

A New Look at *Posture*

In program design it's important to address proper body alignment

BY **KIM GOSS, MS**



Posturologist Paul Gagné performing a postural assessment in Napa, California. To his right are BFS writer Laura Dayton (blue shirt) and BFS Editor Kim Goss.

The basic theory of corrective exercise is that you stretch muscles that are tight and you strengthen muscles that are weak. One desirable result of this exercise combination is that posture will improve, and this will translate into better athletic performance and less risk of injury. Too bad it's not that simple.

Paul Gagné is a strength coach and Posturologist who trains athletes and high-profile clients in the Vic Park Center in Montreal, Quebec. Rather than viewing postural correction as a simple matter of stretching and strengthening muscles, Gagné considers many other factors.

"The popular approach of trying to correct posture only through corrective exercise might be fine if you were

working with a cadaver," says Gagné, "but this approach ignores many other factors, such as the role of the nervous system. This is why so many of these so-called 'functional training' exercises fail to correct posture. I'm not saying that corrective exercises are worthless but that the best results come from a multidisciplinary approach."

Although presenting Gagné's entire training system is beyond the scope of a single article, here are some of his ideas that will help you look at posture from a new perspective.

The eyes have it. One way that the brain receives information about the body's orientation in space is through the eyes. A convergence test is one in which an object is brought towards the nose. If one eye comes in before the

other, this reveals a convergence problem that can cause the eyes to give the wrong information to the brain; the brain will shift the position of the body based upon this information. In Gagné's work with many professional golfers, he has found that their short game improved considerably when he corrected their convergence problems through special exercises – one of these athletes, Michael Campbell, won the US Open, beating Tiger Woods.

To fix the shoulders, first fix the feet. Gagné believes that you can't adequately resolve the problem of round shoulders without first looking at the feet. "Those who have round shoulders have problems with the feet as well, especially with valgus [flat] feet, which shift the body forward," says Gagné. "The result is that the muscles of the upper body are always under excessive tension, fighting gravity. Such tension makes it even more difficult to stretch and strengthen the upper body muscles that contribute to round shoulders." To combat this forward lean, an individual can use orthotics or, as Gagné refers to them, postural insoles.

Straightening your teeth can straighten your spine. If you've spent a lot of money on orthodontists, you'll be happy to know that fixing the teeth can influence posture. Seriously. For example, an overbite (overlapping of the upper teeth over the lower) can cause the head to move forward excessively; and an underbite (overlapping of the lower teeth over the upper teeth) can cause the head



Photo courtesy Bernard Bricot, La Reprogrammation Posturale Globale, Sauramps Medical.



An eye convergence problem that can cause the eyes to give the wrong information to the brain; the brain will shift the position of the body based upon this information. Correcting the eyes will correct the posture, as shown with this gymnast.

to move backward.

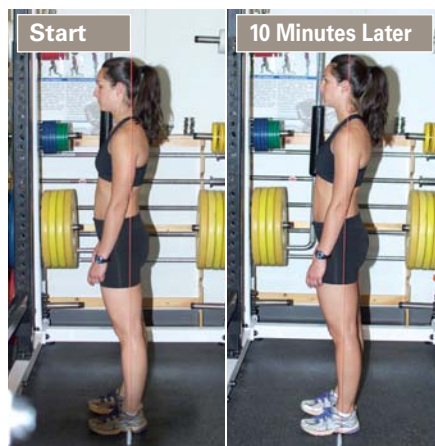
The Olympic lifts do the body good. Gagné says that weightlifters often have superior posture, and their pulling movements can help correct postural problems. For the rotator cuff muscles, especially those involved in external (backward) rotation of the shoulder (such as the infraspinatus and teres minor), Gagné says that many dumbbell and cable exercises are effective in this area. “But for the most ‘bang for your buck,’ you can’t beat snatches,” he says. “Seldom do you see Olympic lifters with rounded shoulders, and one reason is that snatches effectively develop not only the external rotators of the shoulders but also the mid-back muscles that pull the shoulder blades back.”

Don’t forget the neck. Neck strength is also an issue, as most people with round shoulders also have forward head postures. A four-way neck machine offers several safe, key exercises to work the major neck muscles. A primary exercise is neck flexion (forward bending), but Gagné prefers that you perform all the major neck exercises, as the neck is often weak in several planes of motion.

Chin-ups do not pull the shoulders back. Many coaches prescribe chin-up and pulldown exercises to correct postural problems such as round shoulders. The problem with this logic is that one of the primary functions of the latissimus dorsi (lats) is to internally rotate the upper arm bones. The result is that chins and pulldowns worsen an existing problem.

One problem with having round shoulders is that it causes the upper back muscles – the infraspinatus and teres minor and major – to be stretched, internally rotated and under continual tension. “The more rounding, the more tension,” says Gagné. “This unnatural condition makes the shoulders more susceptible to shoulder impingement syndromes and the shoulder joint more susceptible to dislocations.”

Gagné says a better alternative to



Postural insoles will reprogram the body to shift to a normal alignment, as shown by these photos taken just 10 minutes apart.

chin-ups would be rowing exercises; in severe cases, isolation exercises also should be performed for other muscles involved in pulling the shoulders back. Such muscles include the rhomboids and lower trapezius, which are located on the upper area of the back.

The lower abdominals do exist.

Many exercise authorities and medical professionals will claim that the rectus abdominis, the muscle responsible for shaping the envied “six-pack,” is just one long muscle that extends from the top of the sternum and rib cage to the pubic bone. For this reason, many trainers believe there is no such thing as lower abdominals. Gagné disagrees.

While it’s true that from an anatomical standpoint the lower abdominals don’t really exist, Gagné says that for training purposes the rectus abdominis can be divided into two sections: supraumbilical and subumbilical. “*Supra* essentially refers to the part of the rectus abdominis area above the bellybutton, and *sub* refers to everything under the bellybutton.”

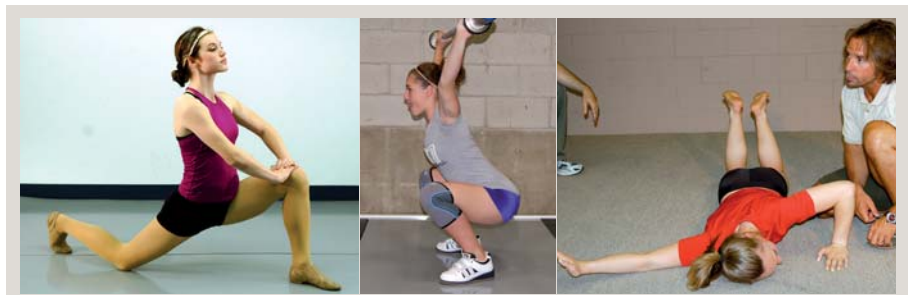
Gagné says the subumbilical section plays an important function in maintaining proper posture, and he explains that the excessive lumbar curvature displayed by some gymnasts may be due in part to weakness in the lower abdominals. This unnatural posture may contribute to lower back pain by reducing the shock absorbing qualities of the spine. Further, Gagné says the problem is compounded if one side of the subumbilical muscle is underdeveloped, causing excessive rotation of the spine that can increase the risk of disk injury.

Training the lower abs can help athletes run faster. Although Gagné admits that the entire rectus abdominis is activated to some degree in virtually every exercise, it’s possible to emphasize specific segments of the muscle, such as by positioning your body differently.

He says this effect is similar to what happens when bodybuilders attempt to develop specific areas of the pectorals by performing bench presses on an incline or decline.

In terms of athletic performance, when the pelvis is anteriorly tilted due to muscle imbalance, the lower abdominals are stretched and become difficult to contract and contribute to sports performance. Thus, a tennis player with weak lower abdominal muscles would not be able to generate as much power on a serve. “All macro movements in sports depend on micro movement,” says Gagné. “All this current emphasis on movement training for athletes is fine, provided the segments are strong enough to properly coordinate.”

Gagné says there is convincing research to show that an athlete can increase stride length, and therefore running speed, with proper development of the lower abdominal muscles. If weak lower abdominals are preventing



Three types of stretches that can be used to help correct postural problems are (L) static; (M) dynamic; and (R) myofascial stretches developed by Guy Voyer, DO.

your pelvis from rotating properly, then every time you drive your rear leg back into extension, the catch-up phase is compromised. Weak lower abs can also change running mechanics.

Dynamic stretches are dynamite.

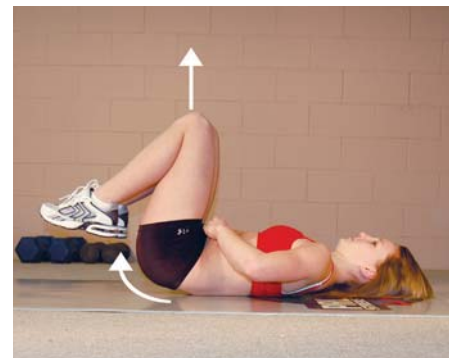
Gagné also uses several dynamic stretches, such as the BFS power balance drills, to improve posture. “In addition to stretching the middle back, these dynamic exercises give you awareness of the degree of tension that might be present in your lower back,” says Gagné. “Excessive tension can affect athletic performance and make the athlete more susceptible to injury.”

Bones don’t have brains. To deal with postural issues, manipulation is often recommended. This is fine, but Gagné says that after a manipulation, the tissues that have been pulling those bones out of alignment could still be tight. Although static stretching and PNF stretching may help, Gagné prefers to use a more aggressive type of stretching called myofascial stretching. This type of stretching involves prolonged muscular contractions – and it stretches not just the muscles but also the fascia, which is the covering around and between the muscles. “It’s not that you cannot achieve the desired results with traditional methods of stretching, but I’ve found that myofascial stretching gives better results.”

Soft-tissue work does work.

Despite a good stretching program,

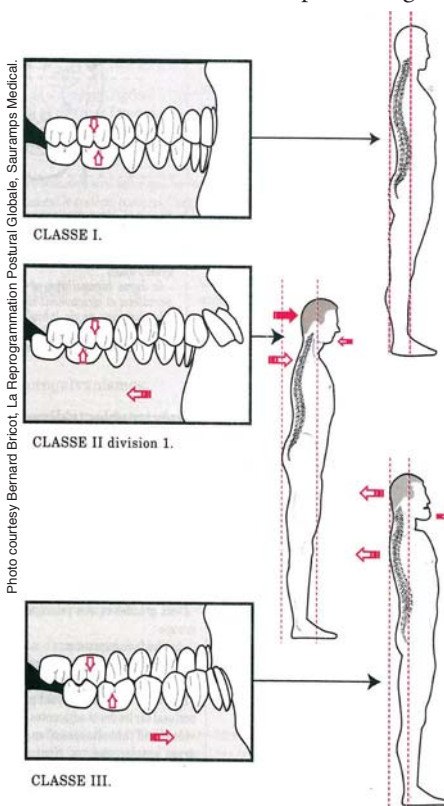
sometimes soft-tissue work such as massage is necessary to correct postural problems. “If there is chronic tension in the middle of the back, it can affect your ability to correct round shoulders,” says Gagné. “In these cases it may even be necessary to get some soft-tissue work [such as Active Release Techniques®] on this area to break up adhesions and scar



Isolating the subumbilical portion of the rectus abdominis (lower abs) may improve posture and athletic performance.

tissue that prevent postural corrections from being achieved.

“Structure dictates function, so if your structure is changed because of overuse of certain movements or through many other factors that can influence posture, your function is going to be changed,” says Gagné. “Strength coaches and anyone helping athletes perform better need to look beyond just corrective exercises to determine the actual causes of poor posture. Only then can their athletes fulfill their physical potential.” **BFS**



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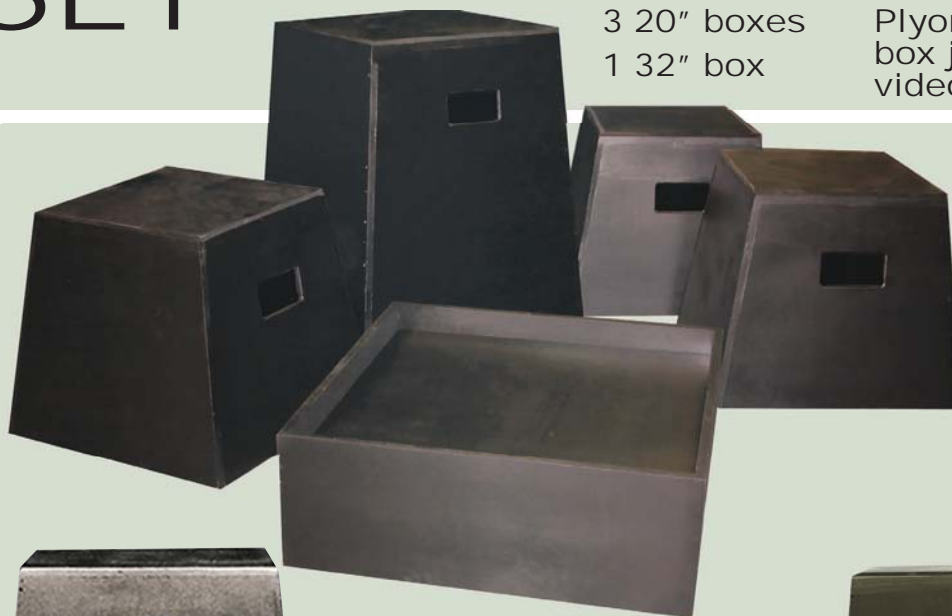
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