

The 10 Movement Principles

An Expansion on the Principles Section of the book, Movement

Principle #1

Separate painful movement patterns from dysfunctional movement patterns whenever possible to create clarity and perspective.

Pain produces inconsistent movement perception and behavior. We should not exercise around or into pain hoping it will get better without first attempting to manage it systematically. The movement screen at its core is designed to capture pain and identify situations that should be properly evaluated prior to consideration for exercises, activities and conditioning programs. The movement assessment improves clinical perspectives by separating pain and dysfunction, and placing equal focus on movement dysfunction to manage regional interdependence.

The Functional Movement Screen (FMS) separates pain by pretty much kicking out pain. If movement causes pain, the screen is over. The Selective Functional Movement Assessment (SFMA)—the medical counterpart of the movement screen—picks up where the movement screen ends.

There are two situations. If someone already knows that movement causes pain, we go straight to a medical situation where the SFMA can be part of the overall evaluation tool.

The FMS, on the other hand, is basically targeted toward people who are asymptomatic and don't have any pain, but wish to have a little more specific orientation or profiling prior to training.

A lot of us don't achieve our training goals. Sometimes it doesn't have anything to do with our work or our efforts. Maybe we're not aiming in the right direction. The movement screen adjusts our aim, but in the event it uncovers pain, it also requires that we need to maybe figure out a little more about it.

Pain is something that is often coupled with movement. Since we've been training for the last 30 years under the adage 'no pain, no gain,' it's hard to

hear a guy who's a strength coach, physical therapist or sports enthusiast being as vocal as I am about separating out the pain.

It's what I've learned about motor learning. It's what I've learned through clinical practice for quite some time that tells me you're not going to meet a lot of your goals by working around the pain. It's better to take the time to understand it.

Now, I'm not talking about skipping a workout on a day when your muscles are sore or tight, as I stated early on in *Athletic Body in Balance*. The pain we're talking about is reproducible. It's consistent and it's usually localized around a joint.

Joint pain, unlike muscle soreness, is a legitimate red flag. Muscle soreness usually changes when an appropriate warm-up, foam roll or flexibility effort is performed. Sometimes the best remedy for muscle soreness from a good workout or athletic competition is actually to get moving again. That's not what we're talking about.

We're talking about sharp stabbing pain, dull aching pain or pain associated with redness and swelling. If you push against that type of pain, it's going to push back. It's going to push back harder and it's going to win. We need a systematic way to separate the pain and movement, so we know the type of problem.

I wish I could tell you how many email messages and questions I've received. 'Hey Gray, I have low back pain. What exercise should I do?'

Wow, you must think I have a crystal ball!

I have no idea what's causing your back pain. There is no preset program to undo what is happening to you. Your back pain could be a completely different issue than another person who's getting ready to ask the next question three minutes from now. It's a really inappropriate question if you think about it.

I can ask this if you're a real estate agent, 'Hey, what should I sell my house for?' What's the next

question? You need more information! That's a pretty dumb question. It's not even an answer you want to hear because it's going to be wrong in a million and one cases.

The first order of business is to subscribe to and use systems that fit this principle. I designed the FMS and the SFMA specifically to adhere to this principle. I didn't design this principle to work with those tools. I designed those tools because I believe in this principle.

Principle 2

The starting point for movement learning is a reproducible movement baseline.

Professionals working in physical rehabilitation, exercise and athletics must adopt systematic approaches that transcend professional specialization and activity specificity. Movement professions need movement-pattern standards. The book *Movement* develops two systems that logically rate and rank using movement pattern fundamentals.

We all come to movement from different places. God bless those places—kettlebells, Pilates, yoga, military boot camps, athletic conditioning, strongman competitions, wrestling, gymnastics, dance. I could go on and on.

We come to movement from many different methodologies, but movement doesn't serve those methodologies. Those methodologies serve movement. I can see how every one of those disciplines, and even more than those, could still agree on a movement baseline.

A movement baseline just creates a foundation. What do I mean when I say foundation? I don't mean strength, endurance or skill training. A foundation for movement demonstrates that you have an appropriate perception and capacity for behavior. This means you can feel what's happening on the outside and do what's necessary on the inside. When I say foundation, I'm talking about alignment, mobility, stability and functional proprioception.

What I'm really saying is that your movement system has the capacity to learn.

If we see deficiencies, dysfunctions, asymmetries, mobility problems, motor control, stability or balance problems, we really shouldn't expect the Pilates routine to arbitrarily fix the problem. It might, and it might not. You're just hoping it'll work or you're just hoping that Turkish getups, strongman training or a little more cardio will fix the problem. But you haven't clearly defined the problem yet.

It's very important to me that even though we come at movement from different disciplines with different skill sets and different methodologies, we should at least agree on the fundamentals and basics of opening the sensory pathways and assuring that the motor pathways work.

There are a lot of different kinds of chemists, but they all work off the same periodic table of elements. Mechanics working on internal combustion engines all agree on the principles of internal combustion, even though one may be endorsing Toyota and another may be endorsing GM.

Different disciplines can still have some of the same fundamental baselines. It's really funny—when we get into fitness, performance and athletics that all use movement, for some reason we invent tests that support our discipline, but that may not create those fundamental parallels.

Believe it or not, a lot of the strength and conditioning techniques we use with NFL players is used in the clinic with people who have total knee replacements and vice versa. A lot of the stuff we talk about at the RKC from a Turkish getup to an arm-bar, I have used in neck therapy at the appropriate time and place. I'm not stuck using one exercise within one discipline.

I see exercise and movement as this beautiful continuum that starts with a child learning how to roll and winds up with somebody winning a Gold in the 100-meter dash. Everything involved requires establishing better sensory input, better motor pathways and better command of movement patterns.

This second principle is my way of saying, 'Do what you do. Specialize in what you want to

specialize.’ However if we can’t all agree that some fundamental cornerstones need to be in place before we build the building to honor our movement discipline, we’re missing the boat. We have a lot more common ground than we think we have and we need to acknowledge that.

Principle 3

Biomechanical and physiological evaluation does not provide a complete risk screening or diagnostic assessment tool for a comprehensive understanding of movement pattern behaviors.

The book *Movement* presents the case that we have investigated physical capacities and movement specializations in greater detail than we have the fundamental movement patterns that support and make them possible. Our application of knowledge regarding exercise physiology and biomechanics surpasses our application of what we know about the sensory and motor development of fundamental human movement patterns.

As professionals, we have tried to solve physical capacity problems with solutions exclusively targeting physical capacity. We have tried to enhance movement-specific skills by detailed maps of skill that are often practiced at the very edges of physical capability. These practices are valuable if they identify the weakest link in the movement chain. However, if they simply identify physical capacity and skill problems caused by some fundamental movement problem, focus on these areas actually overshadows a crack in the entire foundation. The roof isn’t leaking, the basement is.

This is really my way of saying that the fact that I’m a proponent of movement screening doesn’t mean I discount or devalue second- and third-level testing. To me, second-level testing is performance-based testing—metabolic testing, physical capacity testing. Third-level testing would be the specific skill or endeavor.

If your VO₂ max is the best in the world, but you still can’t win a marathon, maybe it’s your running mechanics. Maybe it’s your race strategy. There are different tiers where we have to deconstruct and reconstruct the people we train and advise.

Many times I’ll see somebody with a performance issue, from getting stronger on the bench press or gaining more endurance in a chosen sport. There is a fundamental error there. We often seek power when really we have poor efficiency. If you’re not efficient in the way you move, becoming stronger really doesn’t get you more horsepower because your wheels are spinning.

The people we coach and train often show an amazing gain or big improvement in just a couple of weeks. We shouldn’t be so naïve to think strength or capacity improved that much in that short time we had the opportunity to coach them. Instead, we need to realize made them more efficient. We helped their muscles coordinate with the brain’s motor program so they don’t have unnecessary tightness or restriction and they’re not fighting themselves going into movement.

Many times when we don’t have a fundamental movement-based test and we see deficiencies in physical capacity or skill, we immediately offer more physical capacity programming or more skill training. I’ve seen it happen a lot on the golf course, four more instructions for the swing, but the person can’t even balance on the left foot. I would venture to say that learning to balance on your left foot would probably have a greater effect on your swing than any verbal cues given on that faulty base. It doesn’t devalue skill training; it just points out the hierarchy.

Movement competency comes first. Physical capacity comes second. Using these two things to then develop movement-based skills in a particular direction or specialization is third.

We can work on this stuff together. We just can’t load a movement pattern that has a poor foundation. That’s what this movement principle is all about.

Principle 4

Movement learning and re-learning has hierarchies that are fundamental to the development of perception and behavior.

The natural movement learning progression starts with mobility. This means unrestricted movement is necessary for clear perception

and behavior through motor control. It may be unrealistic to expect a full return of mobility in some clients and patients, but some improvement is necessary to change perception and enhance input.

Active movements demonstrate basic control and are followed by static stabilization under load. This is followed by dynamic stabilization under load. From this framework, our freedom of movement and controlled movement patterns are developed for transitions in posture and position, maintenance of posture, locomotion and the manipulation of objects.

This hierarchy makes a lot of sense to most people at first glance. However, when we turn around and do what we do, we don't always follow those rules. Many of my contemporaries have published articles or written book chapters on stabilization. It's good material and says a lot of the same things I say about static and dynamic stabilization and motor control.

However, I think the one error they make is that they don't position the statement. People may write an article or develop a program based on trunk stabilization or core stabilization and never have an asterisk.

We're assuming that thoracic spine mobility, hip mobility, ankle mobility and shoulder mobility are adequate and symmetrical. If you target stabilization and motor control first attempting to maximize the available mobility and symmetry within the system, you're allowing the system to compensate, therefore reducing the effectiveness of the stability program.

I don't think these peers or contemporaries are actively neglecting to consider mobility. I think they assume that most competent people are doing this. I hate to say it, but I don't think we are. We need a systematic checklist as to whether mobility is being managed. It has been managed, has plateaued or it can get no better... and then we attack stability.

Almost every window of better proprioception comes through greater range of motion or a higher, more complex position in which you try to stabilize.

Thus, mobility comes first. This isn't Gray Cook's rule. It's the law of nature. Kids aren't born stiff and

then work on their flexibility for six months. Kids are pretty much born with ultimate flexibility and no control. Then, they earn their stabilization.

When our clients, athletes and patients work with us, they have restrictions, past histories, injuries, bumps and bruises. However, it doesn't mean we blindly run into conditioning or stabilization.

We first go back and grab more mobility. The reason we do this is because perception drives behavior. We can change mobility quickly without a lot of complex programming, so why shouldn't we and why wouldn't we?

Principle 5

Corrective exercise should not be a rehearsal of outputs. Instead, it should represent challenging opportunities to manage mistakes on a functional level near the edge of ability.

Technological advancements in movement and exercise science that neglect functional movement-pattern baselines ignore the natural laws that govern the sensory motor learning system that produces our perceptions and behaviors. This is the process that initially produces these patterns. Some conventional practices rehearse proper movement outcomes without establishing proper sensory inputs. They attempt to manage behavior without addressing perception.

It's common to see movement scientists identify the best technique for an exercise or an athletic movement. To create an acceptable standard, they map the sequence of movements that consistently produce great performance. Coaches and trainers come along and try to mimic those movements, and these become drills and exercises. The drills and exercises get recycled and modified. They're applied on top of dysfunction and they become protocols. After a few years, no one questions the logic.

This is not to discredit the high-end skill drills. It just points out that drills are applied whenever deficiency is noted without considering other aspects of movement or performance. The ironic part of the story is that the elite individuals who

produced the near-perfect movement sequence that become the standard did not actually practice or use the drills.

To state it a different way, the analysis of the superior techniques produced exercises that did not produce the technique in the first place. How could they? The best arrive at excellence without access to drills because the drills are built on observations of their athletic output, but not their input.

Fancy drills are often developed by watching the end result of a movement, performance or skill, and not the fundamentals and deep practice that produce the superior outcome in the first place. We must be cautious at each level of movement learning not to practice rehearsals of outcomes. This might produce very fine imitation, but not authentic movement behaviors.

The challenge I speak of here basically reduces the need for a lot of verbal and visual feedback or instruction. If you appropriately address someone's corrective issue with the right exercise at the right time, it should be challenging but not so difficult that the person can't be successful the majority of the time.

Let's use a few examples like I have in the book. If there's a hip stability problem on one side, I may have you half-kneeling. There are quite a few reasons for this.

First, removing your foot, ankle and knee from the mix helps me focus just on the hip and core. Reducing your body height reduces the amount of balance reaction. With one knee down and one foot up, this puts you in a position that isolates the single side.

Basically, I get to turn my microscope onto some stability issues that are very central to your core. I also get to compare that response in a very narrow base half-kneeling to your other side, knowing the human body should be symmetrical in most cases.

Now, we're not perfectly symmetrical, but there's a rule of about 10% that works for strength, range of motion and functional patterning. Even though we're not supposed to see perfect symmetry and perfection, you should be able to demonstrate that

if you can half-kneel on one side with no balance loss and actually do some activities, but you can't even acquire balance on the other side, there's a big asymmetry.

The very first thing I try to do is demonstrate through my screening and assessment that there are some milestone positions where my clients, patients and athletes will say, 'Oh my gosh, where did that come from? I can't do that on one side.'

I then challenge them, 'Now, let's see how you can do it.' Of course, trying harder to do a natural movement sometimes makes things worse. I say, 'Relax. Breathe. Listen to what's happening.' They may feel very wobbly, but as long as they're not falling over, that's stimulus.

That fall prevention stimulus is probably causing more positive motor programming. However, managing those little mistakes right at the edge of ability is causing more motor programming than a blind rehearsal trying to create the world's perfect bridge or the world's perfect plane.

I said this in the book a few different times. Corrective strategy is not a performance for everybody else in the gym. It's an intimate exchange between the trainer or coach who sets up the situation and the client, patient or athlete who needs to benefit from it.

In other words, I created a challenge. Overcome that challenge.

I have dosed the challenge so it's not overly difficult or doesn't stress you too enough to cause a learning opportunity. Overcome this challenge and we will move on, or take more time to overcome this challenge. The extra time under tension, under load and under stress will teach you.

Often we're not patient enough. If we rush children when learning to crawl or walk, we make them skip an important step. Later on, it would probably show through in a delay in their complete development.

Nor should we rush the current strategy. If it takes you two months to get half-kneeling appropriately, then it takes two months. I'm sorry I

can't speed up the process. If it takes someone else two minutes, then I plan to progress that and turn it into something else. Corrective strategy often doesn't look as academic or clean from the outside as it is naturally correct from the inside.

Principle 6

Perception drives movement behavior and movement behavior modulates perception.

The question is, how does movement develop naturally and how do all these great performances come about? Could the same forces produce both a toddler's first step and the authentic running stride? They are both driven by inputs that influence perception. We get stuck in the practice of outputs and assume our input is the same as those we want to emulate. We perform step-by-step exercise and assume our brains will find value and therefore commitment it to movement-pattern memory.

We should know better, but we all expect that practicing outcomes will create favorable movement patterns. The fact is we should try to emulate all the sensory inputs that produce favorable general and specific movement patterns, rather than practice the motor outputs. This will put our focus on perception, and when we hit the correct perception dosage, movement behavior will provide the feedback.

Actors mimic the outputs of the characters they play and often give us convincing performances, but these are scripted. The actor is not the character, but for a brief time, they behave like the character. We treat exercise and rehabilitation in the same way. We coach movements in a controlled environment and assume we have changed behavior across other situations or even other activities. We forget that when the actor leaves the stage, he or she returns to daily life eventually forgetting the character life. Our clients and patients often do the same thing. The way they move will tell the story of what they have learned and what they have forgotten.

This principle reminds us always to remember there's a continuous loop of information coming in and activity going out. The activity going out is always trying to adjust itself to the information

coming in. If we over-adjust, we can cause a fall, a loss of balance or throw a ball instead of a strike. If we under-adjust, we also make mistakes.

We forget sometimes that we're doing a set of 10 repetitions—we almost should think of this as 10 sets of one repetition. Some good practical examples come from this. When I'm teaching deadlifting, I use the cue from Pavel: *Let's do one deadlift, set the weight back down, resume standing, bend over and do it again.* What Pavel is telling us is that getting into position and doing a respectable pull is just as important as standing up and down, clinking the weights on the floor trying to get to that fifth repetition.

Getting into position, aligning oneself, creating tension and doing a respectable movement is all part of the process. A person's awareness going into a movement is just as important as the outcome, the alignment or the position of the body.

I spend a little more time setting up the input whether I spend that time working on mobility, giving some type of preparatory drill or doing a little reactive neuromuscular training—some of the things I covered in *Movement*. I really try to juice the sensory system so I get the outcome I want without asking for it. If I ask for it, I might see a nice clean job of acting, but I'm not sure it really changed the person.

When we do "tell," we just make people rehearse something in the mirror without really owning hip hinging, shoulder stability or single-leg stance. We're seeing people simply posturing because that's what they think we want them to do. Try to set up a more holistic situation so they can reproduce some of the movement patterns we're training. If there's not a practical application of the training we're doing, why are we doing it?

Most people, whether a professional football player or someone just hoping to get in a good workout, assume this investment of exercise is going to have a carryover. 'I'm going to feel better.' 'I'm going to look better.' 'I'm going to move better.' 'I'm going to get a million-dollar contract.' 'I'm going to win the 5-K race I haven't told anyone I'm going to enter.'

We all have assumptions loaded up on our exercise. Exercise should never be an entity into itself. It's a learning situation. The workout, as Dr. Ed Thomas eloquently says, is a side effect. The physical benefit of breaking a sweat and getting endorphins is simply a side effect of having an unbelievable mind-body learning experience.

I'm very disappointed when I see people just beat themselves or their clients down. You haven't gained or added anything to that session, other than the random burning of some calories you could've easily burned by having integrity.

Principle 7

We should not put fitness on movement dysfunction.

It is possible for fit people to move poorly and unfit people to move well. We measure basic fitness quantity and basic movement quality with different tools. We forget this and assume that fitness is the fundamental baseline, but it is not.

Fitness and physical performance or capacity is the second step in a threestep process. As you discuss the information in this book with peers, other professionals, clients or patients, keep it simple at first. Make sure you establish agreement on the fundamentals. If there is a problem understanding the basic logic of functional movement systems, you will have little chance creating weight and appreciation for the corrective parts of the model. People must understand the basics of the pyramid approach.

I've used this statement; I've heard a lot of people repeat it and they attribute the statement to me. I think I made it up one day, but I have definitely gotten the sentiment from many people in addition to my own ideas.

The only practice that's worth anything is practice that doesn't rehearse continual, unmanageable mistakes. If you have a bad lunging pattern on the left and I load that up, moving way past the challenge and into just difficulty, your brain shifts to, 'I have to survive this.'

Your brain forgets to move with integrity and balance and just goes into survival mode. You survive the load, but you don't benefit from it. You don't learn to engage or pressurize from the load. You don't get any motor benefit.

We see a bad lunge and think we have to get that lunge better. We load it, and all of a sudden, the extra load triggers engagement. We think we're benefiting in some way, but what we're really what we're doing is rehearsing compensation under load.

The load we're talking about is weight, core impact, velocity or excessive range of motion. If you don't have a minimum level of competency or some degree of integrity, when we stress or load unnecessarily, we reinforce whatever you have. Stress reinforces things in biological organisms. What doesn't kill you may make you stronger, but it can make you stronger in the wrong direction.

If you're squatting wrong and it's not killing you, it can make your hip flexor spasm stronger. It can make your swayback worse. It can make your rounded shoulders harder to bring back.

When you go into your workout—your exercise and your conditioning—with underlying dysfunction, remember that exercise is trial by fire. We want to optimize the situation and then temper the steel. We don't do it the other way around.

That's sort of what's behind the statement. It's not a contradiction. When I'm talking corrective exercise, there's not a lot of stress or load because we're learning to manage bodyweight. Managing balance without a load is something that's natural. Everybody does that as they're learning to walk.

However, it's unnatural to load a squat that doesn't have any integrity to it. There's no situation where a baby would think, 'I can't really squat that good right now. Could you put a mini backpack on me and see if that helps my balance?'

This is another form of what we're doing at the gym when we throw on quantity to clean up quality. If you want to clean up quality, clean up quality. If you want to reinforce quality, throw on quantity.

This brings me to the other thing.

When Brett Jones and I dissected the Turkish getup in *Kettlebells from the Ground Up*, our intention was not to make everybody do light Turkish getups. We meant if you have less-than-optimal integrity in your getup, go light until you recapture your integrity. Then get heavy again, because that's the best way to see if you can hold integrity and manage quality.

Once quality has an acceptable base, start exploring greater levels of quantity—strength, speed, stamina, endurance—and see if you can maintain a minimum level of quality.

Principle 8

We must develop performance and skill considering each tier in a natural progression of movement development and specialization. This is the pyramid model of the competency, capacity and specialization part.

Try to keep it simple even when using the pyramid model. First direct the conversation away from perfection and exemplary performance and redirect the focus to minimums using blood pressure as an example. When we screen a group for blood pressure ranges, we're not looking for a perfect blood pressure number—we're looking for red flags. Without much thought, we will probably separate the group into high risk, borderline and low risk.

Why can't we just start our movement conversations the same way? Throw out three terms when discussing the topics of rehabilitation, exercise or training: Are we talking about competency, capacity or specialization? This usually gets a confused look, but it's a great way to start. It forces perspective. It forces a consideration of principles.

Each of these levels of movement must be cleared for minimum competency, and in a progressive order.

Competency

Capacity

Specialization

Competency

This we test with movement screening. If screening reveals pain or dysfunction in the form of limitation or asymmetry, there is a movement-competency problem. Alternatively, there is a basic movement-aptitude problem—pick your term, but make the point. Adequate competency suggests acceptable fundamental-movement quality.

Capacity

Capacity is measured using standardized tests for physical capacity against normative data specific to a particular population or category of activity. Football players are compared with football players and golfers are compared with golfers. If movement competency is present and if testing reveals limitations in basic strength, power or endurance, there is a fundamental physical capacity problem. Adequate capacity simply suggests acceptable fundamental movement quantities.

Specialization

Coaches and experts grade skill with the use of observation, special tests, skill drills and by previous statistics when available. If capacity is present and if testing and statistics reveal limitations in the performance of specific skills, there is a specialization problem. Adequate specialization simply suggests acceptable specialized movement abilities.

This is a way to discuss the performance pyramid without a diagram. It's also a great way to see if someone has an appreciation of the natural developmental continuum that produces human movement.

A few words of caution: We cannot become movement pattern snobs demanding total perfection on screens. Practice balance and look for deficiencies at each level of movement. Our ultimate goal should be to identify the weakest link, because sometimes the problem is not movement quality. It is a deficiency within physical capacity or a shortage of skill or specialization that is causing problems.

I first introduced the pyramid concept in *Athletic Body in Balance*. I simply used it as a visual vehicle to discuss the logic behind getting

fundamental movements down first, doing a lot of these movements and developing some degree of physical capacity and endurance. Then, we would target these specifically...running, jumping, climbing, throwing and kicking.

The hierarchy just demonstrates how one fundamental activity supports the next, and how the next activity of strength, functional patterns, explosiveness and endurance supports the acquisition of skill. The acquisition of skill in throwing, kicking, dancing, spinning, tumbling, gymnastics and fighting moves all require practice.

If you only have enough stability, integrity and strength to hit a small bucket of golf balls every day, you're never going to be a good golfer. You need a lot more time. If you only have enough wind to practice two fighting moves a day, you're never going to win.

Developing efficiency first in your movement where you're not fighting yourself—fundamental mobility and stability—and then developing some degree of physical integrity where you can lift, turn, twist, jump, manage your bodyweight and maybe even manipulate things is the next tier.

Now you've developed a big enough gas tank so you can enter the skills arena and explore gymnastics or mixed martial arts, dance, golf, tennis or catch 50 passes in a row and learn to develop your skill.

It's not that these motor programs just set up safety, durability, alignment and integrity. They also literally provide the physical reserve to do multiple repetitions with integrity before posture starts to falter, shoulders start to droop and ankles start to roll. Any practice you do beyond that means you're learning to move that way.

When I talk about these tiers, it doesn't mean if your true interest is golf, you can't start hitting golf balls right away. However, don't invest three hours in hitting golf balls when you only have the physical capacity to hit 30 of them correctly. Let's also invest time in developing that support system of physical integrity so you can train.

For example, say I were to analyze you using some performance tests, some skill tests and the

Functional Movement Screen, and found your movement screen information was horrendous. You really can't move that well.

But your strength is pretty good. You can jump pretty high. You're definitely explosive. You have some moderate endurance. You're shooting the eyes out of your three points. You're a pretty good basketball player. You can do a lay-up, and some people could argue why we even worry about the movement screen.

The Functional Movement Screen first tells us, from most of the research we have, that without having the integrity of these fundamental movements, you're giving up something. You're giving up the durability that comes with having fluid movement. There's a durability rating, meaning injury risk increases when you have a poor movement screen.

Secondly, there's physical adaptability. We see great athletes who don't have great movement screens. However, we see one of two things: It's hard for them to change their game and adapt to new things, or they have elevated injury risks. Both of these point back to cleaning up the foundation, and what we'll find is greater efficiency.

You'll go longer into your sport or practice without fatigue. The increased resistance to fatigue will allow you to practice with more integrity. Practicing with more integrity reduces micro-trauma, the chance of injury and the chance of an accident.

These tiers constantly play with each other. If you review the *Movement* book and *Athletic Body in Balance*, you'll discover the different profiles of the overpowered and the underpowered individual.

These create metaphors a lot of our clients, athletes and patients often fit into. It gives us a good logical construct and template that tells us exactly what to do here. We have to go back and get them a better foundation.

On the other hand, it could be that the foundation is great, but we're not practicing skill enough so that becomes the problem.

Principle 9

Our corrective exercise dosage recipe suggests that we work close to the baseline at the edge of ability with a clear goal. This should produce a rich sensory experience filled with manageable mistakes.

Our actual goal is silent knowledge—no words, just better movement perception and behavior. In *The Voice of Knowledge*, former physician Miguel Ruiz discusses the silent knowledge of the body with eloquence and clarity. He states, “Your liver does not need to go to medical school to know what to do.”

We can expand that brilliant and simple statement across the movement systems as well. These systems naturally use their perceptions to create their behaviors, and their behaviors to refine perceptions. Your abdominals, diaphragm and pelvic floor know what to do and how to work together if you let them. This is why we don't need to do core work with toddlers. Their curiosity drives exploration and their lack of control demands movement coordination if they are to explore. The exploration requires movement, and they work at movement to achieve exploration.

When your clients and patients arrive on the scene with movement dysfunction, you can't leave it to Mother Nature, because for a long time they have been working against her. To help them, you might need to break a behavior and reset an experience. From the experience, you will have to develop a corrective strategy.

Manageable mistakes means mistakes managed by the individuals doing the corrective. The mistakes aren't managed by our holding up a red flag every time they teeter or wobble. Manageable mistakes mean that even though it doesn't look pretty, they're not going into dysfunction.

The whole purpose of doing corrective exercise is to improve movement quality within a particular pattern. Why even do it if you don't set a baseline or have a qualitative standard?

This goes back to my history. I was on the lecture circuit teaching functional exercise and corrective exercise before I invented the movement

screen. All of a sudden, a light bulb went off in my head. I looked out at the 50 faces looking back at me for advice on functional training and corrective exercise and thought, ‘Oh my God. They don't have the same gauge to rate movement quality.’

What I was saying to the front row meant something completely different to the second row and yet again to the third row. I was showing how to play golf and I hadn't given the rules of golf. We're never going to enjoy a great game of golf that way, because there's no defined qualitative standard.

What I said to myself was, ‘I have this idea of what good movement is, but I haven't even standardized it for myself.’ We have to standardize a minimum movement quality.

There's a lot of research that supports the movement screen. Most of the evidence states that you should be able to balance without a lot of postural movement—10 to 20 seconds on a single leg. Well, it only takes three to five seconds to do a hurdle step. If you can't even do a hurdle step, I'm pretty sure you have dysfunctional single-leg stance or not enough mobility to go over the hurdle.

It doesn't matter which of those problems you have—you have a problem in that movement pattern. If I'm going to correct that movement pattern, now I know how bad the problem is and we have a grading scale for your issue. Everything I do in hopes of improving your stance on one leg or your stepping on the other leg is targeted at whether it changed hurdle stepping.

One of the questions that comes back to me often is, ‘Where did you get all of these exercise innovations? Where did you get all of these exercise ideas and how come I've never seen people use chops and lifts or single-leg deadlifts like this before?’

It's not because I started thinking this way. I used to do everything we were all taught to do. But once I had this movement baseline I was trying to stay close to, I realized something was supposed to change the squat, but it really didn't. Something was supposed to improve shoulder mobility, but it didn't last. I had this genie on my shoulder saying, ‘Hey,

you have this movement screen. You're throwing all these neat, well-defined exercises to the screen, but they aren't changing movement.'

So I reached a professional dilemma. I either had to trash the screen because it's telling me the wrong thing, or I have to question the exercise philosophy of the current state of our profession. And do you know what? I don't think the screen is really asking people to do that much.

We often have a lot of difficulty with the screen, but when we look at it theoretically, it shouldn't be that hard. Lift a leg. Squat down. Step over a string. Lunge. Scratch your back. These things aren't that hard.

We've become so myopic in our training or so highly specialized and lost a certain aspect of physical mobility. All of a sudden, 'Oh my gosh. How do we get it back?'

If you really consider what improves and what doesn't improve, you would actually develop exercises the exact same way I did. I kicked out everything that didn't give me a quick or appreciable change in a movement pattern.

Principle 10

The routine practice of self-limiting exercises can maintain the quality of our movement perceptions and behaviors and preserve our unique adaptability that modern conveniences erode.

When corrections have done their jobs and it's time to get back to exercise, this is your opportunity to prevent future problems. The addition of self-limiting exercises to the exercise program or as preparation or cool down can keep authentic patterns maintained. Since self-limiting exercises offer greater challenges, you can create situations to use these as a form of play or self-competition.

This is the bow I hope everybody gets to when reading *Movement*, because if they stop at Principle 9, they'll literally think Gray Cook is a corrective exercise geek who doesn't appreciate 'bad ass' strength training and exceptional feats of athleticism.

I like getting after it. I have accidents. I hurt myself all the time. I'm very much into pushing the limits. I really want people to explore as much physical capacity as they have.

If you've done your homework and have gotten your body right, go out and have fun. Run a marathon. Do an ultra. Fight somebody in an organized setting. Play some golf. Do whatever.

But self-limiting exercise means exercise that's the 180-degree opposite of climbing on a treadmill, plugging into your iPod and just blindly becoming a rat on a wheel.

Self-engaging exercise and self-limiting exercise is balancing on a beam. It's doing an inverted bottom-up kettlebell press or a Turkish getup. It's doing some tumbling or gymnastics. These are all things that require us to be fully engaged. This engagement really closes a loop on the mind-body situation.

Here's my thing if you have dysfunction. Our standard for this is anything below a '2,' anything that's an asymmetry or anything with pain in your movement screen. If you have a dysfunction, work on it. Clean it up. Get it fixed—get some help. Once you get above that cut-point, you don't have to necessarily do six hours a week of foam rolling, then do your correctives. Make sure your corrective is solid and that you've made a true change.

Some of the activities I put in the *Movement* book are true examples of self-limiting exercise where they require engagement as well as a good blend of mobility and stability. Use some of those exercises in your weekly routine to really challenge all the different faculties you've brought together by recapturing some of your movement. Do this in exchange for becoming a corrective junkie.

I'd like to think that a few times a year I get back in shape after all this travel. My movement screen is not great, but it's adequate. Without any stretching or foam rolling, I can maintain a great movement screen just by doing a few Turkish getups on each side, whether I'm weight training, doing stand-up paddleboarding or doing a little jogging.

All of those planes of movement and all of those movement patterns are in a Turkish getup. Many of them are also in a yoga sun salutation. Grab something that works for you and do it. It's not so much done for corrective strategy. It's self-limiting.

Please visit *graycook.com* for a longer discussion of self-limiting exercise, including a PDF of my favorite exercise ideas. And to continue your study, please consider the book *Movement*, and our live workshop DVD, *Applying the FMS Model*.