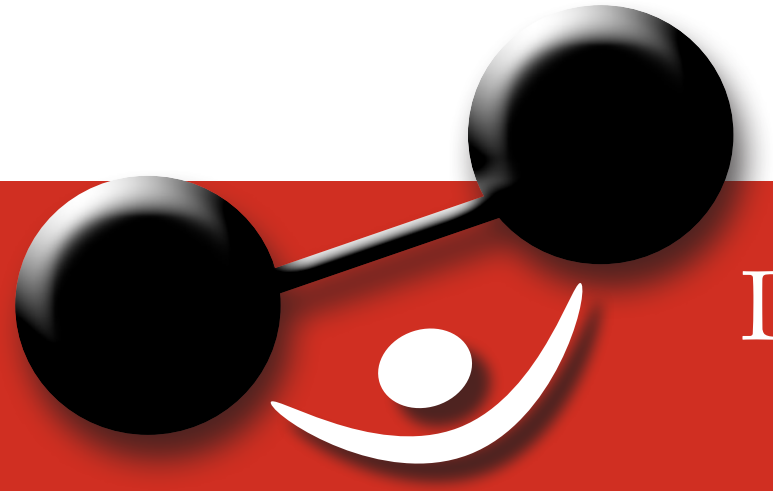

Different Braces for Different Places:

The Ins-and-Outs of Proper Abdominal Bracing

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Introducing the Brace

"Just tighten your stomach; like someone's about to punch you in the gut."

For the better portion of my lifting career, that one expression stood as the breadth of my knowledge of abdominal bracing.

I heard it from my high school strength coach years ago, and I'm sure it was something he learned from a coach years before that. It was a simple cue, so I did as I was told, never expecting there might be more to it. And how could I blame him? Abdominal bracing has been brushed aside for generations of lifters. Those privy to the knowledge seem to fall into two categories: those in pain and those treating it.

Admittedly, abdominal bracing isn't the sexiest topic. Most of our clients are striving for less body fat, bigger muscles, or more powerful lifts; consequently, clinicians find it difficult to spend the extra time to teach a proper brace.

But if your clients' health is a priority, as it should be, you do them a disservice by not addressing abdominal bracing.

And if they're only concerned with chasing performance goals? It's simple — when your clients don't employ abdominal bracing techniques during their training, they're leaving pounds on the bar.

It all begins with *superstiffness*.

Defining Superstiffness

When Dr. Stuart McGill was asked what defines and separates the truly great athletes from the very good, he provided the answer, "I have measured muscle contraction in many top athletes. Their ability to rapidly contract muscle is astounding, but even more astounding is their ability to rapidly relax muscle" (McGill, 2009).

What he's describing is essentially a "pulse" phenomenon. Imagine Tiger Woods in his down swing or Georges St. Pierre in the middle of a side kick – these athletes must create maximum torque during their motions to deliver the appropriate force once they reach their target (golf ball or B.J. Penn's chin).

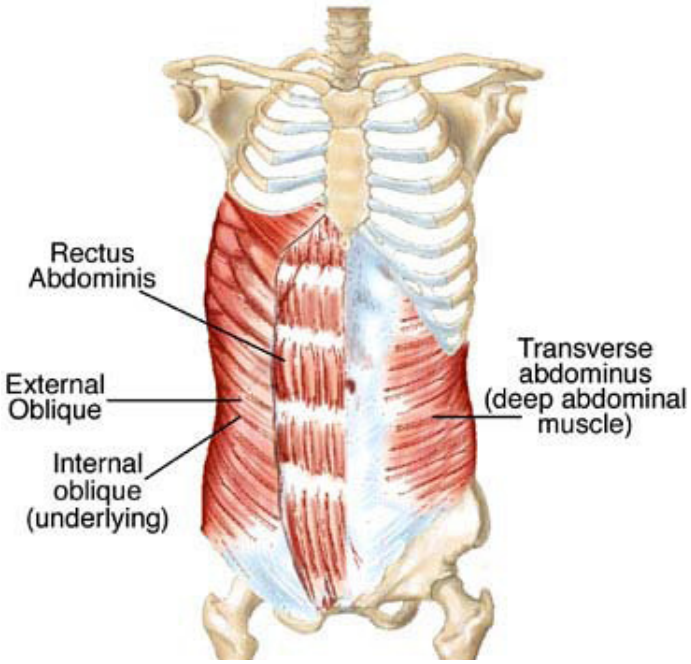
Too much stiffness in their joints and musculature limits the amount of torque they could produce. So essentially, for only a fraction of a second, they relax mid-movement. This rapid relaxation period "primes" the athlete's body for a pulse of stiffness created precisely upon impact. This pop of instantaneous contraction creates a medium through which the athlete can transfer the most force in the least amount of time (i.e. power) to an object.

The physiological state achieved at the maximum contraction point is defined in Dr. McGill's texts as *superstiffness*.

Though this phenomenon can be observed in a number of active muscles, we're most interested in how it relates to the core musculature – rectus abdominis, internal and external oblique, transverse abdominis, and some of the other ancillary stabilizers (spinal erectors, psoas, multifidus, QL, etc.).

Generally speaking, the anatomy of the core is as follows:

- Rectus abdominis running vertically, ribcage (xiphoid process) to pelvis
- Internal and external oblique running diagonal, lower ribs to pelvis
- Transverse abdominis running horizontally behind the other three



The orientation of these muscles is much akin to that of a piece of plywood, where each fiber group runs perpendicular to its superficial or deep counterpart. When simultaneously activated (as would be the case during an abdominal brace), these muscles seem to mesh and bind together, creating stiffness that is much greater than the sum of each individual muscle (Brown & McGill, 2009).

It's this stiffness that concerns us. If we can teach our clients how to produce it with optimal abdominal bracing techniques, the benefits are numerous.

What can abdominal bracing do for me?

Spine Stability

First and foremost, a properly braced spine is a safer spine. Without significant stability provided by the surrounding musculature, the shearing and compressive forces we create during training are enough to make the spinal column buckle even under a modest load. "Nature's weight belt" is a well-known concept, but its importance bears repeating.

Performance Enhancement

While the stability benefits of bracing may seem like a no-brainer, most athletes and trainers are neglecting an equally important asset – improved athletic performance.

Without digressing into functional anatomy and fascial trains, most can come to the conclusion that the human body is undeniably interconnected. Clinicians like Shirley Sarhmann, Thomas Meyers, Bill Hartman, and others have opened my eyes to the complexity of this concept, so I'll let you take *their* word for it, not mine.

Rather than neglecting it, athletes should harness this anatomical continuity to produce maximum force in their sports. Abdominal bracing allows a performer to transform the core into a force transducer, coupling extremity and torso into one power-producing unit.

Imagine a sprinter, exploding from the blocks down a 100m straightaway. The one who takes the gold is invariably the athlete who is most efficient in transferring force across the pelvis, from legs to shoulders. Stiffening the torso can eliminate potential energy leaks, ensuring the full power of the athlete's hip extension and arm swing are utilized (McGill, 2009).

This technique is also useful when weightlifters are attempting to grind through "sticking points." A sticking point is created when joint torque or strength is compromised and the lift slows considerably or, often in max-effort lifts, stops altogether. If an athlete "tightens up" at this sticking point, some of the demand on weaker joints is shifted to stronger ones. The athlete can then power through the lift (McGill, 2009).

Fight Postural Stiffness Elsewhere

I'm going to describe the majority of your clients from the ribcage down: an infrasternal angle greater than 90°, weak abdominals, overactive spinal erectors, anterior pelvic tilt, short/stiff rectus femoris, and long/weak glutes and hamstrings. This is the typical assessment of a desk jockey – someone who sits at a desk 8 hours a day, and his static posture has conformed to the chair he spends so much time in.

There are certainly a handful of issues to address when programming for this client, but gaining mobility in the right places and stability in others should hold top priority. This will produce foundational, functional movement patterns that one can build upon in subsequent programs.

Different Braces for Different Places

According to Shirley Sarhmann, some pathological movement patterns are driven by *compensatory relative flexibility*. This excerpt defining the term is from her book, *Diagnosis and Treatment of Movement Impairment Syndromes*:

> "When joints with common movement directions are in series and one joint is more flexible than the others, the flexible joint is particularly susceptible to movement. When a movement occurs at this joint when it should remain stable, it is called *compensatory relative flexibility*." (Sarhmann, 2002).

Essentially, a stiffer tissue will override a less stiff tissue, producing compensatory motion in undesired areas. Think of a client performing basic shoulder flexion - if the lumbar spine is flexible into extension relative to the client's stiff lats, the lumbar spine will preferentially extend as the client reaches overhead.

Another example might be during knee flexion as it relates to pelvic motion. Both rectus femoris and external oblique attach to the anterior pelvis (AIIS and iliac crest, respectively) and are called upon to stabilize a neutral pelvis during movement.

Often, rectus femoris becomes stiff/short in our desk jockey posture mentioned above and, conversely, external oblique becomes long and weak. When a client performs basic knee flexion, the external obliques are overpowered by the relatively

stiffer rectus femoris, which tugs the AIIS inferior and pulls the pelvis into an anterior tilt. The lumbar spine is then forced to compensate into extension due to this pelvic position, which can potentially lead to pathology (Sarhmann, 2002).

In both these scenarios, the issue was *mobility* where we needed *stability*.

The best way to fight this compensatory pattern in clients' bodies is to teach them how to produce their own stability and create stiffness to balance their movement patterns. Proper abdominal bracing is invaluable in such situations.

With the client going overhead into shoulder flexion, a stiffer core could have stabilized his lumbar spine, preventing it from going into hyperextension. Over time, this will contribute to lumbar health by reducing unnecessary compensatory spine motion and reinforcing pure glenohumeral motion.

In our knee flexion example, employment of a strong abdominal brace would stiffen the external obliques considerably, preventing the rectus femoris from dominating the pattern and pulling the pelvis anteriorly. This fix again spares the lumbar spine from unnecessary motion and will go a long way in eventually balancing tissue stiffness in the anterior chain.

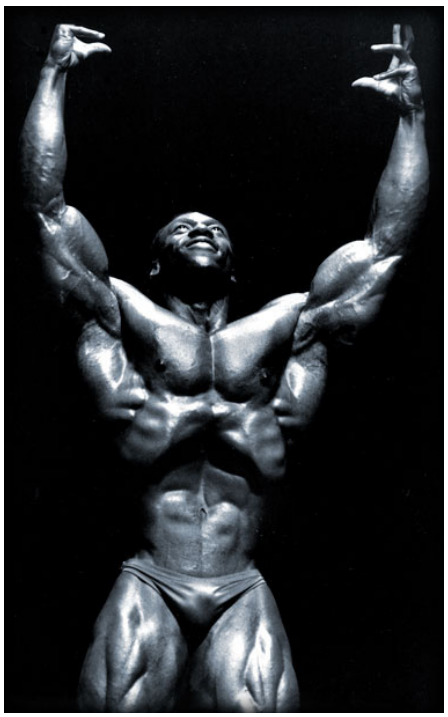
Compensatory relative flexibility is something that *must* be addressed in clients to make lasting postural changes. Regarding movements about the lumbo-pelvic-femoral complex, teaching proper abdominal bracing is the best way to restore healthy kinematics.

Myths of Bracing

Although there may be more, a few topics persist in muddying the abdominal bracing waters. Hopefully, I can provide some clarity as to what is fact and what is fiction.

"Abdominal bracing and abdominal hollowing. Same thing, right?"

While rehabbing a spinal cord injury a few years ago, the concept of spinal stability as it related to my pathology was explained to me. I learned how important the activation of a muscle called transverse abdominis (TVA) was in improving spine health and athletic performance. Concurrently, I read of professional trainers employing abdominal "hollowing" techniques with their athlete clientele to maximize TVA activity throughout training sessions.



While these techniques are widely practiced, the purported benefits of abdominal hollowing and TVA activation are not supported by current literature.

It is true that hollowing or "drawing in" the abdominals will produce increased TVA activity, but this does not enhance spinal stability and can actually inhibit the activation of external and internal oblique (McGill, 2001). The foundation of *superstiffness* as it relates to the abdominals is the simultaneous contraction of all the core muscles, not the isolation of one. Isolating TVA via hollowing techniques substantially limits the effectiveness of the core musculature in protecting the spine and improving performance. The phrase "live together, die alone" seems appropriate here.

If you happen to be sitting in a chair while reading this, a quick experiment will prove my point.

Draw in your abs, attempting to touch your bellybutton to your spine, and then stand up. Now return to the seat.

Even though we haven't covered proper techniques yet, simply produce a mild abdominal contraction and repeat the experiment. Which felt easier?

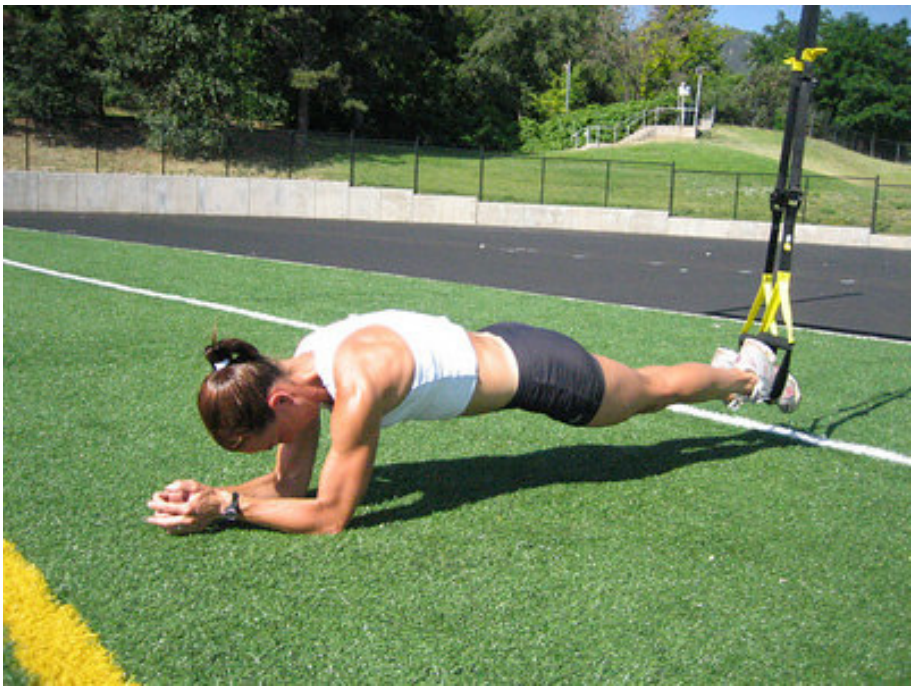
Integration, not isolation, ensures optimal movement and performance, no matter the intensity of the task.

"Just tighten your stomach; like someone's about to punch you in the gut."

As I explained in the introduction, this statement was my only guidance on abdominal bracing for quite some time. I've seen it written in articles and heard it spoken in gyms many times over, so clearly this is something that needs to be addressed.

While I don't think it's a terrible cue, it lacks the specificity clients need to produce an optimal bracing pattern. Give ten different clients this one cue and you're likely to get ten different stabilization patterns, some which might not suit the proper bracing standards we'll describe later.

Most often, I see clients "buckle down" - bringing their ribcage inferior toward their pelvis - into a rectus abdominis-dominant stabilization. This locks their lumbar spine into flexion and, over time, becomes the preferred stabilization pattern. These tendencies have a number of postural ramifications and, due to developmental oblique weakness and tissue length changes, it can become increasingly difficult to cue clients out of the dysfunctional pattern.



It's easier to teach a proper brace from the beginning than attempt to fix the postural adaptations later.

"I lift heavy and I train my core. I never have to worry about bracing."

While this one isn't quite as bad as the, "I squat and deadlift so I don't need to train my abs" argument, it's pretty close.

When programming for a client with poor glute functionality, it's necessary to first gain control of the glutes in isolation with proper activation techniques, then attempt to integrate them into more dynamic patterns.

It's counterintuitive to assume a client who can't produce optimal glute activity during manual muscle testing will properly fire them at the bottom of a 300-pound squat.

I view the activation of the abdominals in much the same way. We need to teach clients what a strong abdominal brace feels like so they can reproduce it when they need it most.

Sure, going overhead with a load or placing a barbell on a client's back will reflexively contract the abdominals to some degree. But if a client has weak obliques and is locked into an extension-dominant stabilization pattern, we can't expect that movement to clean up just because we've introduced a weight.

As a client sits back into hip flexion during a barbell Romanian deadlift, we need to be assured that they can consciously produce the stiffness necessary to keep their spine safer. If not, they need to be regressed to a point where they can master the stabilization pattern.

Exercises like planks and side planks are fantastic for developing the core endurance necessary for more advanced progressions. However, they do not indicate whether or not a client can sense instability, and then brace properly to save their spine from danger.

To reiterate, teaching a proper abdominal brace, with subsequent reinforcement within a client's program, should be one of a clinician's top priorities.

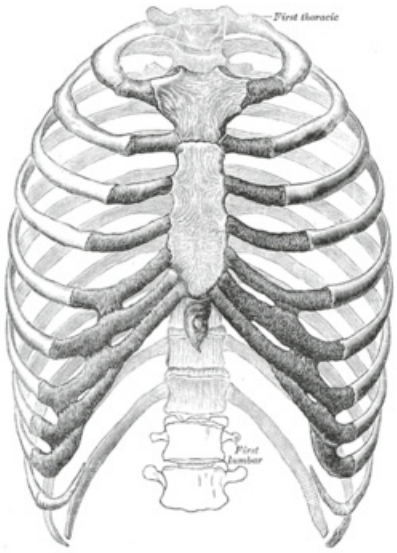
Teaching the Brace

There are three bracing techniques covered in this article – lateral-expansion bracing, reflexive bracing, and fascial raking. All serve different purposes and should be integrated accordingly with your clients.

A quick disclaimer – all of these techniques involve touching your clients in some way. While it might seem commonplace in a clinical or gym setting, please inform your clients before you go digging and poking around.

Lateral-Expansion Bracing

The *infrasternal angle* is created at the point where the lower ribs come up and meet the xiphoid process. In many of your clients, you may notice this angle to be much wider than the recommended 90˚, which indicates long or weak lower abs. We can assume this due to the rib and pelvic attachment points of the internal and external obliques.



In the *lateral-expansion* bracing technique, our goal is for the client to use ribcage position as a guide to drive proper oblique stabilization. If done correctly, we should notice a reduced infrasternal angle and palpable increased activity in the lower abs.

To coach your clients into a proper *lateral-expansion* brace, follow these steps:

1. First, place your hands on the client's lateral ribcage, in the general vicinity of serratus anterior. Provide light pressure – this will create a tactile resistance for the client to breathe into.

2. Next, cue the client to inhale deeply, laterally expanding their ribcage into your hands. Notice how the client's sternum rises.

3. Now, instruct the client to forcefully exhale, while not allowing the sternum to drop. Cue them to pull their ribs down with their abdominals. Don't be afraid to physically guide the ribs down-and-in until the client gets the hang of it.

4. Finally, palpate just superior to the ASIS. Ideally, you should feel increased abdominal activity as well as a noticeably decreased infrasternal angle.

If done properly, this creates optimal abdominal activity and stiffness in your client. It's best to introduce this bracing technique early on – find a way to work it into the first or second training session.

Even though we initiate by physically cueing the client into the brace, aim to have the client self-sufficiently bracing after a couple of sessions. Simply replacing your previous hand position with theirs provides a similar resistance and can serve as a teaching tool, reinforcing the down-and-in rib pattern. Eventually, we want our clients to gain the ability to perform this sort of a brace with no tactile cue whatsoever.

Once you can create a proper brace in a client, simply having them hold a conversation with you while braced can serve as a great training technique. They have to consciously contract the proper muscles, as well as find a way to control their diaphragm and breathe through the brace (something we'll discuss below).

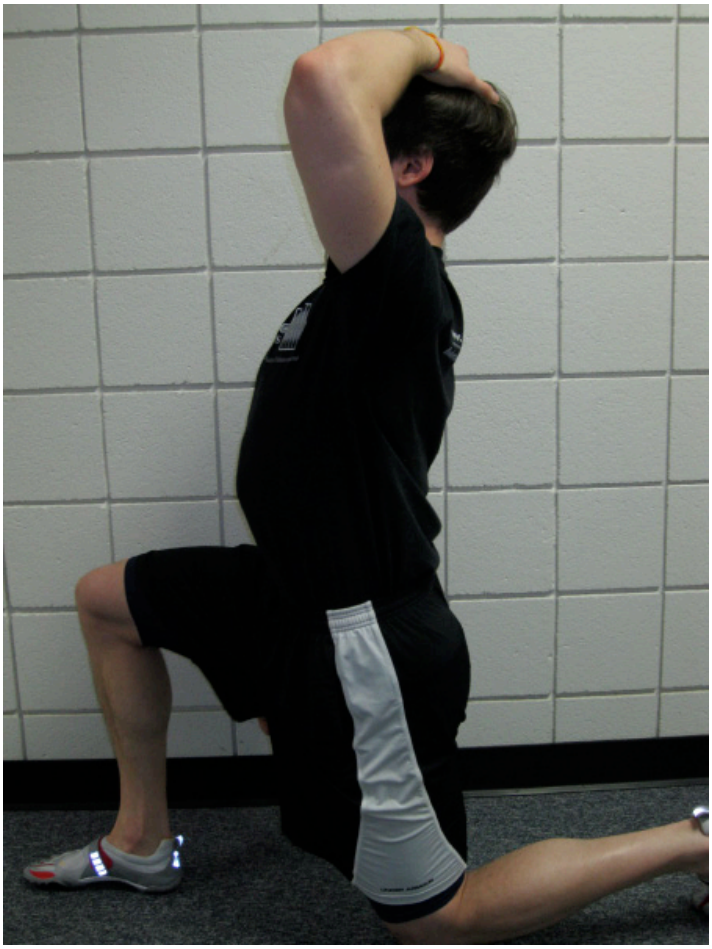
Reflexive Bracing

In contrast to the *lateral-expansion* technique described above, the *reflexive* brace doesn't actually involve a voluntary abdominal contraction. Rather, we use a reflex pattern ingrained in the nervous system to create an optimal stabilization environment for the client.

The cue is very simple – instruct your client to "get tall" or try to make their torso long. If they can't accurately create that motion, try placing a hand on top of the client's head and repeating the "get tall" cue. Like the hands placed on the ribcage in the *lateral-expansion* brace, this hand on the head provides a tactile structure for the client to lengthen into.

This lengthening of the torso reflexively engages the abdominals and creates a "skinny brace", which is a great pattern to ingrain in rectus abdominis-dominant clients.

Be watchful of the client's upper back throughout the movement – some will hear "get tall" and actually hinge in their thoracic spine, flaring the anterior ribs and lengthening the abdominals – both of which are not conducive to a proper brace. This can be an even greater problem for a client who's already in T-Spine extension statically, so coaching is crucial here.



If you can't verbally cue them out of this stabilization pattern, place a PVC pipe along their spine. The pipe should contact the back of the client's head, the middle of the upper back, and the top of the butt. The sensation of the pipe should go a long way in creating a sense for what a neutral spinal alignment feels like.

Fascial Raking

For clients who have lost touch with their abdominals altogether, the above techniques might not produce a proper brace. In this case, our first priority should be to facilitate a contraction in all layers of the abdominal wall using a technique known as *fascial* or *abdominal raking*, in attempts to reestablish the connection with the client (McGill, 2009). Abdominal activation is the first step in achieving the *superstiffness*, and its purported benefits, described earlier.

To properly perform the *fascial raking* technique, approach the client from behind and place your hands on her sides, where your fingertips lie just laterally to either side of rectus abdominis. Instruct her to contract her abdominals as much as she's capable. Then, gently, curl the pads of your fingertips into her abdomen, aiming for the deep oblique fascia, and rake your fingers across the tissue. You should be met with a stiffening of the abdominals. Ensure the client recognizes the feeling before ceasing – it is important that she knows what proper activation feels like.

While this technique can certainly facilitate a contraction in those with dormant abdominal fibers, it shouldn't be ignored in your more advanced clients. Anytime you witness a faulty stability pattern and cannot verbally cue the client out of it, raking the abdominal fascia could potentially solve the problem and reestablish the client's control.

It is imperative that you inform your clients of this technique before you plan to implement it. As I mentioned before, some clients are not comfortable with being touched and this is a somewhat invasive technique. Best to always be over-cautious than risk catching an elbow on the chin, right?

Integrating the Brace

While each of the braces described above has a place in your clients' programming, one might take precedence over the others, given the situation of implementation. Let's examine some of your potential clientele and how bracing could improve their training with your guidance.

Kathryn, age 32

A soccer mom of two, Kathryn represents your most typical, general population client. She trains with you three times per week on a total-body split with the goal of losing 10 pounds before her upcoming high school reunion. Working 50-hour weeks at an accounting firm has left Kathryn with a posture that is reminiscent of her office chair, but you're addressing that in her programming.

Stolen from Charlie Weingroff, the rule for bracing with the average client is as follows – "Always get fat when you breathe, never draw-in, and brace if you must." Since we've already nullified the proposed benefits of "drawing in" and will discuss breathing as it relates to bracing in the next section, I need to address the concept of "brace if you must" before we move on.

Simply put, bracing should accommodate the task at hand. Being that you're not placing much max-effort lifting in Kathryn's programming, the *reflexive bracing* technique should be the focus of your abdominal bracing efforts.

Remind her in half-kneeling to "stay tall" as she performs chop/lift variations and don't be afraid to place a hand on her head to give her something to elevate into. Let her planks and side planks reflexively dictate the amount of contraction that she needs to properly stabilize. During her split-squats, solidify this tall position, as her stiffened hip flexors are sure to battle her obliques for pelvic positioning.

This is not to say that you won't ever need the other two techniques I discussed. In fact, teaching a *lateral-expansion* brace early in Kathryn's programming could go a long way to creating a sense of what lower abdominal activity feels like.

But, for the most part, keep Kathryn tall. Let her reflexes do the rest.

Steve, age 21

Steve is a powerlifter. After excelling in his first few meets, Steve wants take on collegiate nationals and heard you were the best coach in town suited for getting him ready. He's as strong as an ox and as stiff as a board. He also hasn't the slightest clue of how to use his abs in competition. Hopefully, you can change that.

Returning to the "brace if you must" mantra mentioned above, there's only one logical conclusion – given his activity, Steve *must* brace. With the training load and volume typical of powerlifters, spine health must remain one of your top priorities as a coach.

Spinal stability isn't the only benefit Steve might receive from bracing, though. As I mentioned previously in the section covering superstiffness, abdominal bracing can have profound effects on performance enhancement.

Imagine Steve, grinding to lockout a 400-pound press. The ability to use his stiffened abdominal wall as a conduit to transfer lower body force could stand as the difference between three reds and three whites.

For this reason, performing the *lateral-expansion* bracing technique will play an important role in Steve's development as a powerlifter. At the outset of programming, physically cue Steve right before each of his work sets on his big lifts and instruct him to maintain his oblique contraction for the duration of the set. It's imperative that he develops the habit of creating maximum voluntary superstiffness pre-lift to stabilize his spine and pelvis to optimize his force production. I've heard one powerlifter describe the intra-abdominal pressure created by coupling *lateral-expansion* bracing with a belly full of air is like putting rocket boosters in his glutes.

As Steve becomes more proficient in creating this tension and can consciously control his oblique stabilization, leave it up to his discretion on when to implement this bracing technique. For Steve's lighter, accessory work, a reflexive bracing strategy should be implemented.

Though the *lateral-expansion* technique is fantastic for development of a rigid abdominal contraction and stabilization, over-reliance on this method can result in what's known as a *high-threshold strategy*, where a person recruits high-threshold motor units for activities normally dependent on low-threshold motor units. For example, the performance of a basic front plank should rely primarily on the activation of low-threshold motor units, which produce less force, but are more resilient to

fatigue. In contrast, if Steve is squeezing his glutes and abdominals maximally during this exercise, his high-threshold motor units (more force, faster fatigue) are called upon to do low-threshold motor unit work, and the low-threshold motor units are inhibited altogether.

Training stabilizers like prime movers does not make them better stabilizers.

Calling upon both the *lateral-expansion* and *reflexive* bracing techniques at the appropriate times will yield maximum benefit in Steve's powerlifting career.

Barbara, age 68

Barbara, along with roughly 80% of the population, is experiencing lower back pain, and has been for years. She first visited her family practitioner, who immediately referred her to a local orthopedic surgeon – a friend in your network. After examining her x-rays and MRI report, the surgeon noticed some disc degeneration – typical of someone her age – but nothing that required an invasive procedure. The best thing, he said, was for her to commence regular exercise under the supervision of a movement professional. He then referred her to you.

I'd like to avoid addressing the pathological mechanics that lie at the root of Barbara's back pain and simply focus on how abdominal bracing could immediately improve her quality of life.

During your first session with Barbara, take some time to assess her baseline core functionality. Given her pathological symptoms, it would be safe to assume weakness/dysfunction with one, if not all of the core stabilizers. No matter your mode of assessment (FMS, SFMA, typical PT evaluation, etc.), if you observe a core that cannot stabilize dynamically, you must confirm whether or not this person can consciously create the contraction necessary for proper stabilization.

After many attempts, your cues aren't getting anywhere with Barbara – she simply cannot produce a voluntary contraction up to your standard. Barbara's daily activities aren't taxing her neuromuscular system substantially and, as a result, she has lost a conscious connection with her abdominals. With this sort of a client, implementation of the *fascial raking* technique we discussed earlier can be advantageous.

Ask permission first and then instruct Barbara to stand tall. Approach from behind and perform the *fascial raking* technique as described above. While you might be met with a, "That tickles," or, "It's been years since my husband grabbed me that way," there's also the likelihood of "That took my pain away."

After experiencing pain for years, all it took was an upright posture and a little facilitated abdominal activity? I've witnessed it happen.

For someone Barbara's age, the aches and pains often become an accepted part of the aging process. There's no one there to cue her when she slumps into kyphotic posture or to teach a proper "hip hinge" for getting in and out of her favorite chair. Is there not more we can do for this elderly population than provide a printed-out sheet of stretches and send them on their way?

Know your limits as a clinician, and refer out when you must, but don't let Barbara pass through the door without "getting your hands dirty."

Once Barbara can voluntarily contract her abdominal wall without your facilitation, work towards a *reflexive brace* and hammer it home in a number postures and movements. Basic gait and sit-to-stands should be mastered in subsequent sessions, all while producing sufficient abdominal activity.

Barbara is ecstatic with the results and can't wait bring in her husband, who's been battling knee pain (the treatment of which we won't be covering in this article).

As I stated earlier, *many* other issues should be examined with back pain clients. But don't ignore something as simple as bracing. It can take away years of pain and, in Barbara's case, provide hope for a healthy future.

Breathing Through the Brace

According to physical therapist Gray Cook, a client never really owns a movement pattern until they can effectively "breathe through the end range." What Gray is alluding to is that even when we can produce the proper mobility and stability needed to achieve a certain biomechanical position, the pattern is never mastered until we can take a deep, diaphragmatic breath at the end of our range of motion.

While Gray is referring primarily to movement patterns, the same can be said about stabilization patterns with respect to breathing. How authentic is our stability if producing it inhibits proper diaphragm function?

Hopefully this final section will provide you with some strategies for creating a strong brace that your clients can effectively breathe through.

Talking through the Brace

As remedial as it may sound, holding a conversation while engaged in a proper abdominal brace can prove difficult for a number of clients. As such, it serves as the first progression towards "owning" a proper abdominal brace.

Simply cue your client into a *lateral-expansion* brace and ask them a question.

Wall Press Abs

If your client can effectively talk through a brace but struggles getting the proper abdominal recruitment during training, the wall press abs exercise is a great option to incorporate. Its foundation is a reflex abdominal stabilization coupled with the requirement of diaphragmatic breathing.

To give credit where credit is due, I'm stealing this movement from Bill Hartman at *Indianapolis Fitness and Sports Training*, whom I believe credits it to Craig Liebensen's work in the *Journal of Bodywork and Movement Therapies*. In any case, it's not mine.

Coaching the exercise is as follows:

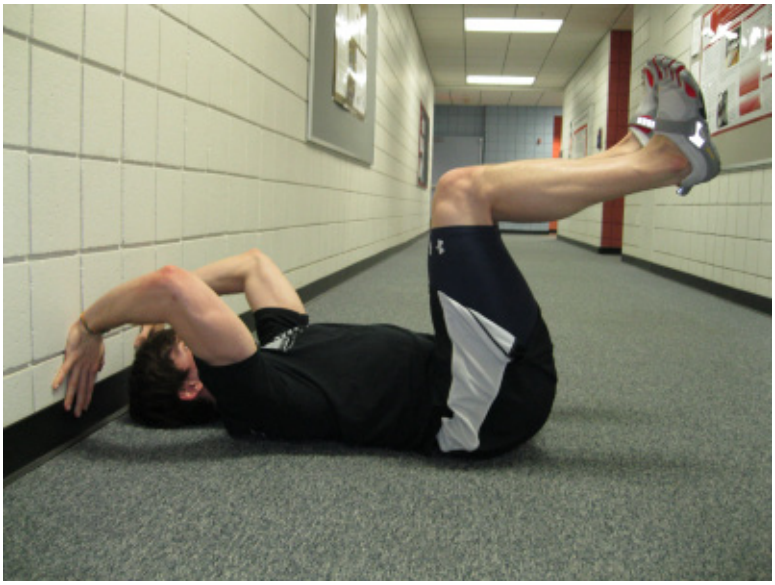
1. Instruct your client to lie supine with his head backed up close to a wall.

2. Have the client flex his shoulders, bringing the arms overhead, and then have him place his palms flat against the wall.

3. Next, cue the client to flex his hips up to 90˚, bend the knees to 90˚, and dorsiflex the ankles. This should slightly posteriorly tilt the pelvis – ask the client to maintain this pelvic position throughout the duration of the exercise.

4. Instruct the client to press through his palms into the wall overhead – this will reflexively contract his abdominal wall.

5. Then, have the client alternately drop one heel at a time to the ground, maintaining a 303 tempo for the time allotted.



This is the basic wall press abs setup. One progression would be to have your client extend the knee as the heel is dropped. Another, engineered by Shirley Sarhmann, would be to remove the reflex stabilization of the wall press and simply drop the heel, stabilizing with a voluntary contraction of the abdominals.

Start your clients with 2-3 sets of 30 seconds and progress up 60-second sets. Once a client can perform 3 sets of 60 seconds on a wall press ab, they've effectively "owned" this stabilization and can be progressed to more advanced core variations.

Still Having Trouble?

For some athletes (particularly the taller ones), no amount cueing or wall press abs will coordinate their ability to diaphragmatically breathe and stabilize simultaneously. In such situations, Stuart McGill has described an interesting method for getting these athletes to breathe through their brace.

First, he has his athlete perform relatively high-intensity cardiovascular work to increase oxygen debt to the tissues, thus increasing respiratory rate. After a steady-state of increased respiration has been achieved, he pulls them out of the cardiovascular modality and sets them up into a basic side plank for time.

By doing so, Dr. McGill forces the athlete to co-contract the diaphragm and abdominals simultaneously and systematically, lest they fall over. This "trial-by-fire" method to teaching breathing should not be your first progression, but could prove beneficial in training an athlete with a stubborn diaphragm.

One Exception …

While we absolutely want our clients to "own" their stabilization patterns, spinal health remains the number one priority.

For safety's sake, don't have your clients attempt to breathe through their brace in the hole of an 800-pound squat. Big bellies (full of air) should accompany big lifts.

Summing It Up

Abdominal bracing isn't just for those living with the painful reality of improper spine mechanics.

Nor is it exclusive to those trying to add pounds to their powerlifting total.

The truth is, abdominal bracing can work for *everyone*. The keys are understanding how to cue your clients into a proper brace and how to create a level of brace appropriate for the task at hand. I hope after examining my recommendations you'll grow to feel comfortable in doing so.

As I previously stated, this topic isn't as flashy as wave-loading, or high-threshold hypertrophy, or density circuits for fat-loss. But it's undeniably more important.

Brace your clients. Improve their posture. Boost their performance. Save their spines.

Simple as that.

About the Author

Eric Oetter is a student at the University of Georgia majoring in Exercise and Sport Science. After concluding a Division-1 football career at the Georgia Institute of Technology, Eric has ardently pursued his passion for coaching, garnering experience with clients of all ages and ability levels.

During the summer of 2010, he spent three months interning at *Indianapolis Fitness & Sports Training* under Mike Robertson and Bill Hartman bolstering his foundational education for a future as a clinician. Eric is thrilled to have the opportunity to further his development as an intern at *Cressey Performance* in the summer of 2011.

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Appendix

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