floor—assessing your athlete's posture based on the way your athlete's feet meet the ground.

When you think about it, in track and field, what could be more fundamental than the way your athlete's feet interact with the track and the field? Obviously, that interaction is the foundation of all track and field events. It is a primary variable affecting speed, power, strength and endurance – not to mention injuries!

Up to now, the causal relationship of posture to performance has not been clear so many coaches have not included it in their process of coaching.

But I recently discovered that correct posture and its foundational relationship to the athlete's foot is a variable that is more within our control than ever before.

Ground Floor Coaching—factoring in correct posture—allows us to chip away at the impediments to peak performance. It increases our ability to prevent injury, to heal those “nagging little injuries” and, particularly for

very young athletes, can prevent injuries that manifest later in life.

To get the best perspective, let's first talk about what posture really is.

The dictionary defines posture as “the position of the limbs or the carriage of the body as a whole.”



Good posture means that the body is in proper vertical and lateral alignment and that the body's posture muscles get an opportunity to rest, even during exercise. Good posture facilitates good body mechanics, which is the foundation for the development of good technique.

Good posture allows the body to perform at optimum efficiency when walking and running and performing athletic activities. With good posture, your body is balanced without undue strain.



Poor posture usually results when posture is compromised due to descending or ascending factors.

For a perspective on descending posture distortion, imagine a couple of bricks resting on one of your shoulders. In order to maintain your balance, you'd compensate by leaning away from the weight. Of course, this would tense various muscle groups throughout your body.

From that point of effect on your shoulder and going down, your posture would be compromised. Muscles and joints all the way down to your feet would be subject to undue stress as long as you stood and carried that weight.

Ascending posture distortion is far more common, materializing when posture is compromised from the point of effect upwards. Unknown to most coaches, the root cause of

most ascending posture distortion lies in the feet. That is my focus for this piece.

CAUSE OF POOR POSTURE

The hidden rascal in posture distortion for athletes and many other people is a foot problem called hyperpronation; a condition generally caused by an elevated first metatarsal, which is the big toe bone. Supination is a frequent response to hyperpronation, and equally likely to distort an athlete's posture.

The elevated first metatarsal is actually a widely prevalent structural foot issue that affects up to eighty percent of the population. You may have heard of it as Morton's Foot, which is also characterized by a deeper space between the first and second toe (for more information try www.mortonsfoot.com).

This structural problem is not at all age related. It impacts the young athletes you and I coach every day.

With an elevated first metatarsal, the delayed contact of the big toe bone to the ground causes the foot to roll inwards, kind of like a tripod with one leg shorter than the others.

This causes a twisting and tilting of the ankle. The arch of the foot stretches and begins to fall. The posture distortion ascends from there.

The knees unnaturally rotate inward, and the distortion rises into the lower back, with the hips rotating forward. The neck becomes strained from the head leaning forward.

Incidentally, on this point, how many times have you scolded an athlete not to lean their head forward when they run? My research into this has shown me that the head leaning forward is a symptom of poor posture, not the source of it, or a flaw in technique.

But for far too long in track and

field, we coaches have only dealt with that one symptom, and not its root cause. Like so many other aspects of poor body mechanics, that forward-leaning head is caused by a problem elsewhere in the body, not an athlete's conscious choice.

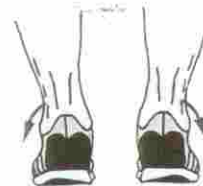
With the first metatarsal striking the ground a little later than it should, the body's automatic balancing act is thrown awry. The signals the brain obtains from the feet are muddled and as a consequence, muscle groups designed to rest between walking steps or running strides remain tense all the time.

Over time, the stress of hyperpronation results in soft tissue pain in the ankles, knees, back and neck as the ligaments and joints deteriorate under the constant strain of the body's misalignment.

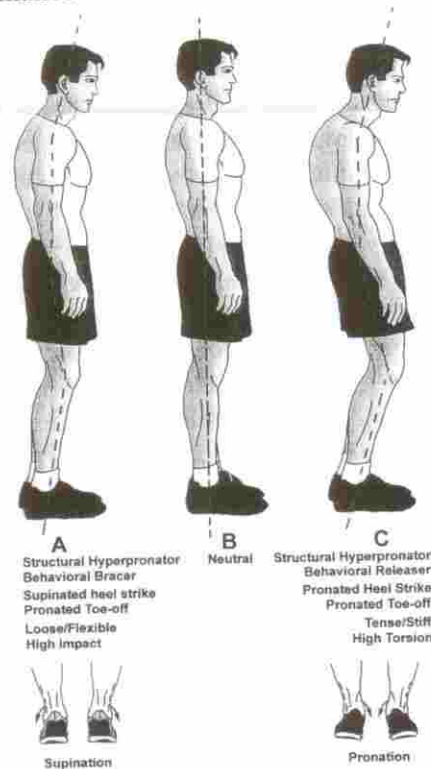
You can sometimes clearly see this posture distortion in young athletes. From a side view, instead of an erect vertical stance, you can see an "S" shape to their body, as they have compensated for the misalignment that begins in the feet. When you look at them from the back you can see that one hip is higher than the other and the shoulders are un-level as well.

Compensation for hyperpronation can also take the form of supination. Sensing the misalignment of the foot, athletes sometimes consciously or unconsciously roll their feet back out the other way in an attempt to improve their balance and make their feet feel better.

When athletes supinate, they are using constant muscle tension to brace against hyperpronation. As a supinating "bracer," with every step, their heel strikes the ground much harder than their body was designed to withstand because their feet no longer cushion the impact. The constant bracing makes their muscles tight and keeps them that way.



Whether athletes hyperpronate or supinate, the rigors of track and field can certainly accelerate the frequency and severity of injuries and impede the healing process and athletic performance



Freely hyperpronating track athletes are more subject to callused feet, knee pain and tight IT bands. Athletes who are bracing supinators get shin splints, sore calves and impact pain augmented by knee pain and tight IT bands as they age.

Both hyperpronation and supination rob our athletes of that "edge," that tenth of a second in a sprint we are all seeking in track and field, that tiny extra bit of peak performance.

I often stress to my athletes to focus on their performance and not to become preoccupied with outcomes,

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to sharpen their focus by concentrating on things that are within their control.

As coaches, we need to check our ego and take that advice, too. Correct posture for athletes is now within the grasp of control for coaches and we coaches need to grasp it firmly for the sake of our sport and the kids we coach.

I don't think most track and field coaches look at posture carefully. I'm not sure we generally see posture as something that is going to have a dramatic improvement on performance. Also, unfortunately, some coaches do not understand the anatomy and physiology of the human body.

Perhaps we coaches have been so consumed about workouts that we forget about the little things; namely that if we don't get the athlete healthy everything else is irrelevant in the long run because you're going to spend too much time healing little nagging injuries instead of focusing fully on

strength, power, speed, agility and endurance – not to forget mental strength.

I believe coaches should test athletes in many different areas just as we'd expect to be tested when we see a doctor. You wouldn't just go to the doctor and have the doctor hand you a prescription without running tests any more than an athlete should simply show up at a practice and have the coach just hand out workouts.

I have worked with amputees a lot and that's where I really started to notice the importance of correct posture. With single leg amputees where the prosthetic lock was not lined up correctly, I saw other nagging injuries develop.

Then I started to think, "Well, why would an able bodied athlete be any different?" A prosthetic device that isn't lined up correctly could generate the same effect as a leg or foot that is not lined up correctly. And so that's when I really started to hone in on the importance of the foot in proper posture and body alignment for track and field.

I'd listen to my athletes tell me about their back hurting or pain in their groin area and I began to think *maybe it's not the back or the groin area itself*. Maybe the root of the problem is actually down in the foot.

I thought about athletes in weight training who'd tell me how critical good posture is as the amount of weight goes up. If they were squatting, they'd tell me they

could even feel alignment problems in different areas of their bodies.

And so I began to talk to other coaches, massage therapists and chiropractors, people I felt had a pretty strong understanding of the way the body operates and began to focus more on the foot.

For athletes, foot problems have been around as long as people have been competitively running and jumping. The running shoe industry has responded with cushioned shoes. While they might be a bit more comfortable, often times they don't address the root problem. The kids I coached still had pain and still sustained injuries that impeded their performance.

Podiatrists have responded with orthotics but for many of the athletes I've coached, they can be ineffective. I personally have used orthotics to deal with my knee pain and like many of my athletes I found no relief.

The insight I was gaining was great. What I lacked and continued to search for was a solution. That all changed when I began my coaching relationship with Jenny Callender, an Olympic high-jumping hopeful based in Olympia, Washington.

Jenny is a graduate of the University of Oregon where the high jump was her specialized event. Her personal record was 5'9 1/4". We met at a conference where she told me she thought she had not achieved her potential yet and she had her sights set on the Olympics.

I agreed to coach her and help prepare her for the 2008 Olympic trials. She has been in training for four months with an intermediate goal of a 6'1" jump and a 6'5" jump at the Olympic trials.

I saw that Jenny was clearly an elite high jumper but her running mechanics were very, very poor. She complained of pain in her feet, ankles

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and knees and the connection between the pain and her poor running mechanics seemed obvious.

She had tried orthotics built up about an inch high on the inside of her arch in college but they didn't work so, like many other athletes she stopped using them.

Our training to increase her velocity was somewhat successful but her pain continued and we were searching for answers. She went to an area physical therapist who had a relationship with a Northwest company called Posture Dynamics that had developed an insole that supposedly helped address hyperpronation and supination.

Following that visit, I saw a dramatic change in Jenny's running right away. She said she felt no more pain. I could see that her feet were aligned correctly. She told me she felt she could use muscles that she couldn't use before, like her hamstrings.

Her running then began to improve very rapidly. Her movements were more coordinated. She no longer rocked back and forth from the inside to the outside of her foot to keep her balance. Her running mechanics became more fluid and efficient. And maybe the most important thing is that she feels now she is in control, which is absolutely critical for the high jump.

She prodded me to try the Posture Control Insoles® for my aching knees. Being from Missouri, the "Show Me" state, I talked with Bjorn Svae, president of Posture Dynamics about the

continual knee problems I've had for fifteen years.

I put on a pair of his Posture Control Insoles® and within minutes that nagging pain began to dissipate and now I have no pain. I called Bjorn and told him "I can't believe I'm not hurting." Now I am running 9.1 miles a day five days a week. That would have never happened without the insoles. The Posture Control Insoles® are thin and very flexible. The nice thing about them is they stimulate the muscles to correct the gait and posture naturally by restoring proper feedback from the ground to the feet. No big bulky, impractical orthotics.

I look for Jenny's restored posture to work wonders for her development in the high jump. For you high jump coaches out there, consider the importance of speed, balance and coordination in the high jump sequence itself.

There are ten steps in high jumping—five on the straightaway and the last five on the curve. In the straightaway you're pushing off like a normal sprinter would, which is why velocity is so critical.

When you're taking your last five steps on your "J" approach, when you hit your penultimate step, which is the second to the last, that foot is driving through to the last step and has to hit the ground low and hard so that your drive foot, your drive knee, can explode upwards.

If any of this is compromised due to the athlete's pain, misalignment or loss of balance, the jumper cannot possibly execute the jump with proper technique. I can visibly see where the Posture Control Insoles have contributed to Jenny's improved velocity, plant and take-off.

I now have a new evaluation process for athletes I train. I've started looking closer at

how they wear their shoes and the wear patterns on the sole of their shoes. Uneven wear on their street shoes can reveal hyperpronation or supination.

I look at how they walk from the front, side and back. I want to hear about their past history, especially ankle or knee pain. I have them do a knee bend and if their knees travel inwards it is an indication of hyperpronation.

As a schoolteacher, I used to change the way I taught to help kids who struggled academically. One kid I'll always remember still just wasn't getting it. I discovered that the problem wasn't the way I taught; it was that the student couldn't see the board and needed glasses.

How many athletes are out there needlessly hurting and under performing because of poor posture, despite how we adjust our workouts?

Coaching is also about removing obstacles to performance when it is within your control to do so. Now the power to restore good posture without drugs, orthotics or surgery is within your control as a coach.

Coach at the ground floor—and watch your athletes soar! See you in February at the Northwest All Sports Clinic at the Double Tree SeaTac.

Coach Bryan Hoddle is a consultant, motivator, teacher and coach. He was the 2004 USA Head Coach of the Paralympic Track and Field Team in Athens, Greece.

Hoddle was selected as the 2001-2002 Veteran's of Foreign War Teacher of the Year for the State of Washington and received the 2001-2002 Veteran's of Foreign War National Citizenship Education Teacher Award.

Hoddle has taught for 26 years in public schools in the State of Washington. He is a nationally respected motivational speaker and is past president of the Washington State Track and Field Coaches Association and is the current Washington State High School Representative for USATF, a USATF Level I Instructor and USATF Level II Coach specializing in sprints, hurdles and relays. ■

