



**OUR**

**COMPENSATING**

**BODIES**



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# OUR COMPENSATING BODIES



The longer one is in the physical therapy profession, the more one learns how compensation can express itself in the human body. Often, we think of this word in the negative by the detrimental effects it can put on the body but truth is, if your body did not have the ability to compensate, human beings would find life quite limiting. Compare a human body to a car and we see how there is no compensating for a flat tire (stopped immediately) but our bodies are usually able to adapt to some deficit so we can keep on going.

Checking this word in the dictionary, I was surprised Mr. Webster provided a really good definition of how this word would apply in living systems, "Correction of an organic defect or loss by hypertrophy (increased bulk) or increased functioning of another organ or (system)."

That is quite a mouthful but in laymen's terms when it comes to our musculo-skeletal system, it's the ability of our body to utilize related resources to continue to produce the effect needed to function. In other words, we are not stopped in our tracks like a flat tire on our car but can continue to do the things we need to do but now with greater stress. Compensation means something is going to contribute more so the action is completed as some area is contributing less to the success of that action.

Where I have seen compensation expressed the most is in the world of repetitive activity. Walking would be an example of an activity where compensation would have a great place to express itself. Since walking for exercise is a common activity for many people, we can use it to provide some examples of this valuable trait our body knows how to do when needed.

Let's denote a common occurrence, tight calves. The calves are one of

the harder working muscular groups in the body as they are the last muscle group creating propulsion forward when walking. Their tendency is to get tight or shorter over time and then force excessive motion or pronation into the foot. Excessive pronation is a common compensation to tight calves as this tightness will limit the movement of the ankle and so force the arch to collapse or pronate to a greater degree.

Pronation gives us "wiggle room" to be able to walk without optimal joint motion in the lower leg and most likely would not even become a concern unless this little four-letter word begins to creep into one's awareness. Yes, compensation is helpful but excessive compensation or compensation that is ongoing can eventually create the four-letter word — pain.

Tight calves which limit the ankle motion (foot moving toward knee feeling a pull in the calf) will put stress into the foot and some of the related tendons. Here is a compensation caused by tightness which can eventually create more stress on the arch of the foot leading to plantar fasciitis (heel and arch pain) which can be quite disabling. Some of you may have experienced this first hand in the past or are contending with this condition now and know what a problem it can become.

As well, the Achille's Tendon (heel cord) is vulnerable to overuse from tight calves creating a tendonitis (inflammation of the tendon). Now there are other factors that can affect why we compensate through the feet causing an overuse injury. We could have weakness in the foot structure which lends to excessive pronation too and sometimes a weak arch and tight calves can go together adding complexity to the problem.





It's not uncommon for people to run for the Dr. Scholl's inserts, new shoes and all kinds of ointments to try and solve the issue. There can be answers in such choices at times but the real need is to handle the calf tightness without creating strain on the foot, and helping improve the strength in the foot to support itself better is often the more comprehensive answer. In other words, correct the reason for the compensation.

One then can ask the question why are the calves so tight? Yes, they do work hard and if you are overweight, they work even harder to propel one forward. Yet, weakness in the buttock muscles can cause the calves to work harder to create forward movement. The buttock muscles (Glute Max) are contracting closely in time with the calves when walking, hiking or running and so if the buttocks muscles are weak, who has to work harder or compensate?

Yes, Mr. and Mrs. calves maybe to their eventual detriment, but here we have compensation. Surely, it can be tolerated for a period, maybe with lower demands but then someone wants to exercise more, drop some weight and decides to walk 3-4 miles/per day and this puts those poor calves into more tightness potentially causing foot, ankle, or even knee pain.

Here is an example of how weakness causes compensation and eventual overuse pain.

### Hips and Pelvis Compensations

If we head a little further north to the hips and pelvis, there are several compensations which are common for walking, hiking and even more so with jogging/running. With more demanding types of exercise, the ground reaction forces increase which is the force created when the foot hits the ground. Running is much more demanding on the body with ground reaction forces as the body is airborne and thus has more weight colliding with the ground per stride.

The pelvis is designed to be a control center where ideally muscles related to the hamstrings (located in back of upper thigh), buttock muscles, and core muscles work to help stabilize the pelvis as the legs and

related muscles absorb the shock of the ground reaction forces when walking, hiking (enhanced further with going downhill and when carrying a backpack) or running. When the control center is not optimal, compensations will occur with the quad working in a more demanding mode to control the knee. Quad overuse/tightness and knee pain can begin to occur.

### The Connection Between Trunk Compensation and the Lower Back

And, not to pile on too much on this idea but a very common trunk compensation is how the lower back muscles will work harder if one's abdominals and glutes are weak. The back muscles have no option but to over contract to handle the loads one has to lift.

Such occurrences can be further aggravated with poor lifting technique.

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Lingering tightness, soreness and pain over time can easily be the result of the body getting tired of compensating for some deficit.

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We all rely on compensation; rare is the person who is perfectly balanced. Problems develop when the gift of compensation becomes excessive or carried on too long or when demands are increased. Quite often, with repetitive motion activities (walking, hiking, running, lifting) fatigue can enter in to the equation and

as one tires in some muscle group our body compensates more. It is quite common to trace excessive compensation to weakness in the body, sometimes remote from the pain like we discussed above. Lingering tightness, soreness and pain over time can easily be the result of the body getting tired of compensating for some deficit.

A physical therapist's work is often of the detective variety when someone comes in with an overuse injury from a repetitive activity. It is interesting work identifying why pain has developed and requires one to test and identify the guilty parties responsible for the pain.

### Stop Compensating and Start on the Road to Recovery

If you are dealing with lingering issues and enjoy being active ('tis the season for us Michiganders), then you could be in a pattern of compensation which is perpetuating your ongoing pain. What you need is to get a PT detective on the case and do some investigation to the source of problem. That is what we do well here at Full Potential; we get out our Sherlock eyes and look for clues.

Don't waste your summer waiting for something to heal when it keeps getting picked on by weak this or tight that, get to the source. Compensation can be a friend for the short term but ultimately it is putting extra wear and tear on our joints, tendons and muscles, can you spell arthritis in the long run? Call your doctor for a referral and we can take it from there.

***To being active with less compensation!!!!***

Vincent Hanneken, PT/Owner

## HEALTHY RECIPE



### Watermelon Cucumber Lime Refresher

Per each serving:

- 3 cups watermelon, cubed
- ½ cucumber, diced
- 2 limes, juiced

Add the watermelon, cucumber, and lime juice to a blender, and blend until smooth. Using a mesh strainer, strain the juice over a large liquid measuring cup to remove the pulp. Use a spoon to help stir the pulp and press out the liquid. (Reserve the pulp to make pulp muffins!)

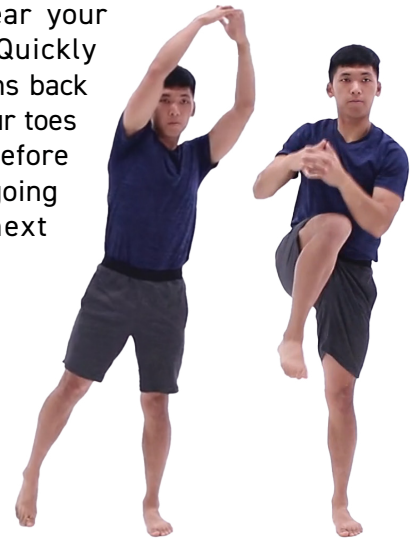
Source: [www.tasty.co/recipe/watermelon-cucumber-lime-juice](http://www.tasty.co/recipe/watermelon-cucumber-lime-juice)

## EXERCISE ESSENTIALS

### Power Knee Drives

*Strengthen Your Core*

Start by standing up straight. Place one hand on top of the other and raise your arms up over your head. Brace your abdominals and drive your left knee up and across your body, simultaneously bringing your arms down at your knee so they meet near your midsection. Quickly raise your arms back up and tap your toes to the floor before immediately going into your next repetition.



**“Keep close to Nature’s heart... and break clear away, once in a while, and climb a mountain or spend a week in the woods. Wash your spirit clean.” – JOHN MUIR**

## *Patient Who Found Confidence and Improved Strength!*

*“Dr. Luke was my PT last year for a patellar tendon injury in the same knee that was very overdue for a replacement. He was very accessible and helpful with a tricky and painful situation during a long wait for surgery. I returned several weeks after having been released from post knee replacement PT at a practice closer to home (due to the need for transportation help). That therapy had been a great start, but some specific areas of weakness didn’t seem to be improving over time with the exercises I had been given. I felt I needed more aggressive work, so I decided to return to FP and consult with Luke. He was great at identifying the exact areas where I needed to strengthen, and taught me some new exercises to target those specific areas. He also worked with me on some technical corrections in my movement that were very helpful to achieving my goals. I quickly started to build noticeable strength in the*

*areas of concern. It didn’t take long to gain more confidence as the strength improved. For being almost 3 months post-surgery when I started at FP, my pain level wasn’t super bad, but it has lessened even more as the targeted areas have gotten stronger. The PTA who also worked with me on some visits is also very knowledgeable and very good. Everyone at FP is super friendly and caring. It’s a pleasure being there. Returning to Full Potential for some extra work was a good decision and was well worth it. I definitely recommend FP to anyone needing individualized and knowledgeable PT help.”*

*You too can find confidence and improved strength!*

*Call 616-537-2864 Today!*

**Has your pain come back? We can help! Call us at 616-537-2864 to book your appointment today!  
Book online at [FullPotentialPT.com](http://FullPotentialPT.com)**

# PATIENT *Success* STORIES



KIM EXPERIENCED  
**95%**  
OVERALL IMPROVEMENT

“While I still have some symptoms, I know how to fix them and each week there was improvement in [my] mobility and pain. [As a result of physical therapy,] I can confidently participate in the activities I enjoy. I feel like in the course of therapy, [my providers and I] uncovered long term issues and were able

to address them for continued improvement. Even when there were set backs, Dr. Jeremy and Kristen were encouraging and worked through the change so progress could continue. I appreciate the time taken to dive deep into the issue to create a long term fix.”

— *Kim H.*

## WE WANT TO HELP YOUR FRIENDS AND FAMILY!

Sometimes the biggest impediment for people in pain is to know where to get help. You can be a trusted advocate for our services, and give your friends and family the confidence to take the first step towards getting assistance. Your recommendation could be the beginning of good things to come for them!

Simply fill out the form, return to us and we will send them information on how we can help. To submit online, go to <https://fullpotentialpt.com/patient-information/refer-a-friend/>

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*Your Name*

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*Your Friend's Name*

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*Your Friend's Email*



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# CHOOSING THE RIGHT ATHLETIC SHOES



**Download The Shoe E-Book  
for FREE by scanning the  
QR Code below.**



Back in my early days, some of you will easily relate, the world of athletic shoes was pretty simple. For some reason even the name was simple – tennis shoes. Converse was the big brand, and I can remember my mom on many occasions would throw my “cons” outside as it was the rage in the 60s to wear your low top “cons” with no socks. Those boys would reek in the summer! (Sometimes she would just throw me and the shoes outside). Now, fast forward to today and we have a bewildering array of athletic shoe types for different sports, and within each type are all kinds of styles for all kinds of feet.

Our feature article is about compensation, and believe it or not the type of shoes one uses can help curtail excess compensation and prevent overuse injuries. This e-book with its associated video is about helping you match the right shoes with your foot type. It does get a bit technical but overall, I think it can help you make a better decision when it comes to your next pair of athletic shoes.

***To happy feet!***

Need help with foot pain or just want advice on finding the right shoe?

**Call us at 616-537-2864 to book your appointment today!**

**Book online at [FullPotentialPT.com](http://FullPotentialPT.com)**

