

Muscle size is not necessarily an indicator of muscle function. Indonesia's Erwin Abdullah and Bulgaria's Yoto Yotov both competed in the lightweight (about 150 pounds) bodyweight division. Abdullah snatched 314 pounds and clean and jerked 418, whereas the more slender Yotov, a two-time Olympic silver medalist, snatched 341 and clean and jerked 424.

The Truth About Functional Training

Dispelling myths about how to train for optimal performance

BY **KIM GOSS, MS**

I lift things up, I put them down!" is what a massive bodybuilder asserts in a popular ad for the health club chain Planet Fitness. It's an apt description. Too bad some strength coaches insist on complicating strength training by misapplying functional training

methods — too often getting stronger seems to be an afterthought.

The idea of functional training is to use workouts that are specifically designed to enhance the performance of athletic pursuits or daily activities. Running uphill is considered a

functional training activity to improve a fullback's leg power; running downhill is not. Performing heavy sets of 1-3 reps in the power clean or power snatch is considered functional training to increase vertical jumping ability; performing 10 reps in these exercises with

light weights is not. These examples are fairly clear, so let's explore some ideas about functional training that are not so obvious.

Canadian strength coach and Posturologist Paul Gagné has trained athletes and high-profile clients in the Vic Park Center in Montreal, Quebec, including over 40 NHL players and dozens of professional athletes in golf, MMA and football. In this exclusive interview, I asked Coach Gagné to share his ideas on the current trends in functional training.

BFS: *Do you believe in early sports specialization?*

Gagné: Athletes in some sports, such as gymnastics or figure skating, must specialize early to reach the elite level. The tradeoff is that if you specialize in just one sport, you have to spend a lot more time performing general strength and conditioning outside your sport.

BFS: *With a new client, do you stop sport-specific training and focus on correcting muscle imbalances?*

Gagné: No, I don't agree with some strength coaches who believe you must correct all muscle imbalances first before performing any athletic fitness training. Let's say I have a new athlete and will be able to train them in the off season for 15 weeks. For the first three to four weeks, depending upon the athlete's posture, I will seldom spend more than 20 minutes on corrective exercises, and I will spend the remaining 40 minutes on core lifts such as squats and power cleans. After that initial training phase, I will spend even less time per workout. In the next season if I have the opportunity to work with that athlete again, I may only need to spend 10 minutes on corrective exercises for the first few weeks.

BFS: *What is your take on the importance of single-limb exercises in*

functional training programs?

Gagné: What I've seen over the years is that after my athletes perform a training cycle where they emphasize single-leg exercises, when they go back to two-leg exercises they lift much heavier weights. One example is performing three weeks of lunges and step-ups,



Strength coach Paul Gagné has trained over 40 NFL players. Here he is shown spotting Joe Rullier, who was drafted in 1998 by the LA Kings.

then progressing to a cycle of back squats and deadlifts. But I also believe that performing bouts of single-limb training helps keep the athlete healthier.

I'm paid to make my athletes' careers last. I would rather have an athlete squat only 300 pounds and play for 10 years than be able to squat 500 pounds and play for only three years. I've been training professional hockey players for 25 years, and I've never seen a correlation between how much money they make and how much they lift in the weightroom. My strongest hockey player in the weightroom barely played in the NHL, whereas another of my players who can barely bench press 150 pounds makes \$6 million a year! It's not that strength training is not important, but you do have to look at the requirements of the sport to determine what to specialize in. In hockey, for example,

one of the key requirements is balance – if you don't have balance, it really doesn't matter how strong you are in the weightroom. Likewise, if you don't have exceptional hand-eye coordination, you will struggle in a sport such as baseball.

BFS: *Are muscle imbalances the most likely cause of knee buckling during squats and jumping, putting the athlete at a high risk of tendinitis or ACL injuries?*

Gagné: I've heard therapists and strength coaches say that knee buckling during a squat is a result of weak glutes or excessively strong or tight adductors. Before considering these factors, I would first look at the feet. Often you'll find that if you elevate the heels, such as by putting a small weight plate under each heel, squat form improves immediately and the knees don't buckle. Elevating the heels helps align the ankles with the feet, which is one reason I'm a big fan of weightlifting shoes. The general guideline is that if you try to perform a squat with your big toes elevated and your knees buckle, you need to wear weightlifting shoes, orthotics or postural insoles.

BFS: *Do you have any tips that can help athletes squat better in a classroom setting with a large group of athletes?*

Gagné: First – and BFS has recommended this – have your training partners act not only as spotters but also as coaches providing each other feedback about their technique. I also like the idea of squatting in a power rack in front of a mirror for 3-4 weeks. What you do is make a plumb line (a string with a weight at the bottom) and hang it at the back of the squat rack. That way, when athletes squat, they can see if their knees are buckling or if their weight is shifting to one side. This provides immediate feedback so they can try to self-correct between reps or even during a repetition.

BFS: When kids squat, they often get pain in one side of the upper thigh, near the hip. What causes this?

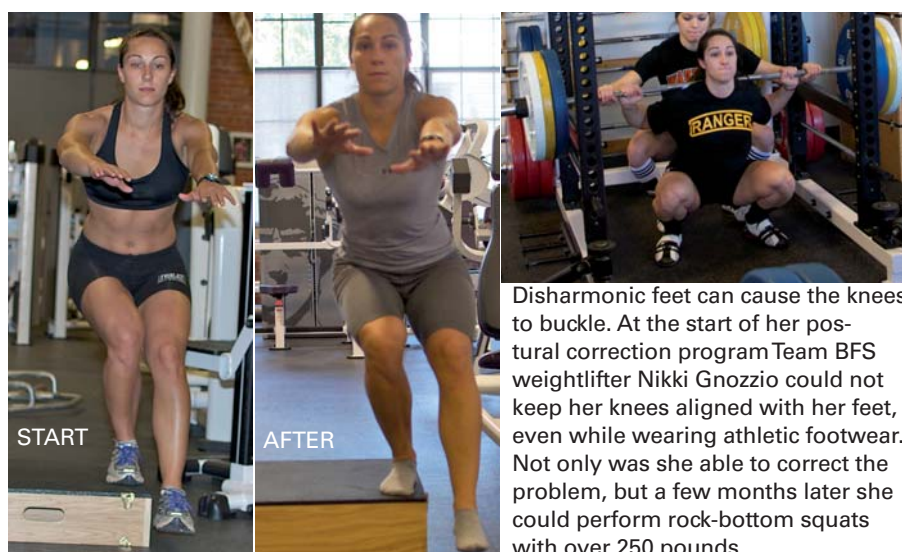
Gagné: Again, this is usually a case of disharmonic feet, which means one foot pronates and the other supinates. This causes rotation of the pelvis so that one hip flexor will be tighter than the other. Getting soft tissue work such as ART® will help with the symptoms and often provide immediate relief, but the condition will most likely come back unless the feet are corrected.

BFS: What is your opinion of leg curls as a functional exercise?

Gagné: It's a fine exercise, and one of the few machine exercises that I do like, but the hamstrings do much more than simply flex the knee. They also extend the hip. I often ask, "What is the most important muscle when you kick a soccer ball?" Most people will answer "quads." Certainly, kicking involves hip flexion and knee extension, but the power and precision of these movements are influenced by the hamstrings; that's why these muscles also need to be developed. For this reason I really like the glute-ham raise for athletes. Not only does it develop the strength in hip extension, but it also develops the knee flexion function of the hamstrings.

BFS: What about this idea of glute activation? Say an athlete sits around all day or hasn't had properly balanced training, does this compromise strength and biomechanics and cause their glutes not to fire?

Gagné: Unless you have some type of nervous system injury or disorder, the glutes don't shut down with improper training – if they did, you wouldn't be able to walk. I should also mention that the facedown glute activation tests to determine glute activation have limited value, and what happens in a prone position is not really relevant



Disharmonic feet can cause the knees to buckle. At the start of her postural correction program Team BFS weightlifter Nikki Gnozzio could not keep her knees aligned with her feet, even while wearing athletic footwear. Not only was she able to correct the problem, but a few months later she could perform rock-bottom squats with over 250 pounds.

to what is happening in a standing position.

The real issue has to do with the function of the pelvis, and structure dictates function. About 95 percent of the athletes I work with have disharmonic feet, a condition that causes rotation of the pelvis, which causes one glute to become stronger than the other.

BFS: What about chiropractic as a tool to help alignment?

Gagné: I don't like the idea of adjustments being the sole method of treatment for a misaligned pelvis. Often what happens is that someone gets an adjustment and they feel better immediately, but the next day everything is back the way it was – as they say, "Bones don't have brains!" Having said that, many chiropractors do use soft tissue treatment as their first choice, and then decide if an adjustment is necessary.

BFS: What is your opinion of glute bridges, which are becoming more popular in functional training?

Gagné: Glute bridges are good exercises. I've used single-leg variations as a warm-up, but they are just another tool in the toolbox. The problem comes when they are performed by someone who has poor pelvic alignment or who

goes into hyperextension, as I've often seen happen in YouTube videos. In these cases this exercise could cause more harm than good, such as by injuring abdominal muscles or the disks of the lower back.

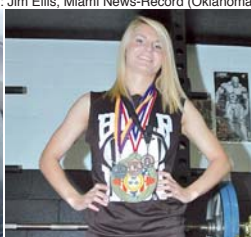
BFS: In dealing with postural issues, what type of stretching is best?

Gagné: Static stretching and PNF stretching are good, but when it comes to stretching before training, dynamic stretching is best. Postworkout I like to use a relatively new method called myofascial stretching created by Dr. Guy Voyer. This type of stretching affects not only the muscles but also the fascia, which is the covering around and between the muscles. This type of stretching is extremely difficult to learn solely from books or videos. You really need to have an instructor teach it to you.

BFS: What is the correct way to prevent hamstring pulls? Is it by stretching the hip flexors and strengthening the hamstrings?

Gagné: A study performed on sprinters found that hamstring flexibility was statically irrelevant as a risk factor for hamstring pulls; what was relevant was the posture of the pelvis. When a person has excessive anterior

Photo: Jim Ellis, Miami News-Record (Oklahoma)



Jessica Marie Staggs was the recipient of the 2012 BFS High School Female Athlete of the Year. Staggs is an exceptional athlete who excelled at several sports while attending Wyandotte High School in Wyandotte, Oklahoma.

pelvic tilt, the lower abdominals and hamstrings are under continual stress, and that could make an athlete more susceptible to a hamstring pull. Further, having the abdominals always under stress makes it difficult to jump or make a quick stride. That condition could also lead to a hamstring pull.

BFS: *Would abdominal training help someone who has excess anterior rotation of the pelvis?*

Gagné: Yes. What you want to work on is the section of the abdominals called the subumbilical, the area

under the bellybutton. Weak muscles here could contribute to excessive anterior pelvic tilt. What's worse is when just one side of the subumbilical muscles is underdeveloped, as this causes excessive rotation of the spine, which can increase the risk of disk injury.

BFS: *How about standing on stability boards to prevent ankle strains and sprains?*

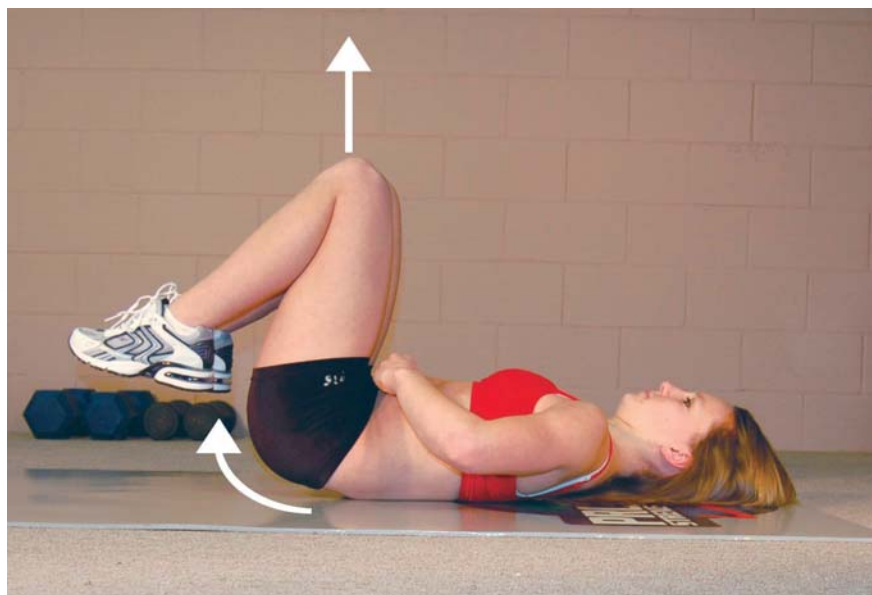
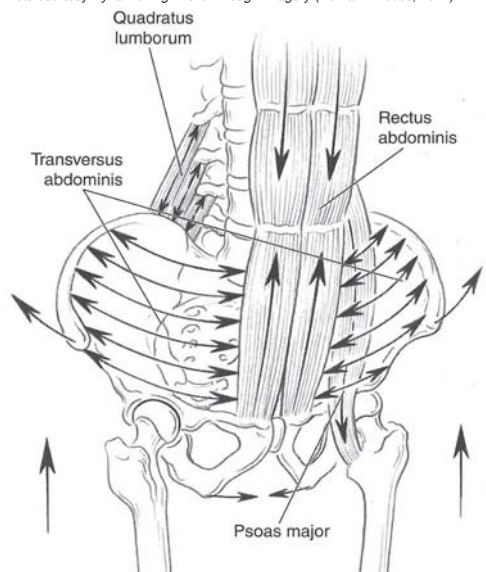
Gagné: It's been shown that these devices mainly destabilize the upper body rather than the lower body.

Again, one of the common causes of lower body injury is disharmonic feet. A common scenario is that if someone with disharmonic feet stands on their right leg, they lose their balance to the right; when they stand on the left leg, they lose balance to the right and their knee will buckle inward. This type of posture will contribute to the risk of injury not only to the ankle but also the knee in the ACL and MCL.

BFS: *Do you believe some athletes are born quad dominant?*

Gagné: I don't like that term, and I would even argue that it does not exist. What you are likely seeing with a quad-dominant person is simply a reaction to valgus [flat] feet. A valgus foot creates more tension on the vastus medialis. Also at work is the "train-what-you-see syndrome," where someone only trains the muscles they can see in a mirror, such as the quads and chest, but neglects the muscles on the back, such as the hamstrings and rhomboids. This is a mistake. To reach your potential as an athlete, your strength and conditioning program needs to be balanced – that's what true functional training is all about! **BFS**

Photo courtesy Dynamic Alignment Through Imagery (Human Kinetics, 2012).



These lower abdominal muscles are often weak in athletes who possess an excessive arch in the lower back. Shown is an exercise that isolates the subumbilical section of the abdominals.

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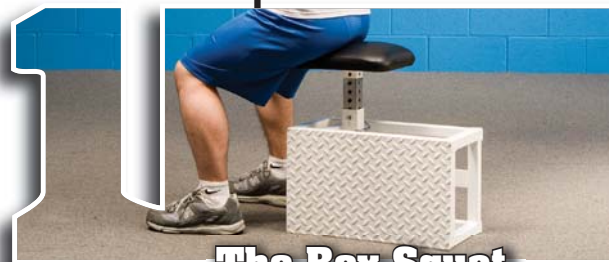
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