

### **NAB THE CULPRITS WITH MOVE WITHOUT PAIN**

*Kent came into therapy because he had back pain when he bent forward. He complained it was really affecting his life and hoped PT could figure out what was wrong. After a manual technique, he could bend forward further without pain but only while holding onto a table. He still was unable to bend forward, unsupported, without pain. I instructed him to perform work that switched on his glutes as taught in the Move Without Pain program for about 20 minutes and then asked him to try bending forward without support. He could now touch the floor and had no back pain!*

*Strengthening the muscles designed to provide power and stability can have a powerful effect on pain.*

*Please note, he did not have an injury and he was only 26 years old. While many people see relief in the first session, most need more than one to effectively resolve their pain.*

Since 1989, I have been like a dog with a bone, seeking out highly effective techniques, methods, and concepts that work to restore health and resolve pain. It is downright scary how much inaccurate teaching about real human movement exists in mainstream healthcare and the fitness industry. The human body has been reduced to parts treated in isolation as if these parts don't connect or interact with each other; even when it comes to illness and disease.

*When my mother was fighting for her life in the ICU less than 2 weeks before her death, there were no less than six doctors who visited her bedside daily, just for a moment, ordering bloodwork and tests and medications based on their expertise and particular body part. One for her lungs, one for her kidneys, one for her liver, one for her heart, one for her GI tract, one for her cancer, and so on. It boggled my mind that there was no one overseeing this parade of specialists who did not even speak to each other (I was there all day and most of the night watching). It was as if my mother's body was not whole and one system had no relationship with another.*

Yes, I am aware physicians document in the patient's chart. I worked in acute care for years early in my career. My point is the isolated treatment of systems and organs with no thought of the whole provides a less than optimal outcome and dehumanizes the patient experience.

The isolated treatment to muscles and joints is no different. You have seen the words EVERYTHING IS CONNECTED TO EVERYTHING ELSE many times in previous chapters. You learned how an ankle issue can lead to shoulder pain, how glute/hip weakness can lead to back pain, and much more. I hope this truth now resonates with you as you read how much your body parts are affected by each other in the previous four chapters.

Now, we will go into some details of WHY the Move Without Pain (MWP) program is effective at finding and fixing the culprit, so the victim is relieved. This program is based on fundamental function and movement truths which are:

- No muscle works in isolation because every action has an equal and opposite reaction. It's called physics.
- Muscles, once movement is initiated, are designed to control motion. It's called eccentric control.
- 3 planes of motion are required with every movement, so you don't look like a robot.
- Loss of any plane of motion in any area will adversely affect other areas.

- All major weight bearing joints require full mobility and full stability for pain-free function.
- There are three areas that affect your function more than others. I call them common culprits.
- Gravity and ground reaction force influence function. Training upright is necessary for success.

Let's look at each of these more closely.

Have you heard of Newton's 3 Laws of Motion? They define all types of motion including body movement. The Law of action and reaction states for every action there is an equal and opposite reaction. Let me explain this in terms of body motion. When you lay on your back and lift one leg up in the air the other leg (and your body) is required to push down. This also occurs when you are standing and lifting one leg. The other leg pushes down and bears the weight. Pain can occur in the low back, the hip, the knee, etc. when lifting a limb and people are often confused about the physics when this occurs. They think it's the leg they are lifting causing the pain. Sometimes it is, but often it's the side that's pushing down with opposite force causing the problem.

This law of motion also means there is no physical way a muscle can be isolated during contraction so why do we still do workouts that focus on isolating muscles, like biceps curls or knee extensions?

You would never lift a laundry basket using only your biceps; you use your whole body. You don't straighten your knees when you are sitting for any functional reason. Straightening your knees with weights for resistance (knee extension exercises) places an incredible amount of stress on your knee's joint structure. The ACL (anterior cruciate ligament), which often requires surgery due to sports (or work-related) injury, is loaded with tibiofemoral (knee joint) shear forces during this activity as well as increased patellar (kneecap) compression.<sup>1</sup> This is not the way your quadriceps (front thigh muscles) are designed to function. Only weight-bearing exercises create functional stability as your ankle, knee, and hip all affect each other when weight-bearing.<sup>2-6</sup> This is how your quads are designed to perform the tasks of daily life; in weight-bearing.

Eccentric control is when a muscle lengthens under tension. Think of lifting a bag of groceries. When you pick it up your biceps shorten, that is concentric. When you lower the bag, your biceps lengthen under tension to control the weight. That is eccentric control. Other examples are when you walk, bend forward, or bend backward. Your hamstrings eccentrically control your leg as you swing it forward during gait. When you bend forward, your glutes and hamstrings eccentrically control the motion so you don't fall on your face. When you bend backward, your hip flexors and abs eccentrically control the motion so you don't fall backwards. Eccentric work is when your muscle produces the most power. Think of pulling back on a slingshot. Loading the band under tension creates the power that happens when you let go.

Your body is designed to move in all 3 planes of motion. The sagittal plane is forward and backward motion. The frontal plane is side to side motion. The transverse plane is rotation. Have you seen a dancer do a robot dance? What they are doing is moving in one plane of motion at a time. This requires incredible skill and practice to do well. I'm always in awe of those who excel at robot dancing. Fik-Shun was my all-time favorite dancer on So You Think You Can Dance! When you see a dancer move so gracefully it takes your breath away, that is full 3 plane motion in action with every move. Walking requires bending forward and backward, side to side, and rotation right and left. Have you ever seen an elderly person who shuffles when they walk? They are using more side to side (frontal plane) motion than forward and back (sagittal) and rotation (transverse) so they can keep their balance. They have lost

effective strength and stability in the sagittal and transverse planes. You can assess your own 3 plane function in just 24 minutes for free. See resources.

This fact leads me to the next truth. If any of your weight bearing joints (ankles, knees, hips, pelvis) lack mobility or stability, this will affect the function of your movements throughout your body. You read earlier how your ankles can lead to problems right up to your shoulders, even your neck. You also read how your hips can lead to problems in your back. Full mobility and stability is necessary for pain-free movement. I will repeat. If one of your joints has limitations in any of these planes, you may have pain and instability in another area of your body. Example: your hips may not be performing well in rotation (the transverse plane). This can lead to pain in your knees going up and downstairs. You may have no symptoms in your hips at all, but lack of strength or stability there may be the cause of your knee pain.

The three, what I call the culprit, areas that affect function more than any other are your ribs, your hips, and your ankles. Whether you have back, hip, shoulder, knee, or neck pain; targeting the muscles that are not working through specific movements in these 3 key areas often resolves pain very quickly. The goal is to restore the functional three plane motion throughout your body required for pain-free motion AND enhanced sports performance.

According to Newton's third law the so-called ground reaction force (GRF) is the force exerted by the ground on a body in contact with it. When a person is just standing, the GRF corresponds with the person's weight. When the body is moving, the GRF increases due to acceleration forces. The ground reaction force vector (GRFV) passes upward from the foot and produces movement at each lower extremity joint. The ground reaction force is equal in magnitude and opposite in direction to the force that the body exerts on the supporting surface through the foot.

Simply put, when you are on your feet, gravity and ground reaction force affects your movements. When you are laying down, not so much. This is why it is imperative to train your body in upright postures. It doesn't matter if you are strong enough to lift a car while laying on your back if you don't have enough eccentric control and strength to lift something out of the trunk of your car or pick up a child without pain or injury. If you need to bend over and pull heavy, wet laundry out of the washing machine, it doesn't matter if you can lift your legs up in the air when laying on your back. The best way to train your core is upright, eccentrically loading your power source and stabilizers.

If you would like to learn all the science behind these facts, please check out [www.grayinstitute.com](http://www.grayinstitute.com). Gary Gray, PT is the founder of the Gray Institute and the creator of Applied Functional Science® (AFS). Referred to as the "father of function," Gary has a unique ability to understand Human Biomechanics and look at the body as a Chain Reaction®. In addition to providing extensive education to healthcare and sports professionals, the Gray Institute is partnered with NIKE Golf to improve golf swing and performance utilizing AFS and Core Chain Reaction®. Gary states, *"Deficiencies in flexibility, strength or balance, anywhere in the body, will result in an ineffective and inefficient swing. It is essential that these deficiencies be identified and resolved so that each golfer can maximize their full potential."*

I have trained many people to eliminate pain, using these principals, and had their golf scores improve significantly. I remember one woman whose husband told her I should be a golf coach. The funny part is I have never golfed in my life, aside from miniature golf. I am simply educated accurately in human movement.

I must clearly state here that I am not a Gray Institute instructor, and the Move Without Pain program is not designed or taught by the Gray Institute. I am certified in Applied Functional Science® (AFS) and have completed over seventy hours of training as a student in their programs. The MWP program is based on my personal and professional understanding of the AFS principles and I created the program simply to teach the public what has only been taught to professionals until now.

If you are interested in educating yourself in fundamental function and movement truths; the Move Without Pain Private Club teaches all this and more. The primary purpose behind creating the free class was to help as many people as possible become pain-free, even if they only train from this one class. I want to help people get their life back. This club is a labor of love as I create new classes every week that focus on movement truths with varying movement sequences. There is a whole lot of training and education in the club you will find beneficial.

Here are just some of the emails I received from people about how the free class has helped them.

- *My friend and I have been doing the exercises almost every morning at 7am ET since the Monday after the launch! We have begun to experience being pain free for hours at a time! My friend was being threatened with knee replacement surgery... she has decided against it (she was in so much pain that she didn't want to do it but had to at least think about it!) so we owe you since you have saved her thousands of dollars and weeks of attempting to heal! (This was emailed just 5 weeks after the free class was posted)*
- *I got out of the car 2 Sundays ago, and was half way across the parking lot before I realized that I was not in pain, and that I had not done my obligatory stretches after getting out of the car! This Move Without Pain is for Real... thank you for all that you do! (This was emailed just 3 weeks after the free class was posted)*
- *I did the class you offered yesterday, and it really affected my left hip/leg in a very helpful and profound way!! My left great toe has been in its correct position all day today instead of pointing toward my other toes like usual. That's pretty amazing!*
- *I had some neck pain from martial arts and after doing the class it was much better!*

The Move Without Pain Private Club provides training in specific movement truths, a Geek Corner Tip of the Week, Q & A, and much more. Find it in Resources. If you don't want to join a club, [www.movewithnopain.com](http://www.movewithnopain.com) has specific modules that teach what to do.

I personally use the same methods I teach to maintain a strong, stable body *without limitations* as I move through my 60's. I recently used a pickaxe and shovel for hours working in my yard without injury. My personal goal is to live to at least 112 and be really stinkin' happy about it! You **can** learn to move without pain.

## References Chapter 10: Nab the culprits with Move Without Pain

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