

Spring 2018 | Volume 13 | Number 1  
*Journal of the Spinal Research Foundation*

# Wellness in the Workplace

Supporting healthy behaviors  
and improving health  
outcomes while at work.

 **SRF**  
spinerf.org





## **WELLNESS IN THE WORKPLACE**

### **JOURNAL OF THE SPINAL RESEARCH FOUNDATION**

Spring 2018 | Volume 13 | Number 1

#### **WHAT'S NEW AT SRF?**

##### **UPDATE YOUR ADDRESS BOOK – WE'VE RELOCATED!**

We're celebrating 15 years of excellence with a new and improved state of the art facility! We are thrilled to be diving deeper into research, education, and patient advocacy in our new home! SRF isn't the only one who upgraded! Two of our Center of Excellences (VSI and VTFC) are also celebrating the New Year in a new location! Continue reading to learn about all of the exciting upgrades, including VTFC's addition of the HydroWorx Aquatic Treadmill!

##### **WELCOME, TEAM!**

Chris Gorini, Research Director, oversees the foundation's research program, establishing research priorities, developing and maintaining collaborative research partnerships to further the mission of the organization, and advising the SRF President and Board of Directors on research projects and areas of scientific interest. With his help and expertise, SRF is able to maintain a research environment that encourages creativity and collaboration. Continue reading to learn more about Chris and the exciting happenings at SRF!

##### **TUNE INTO SOCIAL MEDIA**

Our social media is on full blast! Be sure to like us on Facebook (Spinal Research Foundation), subscribe to our monthly newsletter, and follow us on Twitter (@SpineRF). You'll see posts on tips, stats, and stories about spinal health to raise awareness on an issue that affects so many of us. Join the movement and start sharing!

The Spinal Research Foundation is a 501(c)(3) nonprofit dedicated to improving spinal health through research, education, and patient advocacy.

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**FROM THE EDITOR:**

**Brian R. Subach, M.D., F.A.C.S., F.A.A.N.S.**  
Virginia Spine Institute



# BUILDING A CULTURE OF WELLNESS

In the past, conversations about exercise classes, healthy meal choices, water intake, and protein : carbohydrate ratios were reserved for the local health club or gym. Now, human resource managers are seeing that the concept of wellness in the workplace has become increasingly more important not only in employee retention but also in creating a successful and profitable business.

*Every organization can benefit from embracing a philosophy of wellness in the workplace.*

Wellness is more than just a program or benefit but a true commitment to achieving higher levels of mental and physical wellbeing. At the most basic level, it involves protecting one's workforce from harm or injury by advocating good lifting techniques and using back supports when necessary. A slightly higher level entails bringing in lunch-hour speakers to discuss nutrition, fitness, stress-coping strategies, and smoking cessation. At the highest level of commitment, the company's leadership must demonstrate buy-in to the concept. By showing the company that management clearly sees that success of the business as a whole is tied to the health and motivation of the individual employees, wellness becomes a core value of the organization.

In attempting to bring the concept of wellness into the workplace, businesses should consider three specific issues:

## Corporate Culture of Wellness

Business performance is driven by shared core values. Values define a cultural foundation through which acceptable attitudes, behaviors, and practices are established, reinforced, and rewarded within the organization. Values may express the intention to care, to grow, or even to take personal responsibility for the success of the organization.

Establishing a values-driven culture is an essential step in integrating wellness into the workplace. Often companies have values expressed in the form of words versus behaviors. Undoubtedly, actions speak volumes more than words alone. One example of a commitment to wellness reinforcing a commitment to health is a company-sponsored 5K event. Irrespective of the spe-



cifics of the event, employees will be engaged by identifying a charitable cause, participating in the event, and seeing the health benefits of the activity. Business contacts, friends, and relatives may be invited, enhancing community exposure as well. I personally have been overwhelmed by the giving nature and the generosity of many of our employees when they are given the chance to participate and give back to the community.

### Wellness Programs & Benefits

In general, corporate policies reflect an organization's philosophy. Groups wishing to emphasize their commitment to the health and wellbeing of their employees have set up programs which allow employees to participate in activities free of charge. Early morning boot camps, noon yoga power hours, and post-work meditation sessions promote a concept of teamwork and unity. Many employers choose to provide free gym memberships as an added benefit of employment. Mind you, this approach allows the talent to use the stipend for whatever they deem. Regardless, the sentiment has still been reinforced by the employer. Even before employees are hired, they will carefully weigh the benefits available. Often competitive salary offers will be discussed based upon the culture and value-added benefits. It has been estimated that more than half of employers in a competitive environment provide health-related or wellness fostering benefits.

Many work sites have smoke-free environments, pre-employment and incident-based drug testing, sick leave, personal leave, short- and long-term disability plans, and safety requirements. These are fairly standard across most businesses. Other health benefits such as dental, vision, and life insurance can often be important benefit offerings.

Vacation policies are designed to influence work behavior practices. It is not uncommon to find businesses that offer unlimited paid time off. Such a policy requires a strong performance standard, but studies reveal that motivated employees actually may take less time off when given the opportunity to take unlimited leave. Many organizations foster creativity by encour-

aging their employees to such time to recharge their batteries.

Flexible working arrangements such as flextime and telecommuting have become increasingly more common. Such arrangements have been shown to improve health status indicators as well as to reduce stress and allow for better work-life balance. Increasingly, larger corporations are providing health-risk assessments and nurse-care hotlines, with some organizations even bringing alternative resources into the workplace.

Personal trainers, yoga, meditation, and even fitness challenges and lunch-and-learn programs encourage wellness year-round. Recognition of the need for wellness programs that support the spiritual health of the whole person have made chaplains available in the workplace and have provided counselors for financial wellness programs.

Whatever programs and benefits an organization offers, it should always be extended with the sentiment of care. It is one thing to provide a program or benefit and another to take the time to educate the workforce about the program and its benefits.

### The Physical Environment

Wellbeing includes a person's physical and mental health, as well as the social aspects of their work environment. In recent years, generational, technological, and regulatory influences have shaped the office environment.



Today there are ergonomic desks that allow a user to sit or stand, exercise ball chairs, and even treadmill desks that are readily available.

Natural light and quiet spaces encourage people to take mental breaks. Something as simple as a poster that encourages people to take time between their next meeting to walk outdoors could express the organization's philosophy on communication and health.

Some companies encourage play with interactive media areas, ping-pong tables, video games, and even pool tables. Creating a library of books for employees to trade or borrow has value. Converting a 10x10-ft area into a personal health kiosk - a self-contained screening and resource module equipped with an automatic blood-pressure cuff, weight scale, health brochures, and other interactive resources is a creative and novel idea.

In today's competitive business environment, it is critical for organizations to invest in human capital. Taking a proactive approach toward employees' health and prosperity directly influences the health, wellbeing, and success of an organization. Concepts of wellness in the workplace are likely here to stay.

**PRESIDENT'S NOTE:**  
**Thomas C. Schuler, M.D., F.A.C.S.**  
*Virginia Spine Institute*



## WHAT ARE WE DOING TO OUR CHILDREN?

I have three children who have participated in a variety of sports over the years and have also had the pleasure of coaching many teams of young athletes. I've seen first hand how competitive some children (and their parents) can be. I think it's very important for our children that we stop and think about what we're doing to them and consider the potential negative impacts on their health our demands may have on them. We have gone from an era when children played and cross-trained in multiple sports, to a time where children focus exclusively on a single sport with hyper-intense and highly repetitive training. The child's goal - and often the parents' - is to become an expert in that sport.

Professional athletes push the limits to create a competitive edge over their opponents. Intense focus is placed on their fitness, training, diet, sleep cycle, and psychological practices to improve performance. To gain an advantage, some athletes may resort to illegal measures like performance-enhancing drugs. However, for athletes who outperform the competition legally, concentrating on the above-mentioned aspects of their health and wellbeing is their main focus. Many professional athletes have "super-sized" their strength training, utilizing Navy Seal-style training or Olympic-style weight lifting, including heavy squatting, to try to gain an advantage. While this type of training may work well for some, for others such as professional golfer Tiger Woods, this aggressive style of training may ultimately lead to a shorter career.

### The Trickledown Effect

Because professional athletes are pursuing hyper-intense training as a way to gain an edge, we now see college programs embracing the same behavior. High schools are mimicking the college level training and even further down the ladder, middle school athletes emulate the high school athletes; you get the pattern. They incorrectly conclude that if it works for professional athletes, then it should work for amateur athletes, too. But wait; there is a big difference between the bone health and strength of a professional athlete versus that of an adolescent athlete! The young athlete's skeletal structure is not mature enough to handle this type of intense training. This is only further complicated by poor technique, overzealous trainers/coaches, or simply the competitiveness to outperform an opponent.

As a result of overtraining and improper weightlifting techniques, we are seeing an epidemic of low back stress fractures (spondylolysis) in adolescent athletes. The severity of this epidemic became blatantly obvious this past year when I received a phone call from a father in Iowa. His son, a 16 year old elite-level lacrosse player, had been unable to play lacrosse for the past six months due to a stress fracture. Upon discussing his son's history, I discovered that the injury occurred during a heavy weight training session at the insistence of the coaches.



In that same week, I saw two other elite high school athletes who sustained the same type of fracture from squat training in the weight room with their teammates. Squatting and deadlifting have become the current strength training fad of professional and, consequently, adolescent athletes. Young athletes at the insistence of coaches and/or prodding of their peers are lifting too much weight with questionable technique and are seriously injuring themselves. The incidence of injuries has been rapidly escalating over the last few years and our practice in particular is now seeing dozens of these types of injuries on a monthly basis.

Spondylolysis is a stress fracture through the portion of the vertebra that connects the front of the spine to the small joints in the back of the spine. It is a fracture through an area known as the pars interarticularis (a thin area of bone between the superior and inferior facets of each vertebral segment). Young athletes are particularly prone to fractures in this area since this is the thinnest area of the bone and these athletes are skeletally immature. Before the age of thirty, our bones progressively increase in density or get stronger; after thirty, our bones progressively lose density. This is why elderly people are prone to osteoporosis, a disease in which the density of bone is reduced. When spondylolysis occurs, an individual frequently experiences pain in the back and potentially develops instability, leading to a cycle of worsening pain and more instability. Even if the athletes don't sustain a fracture, they are developing many other injuries that can impact their ability to perform, their longevity in the sport, as well as the quality of their lives.

### **Prevention is Key**

We do have some exciting news in that new therapies and technologies are helping patients treat spondylolysis. We have successfully injected stem cells, taken from the patient's own pelvis, into these fracture sites to help them heal more effectively. The benefit of getting these fractures to heal through a therapeutic injection is that we can avoid chronic problems caused by the fracture not healing or the requirement for surgical intervention.

*As we move forward with new technologies such as stem cells, we must remember that the best treatment is often prevention.*

In the case of our adolescent athletes, prevention requires a more common sense approach to conditioning and training that is consistent with their skeletal maturity. Cross-training, adequate recovery or rest time, realistic time participating in the sport, and focusing on overall wellness go a long way in preventing many injuries, including these fractures.

One of our goals at the Spinal Research Foundation is to help educate the public and providers as to appropriate treatment options as well as preventative techniques. As this epidemic of high school and middle school athletes' injuries worsens, we need to refocus training and conditioning to produce healthy active adults rather than injured adolescent athletes.

# Spine Tales

**A Journey to Recovery**

## **Spi-nal Cham-pi-on (n):**

**/ˈspɪn·CHAMPēən/**

**A person who has achieved an improved quality of life through treatment for neck or back pain.**

*The moment you step foot in our facility, our team will work collaboratively to support you in achieving the goal of becoming a "Spinal Champion". Join the We've Got Your Back campaign and celebrate with others by participating in our national race, featuring a 5K and a 1 mile fun run/walk!*

## **SpineTale (n):**

**/spɪn·tāl/**

**An inspirational story of a Spinal Champion, from both the patient and the clinical perspective.**

*We love to hear from our Spinal Champions – your stories will inspire, teach, and provide hope for others who currently suffer from similar conditions. No story is too small; each journey to recovery is equally powerful and helps build awareness and hope. Celebrate your success while inspiring others and share your story!!*

If you are enthusiastic about your journey to recovery and want to share your story, please contact Sabrina M. Woodlief, Associate Editor ([swoodlief@spinerf.org](mailto:swoodlief@spinerf.org)) to learn more!



## Dan Carusi **SURGERY TO SUMMIT**

I was experiencing lower back pain for almost 15 years due to an injury resulting in a herniated disc in the early 2000s. I was treated with epidural injections followed by weeks of physical therapy. I felt some relief but the pain never subsided completely. I learned to resume as much of a normal life as possible, including most of my previous activities, but I became dependent on Ibuprofen to manage the discomfort.

In late 2016, the pain suddenly intensified and began migrating down my left leg. I do not recall doing anything that would have injured my back other than straining the muscles in a climbing fall that healed shortly after. My primary physician prescribed an anti-inflammatory and a muscle relaxant that gave me temporary relief. Enough relief to give me the confidence to book my 2017 climbing trips with my son to Seneca Rocks, WV in June and our ultimate climb, the Grand Tetons, in August.

2017 was the year for my 50th birthday, so I was going to prove my youth or deny my age with a mountaineering climb to the summit of the Grand

Tetons! The climb is more than fourteen miles round-trip and 7,000 feet of vertical elevation gain to reach the summit, challenging both mental and physical strength. I had planned a minimum of six months of conditioning in preparation, not knowing the future state of my back.

However, a few months before the trip the pain in my left leg returned worse than ever and now included numbness, weakness, and a tingling sensation down to my foot. I also was experiencing a stabbing pain in the left buttock, as if someone stuck me with a knife and was twisting it. The pain was overwhelming and debilitating. Nothing I tried provided any relief and the pain was negatively impacting my ability to stay focused at work and with my family. I struggled to walk from the car to the office or the driveway to the house. I could not sit for more than a few minutes and standing was not much better. I began to lose hope that I would someday live pain-free and once again enjoy life.

All my activities came to an end – hiking, climbing, horseback riding, wake-boarding - even my ability to do basic functions around the house. The health care providers I sought out for help recommended that this was the new norm and perhaps it was time for a lifestyle change. In other words, “no more climbing”. This was the final kick in the gut and I refused to let it be the only option for me. I have two teenage children and the opportunity to climb with my son and horseback ride with my daughter is priceless and non-negotiable.

I reached out to my primary physician and chiropractor for help. I had an x-ray and MRI completed, identifying a L3/4 herniated disc as the issue and was recommended non-surgical treatment. From the initial onset of pain in November 2016, it was another five months before visiting VSI. The constant pain and unhappiness in my life drove me to continue looking for help and eventually to VSI. Not only was the climbing at risk for the summer, but also any hope of a good quality of life and future fulfilling activities. Living pain-free no longer seemed like an option. I was now only looking for enough relief to allow me to function in life.

I tried almost every non-surgical treatment available, such as heat, ice, manual manipulation, dry-needling, massage, physical therapy, stretching, Transcutaneous Electrical Nerve (TENS) stimulation, and medications but the pain only worsened. I finally discovered VSI and my first appointment was in March 2017 with Dr. Subach. He read the x-ray/MRI and walked me through my options.

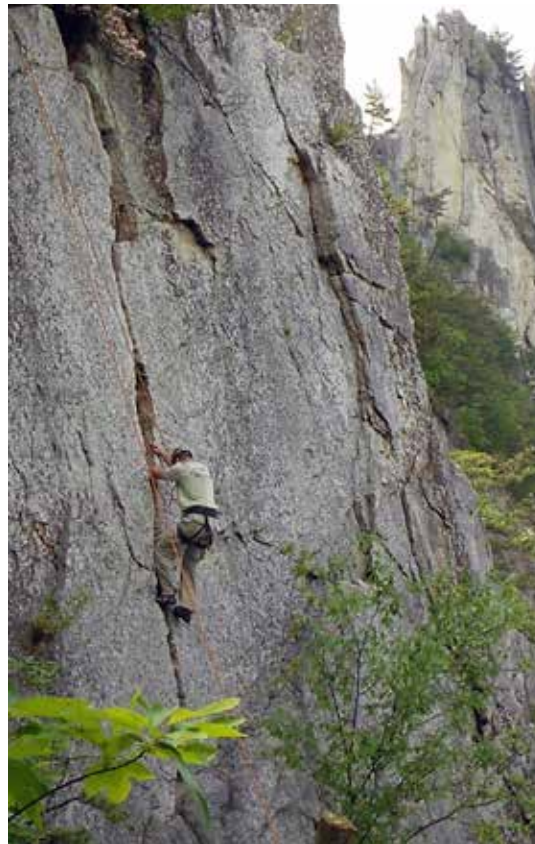
**HE SAID ONE SENTENCE THAT GAVE ME HOPE FOR THE FIRST TIME AND I WILL NEVER FORGET IT - “YOU WILL BE READY TO CLIMB IN JUNE AS WELL AS THE TETONS IN AUGUST.”**

He then quickly reminded me how crazy one needs to be for attempting high altitude climbing.

We decided the herniated disc was protruding far too much for it to heal with non-surgical

treatment and minimally invasive surgery (microdiscectomy) was the best course of action. I was very scared of surgery but did not see any other path forward. Dr. Subach gave me confidence that this approach would give me the desired outcome I was seeking.

Surgery was completed on April 5, 2017 and the very next day I kicked off my Surgery to Summit campaign/recovery (#surgerytosummit). I followed the recovery directions like it was the law, especially no bending, twisting, or lifting for six weeks. A re-injury at that point would end the hopes for climbing in the summer. Walking became my best friend. I started walking across the first floor of the house, then to the bottom of the driveway, to the mailbox, to the end of the street, and finally to three to five miles per day. Some days were better than others and some days felt like major setbacks but I knew that I was getting stronger. Physical therapy was also critical for the recovery, as it reduced the muscle spasms and conditioned the core.



Visiting VSI and Dr. Subach was the best decision I could have made. I got my life back. Other than some lingering tight muscles in the lower back, I'm pain free. The excruciating pain and numbness down the left leg was gone immediately after surgery and has not returned. This experience has given me a different perspective on work and life. I'm able to better focus on activities, I refuse to sit at a desk for extended periods of time, and I make an effort to find time to walk in between meetings.

Flash forward 11 weeks post-surgery and I'm climbing again at Seneca Rocks, reaching my first summit since the surgery! Yes, not in the best shape but I was heading up and not down. This was the first real test before the Grand Tetons and the go vs. no-go decision for the trip. The Tetons trip was a GO!

A little more than four months after surgery, I was on a plane with my son, making our way to Jackson Hole and Grand Teton National Park. We hiked seven miles, gaining 4,200 feet to high camp. Two days later we set out at 4am to hike/climb another two miles and 3,000 additional vertical feet. We were within 250 feet of the summit short-roping our way to the top when I started to become emotional.

**I REALIZED AT THIS POINT THAT THE SUMMIT WAS WITHIN REACH AND ALL THE EMOTIONS FROM THE JOURNEY TO GET THERE WASHED OVER ME LIKE A FLOOD.**

9am Sunday, August 13: I was standing on the summit at 13,770 feet with my son and the seven other climbers who were part of the summit team. With a quivering voice and some tears in my eyes, I hugged my son and whispered in his ear, "We did it!"

Thank you VSI, Dr. Subach, Reston Hospital Center, family, and friends for the role that everyone played in my journey. Now the rest is up to me. Keep my weight in check, stay in shape, implement a consistent exercise program, and keep focused on what is important in life. More importantly, never stop enjoying life.

My advice to anyone experiencing a similar situation is the following. **Don't give up.** There is hope and light at the end of the tunnel. You do not have to live the rest of your life in pain. **Stay off the Internet.** People only post horror stories and not success stories, a big motivator for me to write about my journey to success. All it will do is give you less hope, scare you away from certain procedures, and take you to an even lower point. **Do your homework.** Seek out all options so you can make the best decision for your situation. **Have patience.** Post-surgery recovery is slow but critical. Follow all directions provided by your surgeon and physical therapist, especially the first six weeks. **Set a post-surgery goal for yourself.** That goal is what helps you fight through the difficult days and stay the course for your recovery so you can go climb your mountain to find your own personal summit.



## **THE CLINICAL PERSPECTIVE**

**Brian R. Subach, M.D., F.A.C.S., F.A.A.N.S.**  
*Virginia Spine Institute*

I first met Dan in March 2017. This forty-nine year old very active and athletic gentleman presented with the new onset of leg pain. He stated that he had a previous disc herniation in 2006 that seemed to respond well to injections, physical therapy, and anti-inflammatory medications. He has had intermittent flare-ups of low back pain since then, but the episodes have been relatively infrequent and not particularly severe. In January 2016, the patient stated that he developed severe acute onset of left-sided leg pain as well as low back pain. He has participated in physical therapy with electrostimulation and manipulation. He had been taking his anti-inflammatories with little relief of his symptoms. He described a pain that radiates from his low back into his left buttock and proximal left lateral thigh, left anterior thigh, and occasionally with pain radiating to the left anterior tibia or shin. He had difficulty completing his activities of daily living including work and self-care. His normal activities of rock climbing and horseback riding have been obviously affected. On the day I met him, his pain was an 8/10 on a visual analog scale.

On examination, he had a floridly positive straight-leg raising sign, which is a sign of nerve root irritation due to a disc herniation. He also had weakness in tibialis anterior, which is the shin musculature responsible for moving the ankle. Since he had failed conservative management with physical therapy, anti-inflammatory agents, time, and activity modification but had developed progressive and acute nerve damage, I had him review the MRI scan with me.

His MRI scan showed that he had scattered degenerative changes in the lumbar spine. At the L3/4 disc space, which is the third disc from the bottom (Figure 1), he had a large left paracentral disc herniation, meaning there was significant pressure on the traversing left L4 nerve root, explaining his ankle weakness (Figure 2). Given his frustration with his ongoing symptoms and my concern about progressive nerve damage, I recommended surgical intervention.

In April 2017 he underwent a left L3 hemilaminotomy where I removed a small window of bone. I removed the ligamentum flavum and was able to see the nerve roots that were being harmed. By mobilizing the nerve roots, I was able to see the disc herniation and removed the entire piece of ruptured disc. There was a clear hole in the annulus, but I was able to pull the ruptured portion completely out. The surgery was performed with the use of an operating microscope to see the delicate nerve roots and was completed without complication. He was discharged the next day with a significant improvement in his leg pain. He still felt that the leg was slightly numb in terms of sensation and the strength had not yet returned.

Two weeks after surgery he was doing remarkably better and his incision was healing beautifully. He had no signs of nerve damage in his left leg and I cleared him to begin formal physical therapy.

**DAN IS A WONDERFUL EXAMPLE OF A SPINETALE. HE SUFFERED FROM A SEVERE SPINAL DISORDER THAT WAS CAUSING HIM PROGRESSIVE NERVE DAMAGE, WAS TREATED WITH A MINIMALLY INVASIVE SURGERY USING THE OPERATING MICROSCOPE, AND WAS ABLE TO RETURN TO FULL HEALTH AND FUNCTION. WELL DONE, DAN!**



Figure 1: L3/4 paracentral disc herniation.

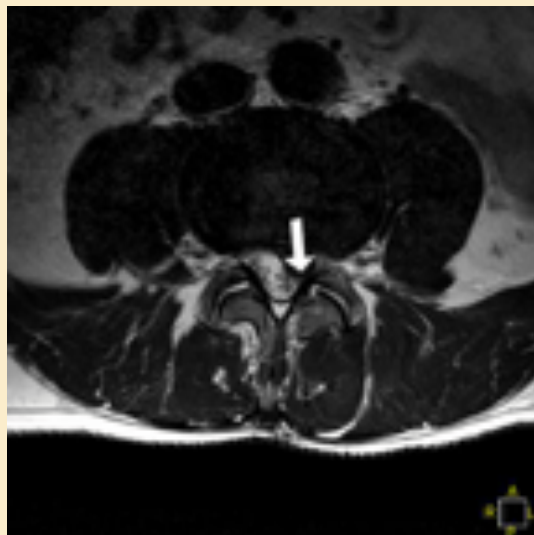


Figure 2: MRI of traversing L4 nerve root.



## Dustin Adams **BREAK... BREAK...**

My back pain story begins with four years in the Marine Corps infantry as a 0331 Machine Gunner with Charlie Company, First Battalion, First Marine Division. The initial abuse to my spine involved repelling out of helicopters with 100+ lbs on my back, 26+ mile hikes carrying my machine gun and accompanying gear, 15 mile runs in all terrain, elevations, and weather, and spending many nights on the ground. I served in Operation Enduring Freedom's initial invasion of Afghanistan in 2001 and after four years of service I already felt the destruction upon my body and decided to pursue the civilian life. After the Marine Corps I worked in construction and maintained an active outdoor lifestyle of camping, hiking, fishing, and marksmanship while putting myself through college.

Fast-forward to 2012 during a game of racquetball when I sprinted across the court to hit a ball and immediately experienced paralyzing pain in my lower back. I collapsed to the floor because the pain was so debilitating. I sought immediate treatment at an alternate spine and pain management facility. After 1.5 years of steroids, opioids, and facet injections, I became so

frustrated that I stopped seeking treatment and took a break from life for six months while I let my body heal naturally.

I was finally on the mend, feeling like myself again, and back to normal recreational activities when I was in a motor vehicle accident on July 4, 2015. My car was at a near stop when it was plowed from behind at 50+ mph. (Please don't text and drive!). As soon as the adrenaline wore off, I began to feel the familiar pain in my lower back and shooting pain down both legs and knew that I was back to square one. I sought immediate treatment at my previous spine and pain management facility, but this time my pain was so much different. At 33 I was wearing a back brace and using a cane because I could no longer walk more than 100 feet on my own, I was unable to sit or stand for more than 10 minutes, and I certainly couldn't live my previous lifestyle. Along with the maximum recommended doses of steroids, opioids, and facet injections, my doctors also added in nerve blocks, trigger point injections, and physical therapy. I sought alternative treatment options through



chiropractic, acupuncture, massage therapy, and even essential oils. I was on so many different medications I could hardly keep track of what to take and when and became irritable as I neared my next dose. I slept 15+ hours a day and spent every weekend sleeping or lying in bed. My wife and I fought constantly, our marriage was on the brink of failure, and I felt as if I was never going to get better.

I continued to experience significant pain, but my MRI images weren't consistent with what I was feeling. I knew the pain was not "all in my head", which is what the doctors consistently made me feel was the case. My wife began accompanying me to my appointments because I couldn't think clearly from all the medications or retain what they were telling me and suddenly I was receiving injections that were never ordered by my pain management doctor. My pain was not being managed and we wanted to begin discussing the end goal to my treatment since I only seemed to be getting worse. They told me the end goal is to "help you live your life" in which I responded with "my life does not consist of pills, endless injections, and constant pain". It was with this discussion that we decided to seek the opinions of other spinal specialists.

Two neurosurgeons indicated a need for a spinal fusion after reviewing my previous attempts at treatment but advised against it because I was 33 at the time. Both indicated I would be back in 10 years for a second fusion on the next two discs. I was told I just needed to wait it out and continue with the treatment I was receiving. My wife and I were lost, frustrated, angry, and stuck. We felt like we had no other options and that this really could be my new life. A weird coincidence, maybe it was serendipitous, but we met a lady who had been through a similar experience with my previous spine and pain management facility. We learned of a mythical place in which the doctors cared about you, communicated with the other doctors about your treatment, and worked in conjunction with your pain management doctor and physical therapists. I booked a consultation the next day.



A week later I am laying on the floor of an exam room with my knees bent and in walks a young doctor wearing cowboy boots, followed by his team. We discussed my history, previous treatments, and outcomes.

He listened intently to me, my wife, and our story with complete compassion for how my back pain was impacting our life and marriage. He took my pain seriously and acknowledged that my MRI images were not reflective of the pain I was experiencing. Dr. Good made me feel like a friend who had my best interest in mind at all times. We shared fishing stories and he told me how stem cell regeneration had helped him overcome an injury to his knee. Nothing was sugar-coated and for the first time it felt as if I knew all my options and the justification for his recommendations. After meeting with Dr. Good and his team we knew with 100% certainty that he was the doctor for us.

Together my medical team, wife, and I agreed to proceed with stem cell disc regeneration and it changed my life. My procedure was more painful and my recovery was much harder than

anticipated. I had a difficult time managing my pain during and after the procedure since I had been on opioids for so long. It was like nothing I had ever felt. I stuck it out and was able to get through recovery without the use of steroids. I could barely move after the procedure so I used walking sticks to help lift myself in and out of bed and to walk. Each day I walked a little bit further—first to the bathroom, then to the backdoor of my house, and eventually to end of the street.

After several weeks I was moving more than prior to the procedure and within two months most of the back pain had dissipated. The sciatic nerve pain was completely gone and Dr. Bharara (pain management specialist) had already decreased my medications. I was able to ramp up my physical therapy and slowly started reliving the life I was previously accustomed to—a slightly modified version, of course. I began eating a paleo diet and between the diet change and physical therapy I lost nearly 50lbs—taking significant strain off my back. By the third month I had decreased my medications again and completed an eight-mile hike with zero residual pain; I did have to stop constantly along the hike... to wait for my wife! Because I'm finally feeling like myself

again, my wife and I decided to relocate to Reno, Nevada to live the outdoor lifestyle we love and have missed for the last several years. (And guess who got to load and unload the moving truck?!) We walk along the Truckee River almost every day and spend as much time as possible exploring our new home along the Sierra Nevada Mountains. With the help and care of Dr. Bharara I have continued to decrease my medications and anticipate taking my last dose at the one-year mark of my procedure!

My advice to someone suffering from back pain is to be your own advocate, ask questions, conduct research, and seek multiple opinions.

**STAY FOCUSED ON THE LIFE YOU WANT TO LIVE, NOT THE LIFE YOU'RE FORCED TO LIVE BECAUSE OF PAIN.**

There IS a solution once you find the right team. Involve a loved one to assist with your care, advocacy, and support. Do the physical therapy, it does work.

PLEASE DON'T TEXT AND DRIVE!





## THE CLINICAL PERSPECTIVE

### Christopher R. Good, M.D., F.A.C.S.

Virginia Spine Institute

There really is not much for me to add. Dustin's story speaks for itself! I was very struck when I met Dustin and his wife, as I commonly am when given the opportunity to care for the brave men and women who serve in our Armed Forces. Dustin's problems were likely the result of a genetic predisposition along with many years of wear and tear and stress put on his back. Looking at his MRI, two discs (red arrows) are starting to dry out and develop "disc disease". For many of us, this is a normal part of aging, but in Dustin's case, even the slightest pressure would cause a great deal of pain and misery. It was very sad for all of us to see a man as strong as Dustin reduced to such a state and to see all of the negative side effects of the high-dose pain medications he was using.

When I first met Dustin and his wife, I thought the only option that had a chance of helping him would probably be surgery, but as we got to know each other, we explored the option of regenerative therapy. After spending a lot of time discussing, we elected to try to avoid the surgery given his young age and physically demanding lifestyle prior to the injury. Stem cells and growth factors were injected into Dustin's discs, rapidly reducing the pain he had experienced for so long.

Dustin's wife was tremendously supportive during this difficult time and his story serves as a lesson to us all.

**HIS LIFE IMPROVED AS THE RESULT OF A REGENERATIVE STEM CELL TREATMENT, BUT HE NEVER WOULD HAVE OVERCOME HIS OBSTACLES WITHOUT STRENGTH, PERSEVERANCE, AND MOST IMPORTANTLY, HOPE.**

It also shows that all of his hard work in terms of physical therapy, dietary changes, and weight loss can really pay off.

It has been an honor for all of us at Virginia Spine Institute to care for Dustin and his family and nothing makes me happier than seeing people get off of pain pills and get back to the life that they love!

Congratulations, Dustin!!

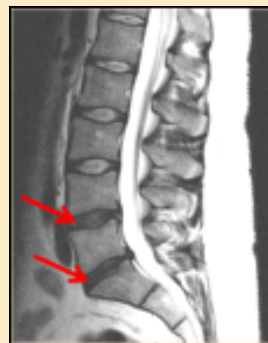


Figure 1: Side-view of MRI highlighting unhealthy discs

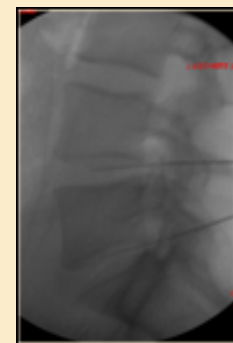


Figure 2: Side-view X-ray of needles entering into the discs, injecting stem cells and growth factors



## James McKnight **BACK ON THE BRIDGE**

I had been a union electrician for 42 years at the time of my injury, enjoying my work on The Golden Gate Bridge. At 60 years old I had experienced back pain and some sciatica from time to time as most construction workers do, but in mid 2015, I was trying to pull some wire out of a conduit when I felt a “pop” in my lower back. There was some immediate pain, but I had no idea of the extent of the injury at that time. I could barely get out of bed the next morning. I went to work, reported the injury, and was sent to a nurse practitioner who gave me some pain medication, said I should rest it for a week or so, and to come back in two weeks. The pain continued to worsen and when I returned to the doctor, they ordered an MRI to better evaluate my condition. I was diagnosed with a herniated disc and was sent to a spine surgeon for further analysis. His hope for me was that it would get better over time and with physical therapy I would get better.

At first I started walking every day, building up to about four miles a day, and taking pain medication at night to sleep. I was instructed to start physical therapy, but after the second day I just about crawled back to my car. From there everything got worse and very painful.

I could no longer stand up straight and when I turned sideways or raised my arms above my shoulders, I could not stand the pain. I was taking pain medication every six hours with little relief.

With my condition worsening, I could not lay flat in my bed and was only comfortable in a recliner in a sitting position with my feet up. I stayed like this hoping to get better for a few months, but it was like being in jail. It was all I could do to stand to make a sandwich for lunch! I decided it was time to get a second opinion. While looking for a spine surgeon in my area, I found Dr. Slosar and came upon his website. I called his office, explained my condition, and was able to set up an appointment that day, thanks to Gina!

When I came in for the appointment, Dr. Slosar was very personable. He looked at the MRI and brought his laptop over to me to show the ruptured disc and the disc material that was kinking my spinal cord. He explained to me that in order to live a normal life again, I needed to remove the obstruction from my spine. I was really scared of what my life was like at that point and wondered if being crippled in retirement was in store for me. Dr. Slosar reassured

me that he could fix me up and told me, "This is like having a rock in your shoe and the sooner we take it out, the sooner you can get back to normal."

I had surgery in August 2015 - without a doubt one of the best decisions of my life! I am SO grateful for Dr. Slosar being a skilled and extremely talented spine surgeon. He performed a laminotomy with a microdiscectomy between the L3/4 vertebrae. As I awoke after surgery, Dr. Slosar was in the recovery room with me and asked me "Do you think you can stand up?" I said in disbelief "Right now?" He said "Yes, let's see how we did." He proceeded to help me get my legs on the floor and for the first time in five months, I stood up straight! He asked me to try and touch the ceiling and when I raised my arms over my head (which I had not been able to do for months), I knew I was going to be all right. Dr. Slosar smiled and said "That's great!" I am so thankful for Dr. Slosar and that I was able to find him in my time of need. As well as being a talented surgeon, he is an all around great guy with a wonderful bedside manner.

Recovery is painful for the first two weeks, but Dr. Slosar gave me enough medication to keep me comfortable. After two weeks I started walking every day and by four weeks I was walking nearly five miles a day. At five weeks Dr. Slosar started me in physical therapy which went a lot better than before. Three months after surgery I was back at my job as an electrician on the Golden Gate – climbing, running pipe underneath, and even hiking the main cables!

**IF I COULD DO IT AGAIN, MY ADVICE WOULD BE: DON'T WAIT UNTIL YOU ARE TOTALLY INCAPACITATED TO GET HELP AND GET A SECOND OPINION IF NEEDED.**

Invest in the frozen gel ice pack belts - they help a lot! Dr. Slosar is one of the leading surgeons in minimal invasive surgery, so be sure to get his advice (or another doctor you trust) to help get your life back!





## THE CLINICAL PERSPECTIVE

**Paul Slosar, M.D.**

*SpineCare Medical Group*

I am fortunate in my line of work to meet many interesting people, but I must say that James probably has one of the most unique jobs on the planet. There are only a handful of people who climb up (and perform work on) the Golden Gate Bridge every day! I still remember meeting him for his first consultation visit in my office as he explained his injury and demands of his job. He sustained a very common injury to one of the lower lumbar discs in the spine and had severe leg pain. The disc fragment was compressing his nerve causing sciatica symptoms. James is a very fit man who has a physically demanding job, so this injury was a devastating blow to his function and occupation.

I initially recommended the basic treatments, including physical therapy and cortisone injections, but his symptoms did not respond. What many people don't realize, doctors included, is that there are several landmark scientific studies proving that for patients with persistent nerve symptoms after three months of basic treatment, surgery is actually more effective than continued non-surgical care. These patients improve more rapidly, return to function earlier, and don't need ongoing medical care once the surgery removes the nerve compression.

I performed a minimally invasive surgery on James called a laminotomy/microdiscectomy. This is one of the most common and successful surgeries I perform with the majority of patients being treated as outpatient, avoiding an overnight stay in the hospital. I made a small incision without damaging any muscles and used a microscope to safely remove the piece of disc that was pressing on his nerve. I recall after he woke up that he was nearly immediately relieved of his leg pain.

**AS YOU CAN PROBABLY TELL, JAMES IS A MODEL PATIENT. HE PARTICIPATED DILIGENTLY IN HIS POST-OP PHYSICAL THERAPY AND WAS BACK TO WORK ON THE BRIDGE THREE MONTHS LATER, CLIMBING AND PULLING WIRE WITHOUT ANY PROBLEMS.**

As an added bonus, James invited my family and I to tour the Golden Gate Bridge with him as our guide! When you take a tour with James, you explore the bridge from the top of the tower to the deck below. Next time any of you are there, take a look all the way up and you can see where James and I are standing in those pictures. It was an amazing, once-in-a-lifetime experience that I will never forget.

Thank you James for being a Spinal Champion!

THE SPINAL RESEARCH FOUNDATION'S

# WE'VE GOT Your Back

RACE FOR SPINAL HEALTH



Wow, what a year – our 10th year anniversary, in fact! Igniting even more excitement, we were part of Reston history and hosted the first ever 5K race in the new event space at Reston Station, which served as a wonderful platform to educate the public about spinal health. Thanks to our wonderful and loyal sponsors and volunteers, we spent the day celebrating Spinal Champions and raising significant funds for research!

A big thanks to our sponsor BlueWater Federal Solutions, this year's largest group, with over 100 race registrants! A special thanks to all of our other generous sponsors – Cameron McEvoy, Cushman & Wakefield, The Insurance Exchange, K2M, Marrs & Henry, Medtronic, Orthofix, Potomac Surgical, Reston Hospital Center, Titan Spine, Virginia Spine Institute, Virginia Therapy & Fitness Center, and Zimmer Biomet!



**Chris Gorini, Research Director**  
Spinal Research Foundation | [cgorini@spinerf.org](mailto:cgorini@spinerf.org)



## WELCOME CHRIS!

Prior to coming to SRF, Chris was a Staff Fellow at the FDA in the Center for Devices & Radiological Health in the Office of Science & Engineering labs. His FDA research focused on projects examining disorders of the peripheral and central nervous systems using optogenetics (a technique where light is used to control nerve function) and brain electrode implants. This research was used as a means for disease treatment over long-time scales. In addition to bench work, Chris acted as a subject matter expert for DARPA (Defense Advanced Research Projects Agency), Department of Defense, and Veterans Affairs Neurotechnology grants. While at FDA he acted as a certified reviewer for FDA medical device consults, premarket reviews, and investigational device submissions.

Chris completed a postdoctoral fellowship in Bioengineering at Stanford University where he worked on control of peripheral motor neurons using optogenetic and pharmacological techniques in order to better control involuntary muscle movement and pain. Chris earned his Ph.D. in Neuroscience from The George Washington University where he received a pre-doctoral fellowship from the American Heart Association for his work on brainstem control of heart rate.

### **Why I came to SRF:**

I am extremely interested in the clinical side of patient care and how new therapies can improve their quality of life. My background has afforded me the opportunity to research the basic science side of neurological dysfunctions and potential treatments; however, it takes an incredible amount of time for these therapies to come to market for eventual public consumption. The work done by SRF provides a platform to catapult groundbreaking therapeutic interventions in the hopes of not only advancing quality of life but also providing alternatives to conventional neurological treatments.

### **What I enjoy most about my role at VSI:**

I am looking forward to promoting SRF's mission and to continue advancing the innovative research that VSI and other Centers of Excellences are currently conducting.

### **How I plan to advance and elevate SRF:**

I plan to increase SRF's exposure through patient education, research advancement, and advocacy. This includes publishing data and new therapies that both VSI and our Centers of Excellences are currently acquiring and performing. I also plan to increase SRF's presence through fundraising and new clinical partnerships with those on the cutting edge of spinal therapeutics. The goal is that this leads to educating those affected by spinal dysfunctions and driving awareness of new clinical treatments, which is crucial to the mission of SRF.



**Colin M. Haines, M.D.**  
Virginia Spine Institute



## COMMON CAUSES & PREVENTION TIPS FOR WORKPLACE SPINAL INJURIES

Back and neck pain is an extremely common cause of disability, affecting up to 65% of people in any given year<sup>1</sup>. In fact, it has been suggested that low back pain is the most important cause of any type of health impairment<sup>2</sup>. While many injuries occur during recreation or at home, a large percentage of them occur at work. The scope of injuries varies widely, from muscle and tendon strains to fractures with nerve or spinal cord injury. Traditionally, work injuries were due to heavy or repetitive lifting, however, the type and cause of spinal injury has changed with the evolving professional landscape<sup>3</sup>.

**AS SUCH, THERE IS AN EXPONENTIAL RISE IN INJURIES FROM REPETITIVE MOVEMENTS AND POSTURE PROBLEMS THAT MAY BE COMMON IN AN OFFICE ENVIRONMENT.**

The following are the most common causes of spinal injuries in the workplace and what can be done to avoid them.

Improper lifting techniques can make one especially prone to low back injuries<sup>4</sup>. When lifting an object from the ground to a standing position, the tendency is to bend forward at the waist, grab the object, and extend the back. This is entirely incorrect and places significant stress across the

intervertebral discs in the lumbar spine. If too much force is transmitted through the discs, there is a risk of disc rupture and subsequent herniation. When lifting, aim to keep a normal posture of the entire spine and bend with the hips and the knees. It is recommended to wear a lifting belt to assist with proper spinal posture. If you need to hold an object, make sure to keep it as close to your body, since the further away it is from your body's center, the harder your body has to work. Also, avoid twisting at the waist if you are holding an object because a heavy load with an awkward rotation significantly stresses the spine. Lastly, and very importantly, avoid lifting heavy objects if at all possible. By eliminating the cause, you can eliminate the risk.

In the office setting where manual labor is typically minimized, prolonged sitting is often the root of a spinal problem. Normally the neck and low back both curve backwards, which is referred to as lordosis. However, people who sit at a desk for prolonged periods of time, especially those who use computers, typically have hunched forward neck and low back posture, also known as kyphosis. By reversing the spine's alignment, the normal equilibrium is disrupted. When muscles and ligaments are stretched and prone to damage, the discs experience too much force and may

herniate and the spinal cord and nerves may suffer from prolonged compression. To correct this, emphasizing proper spinal posture is crucial. When sitting, placing a small pillow in the low back may help maintain your lordosis. Raising monitors to eye level will relax the neck into its resting lordosis as well. Elevated desks with standing workstations position your spine properly in the neck and low back. Lastly, taking breaks from prolonged sitting to walk around the office will help take the constant pressure off of your discs and minimize long-term damage.

Landline and cell phone use in the workplace is another common cause of neck pain. People frequently tilt their heads towards the side of the phone, especially if trying to free up their hands for multitasking. If done repetitively or for long periods of time, this unilateral bending places asymmetric force onto the neck's discs, joints, muscles, and nerves. Avoiding this position is one easy way to avoid a phone neck injury, of course. Another technique which does allow for maintained workplace efficiency is wearing a phone headset or speaking on the speaker phone.

Finally, the act of getting to and from work may cause spinal problems in and of itself. As people move farther away from the workplace, the average daily commute increases. In the Washington, D.C. area alone the average travel time is over 30 minutes by car each way. While typically thought of as benign, prolonged car travel can injure the spine. Awkwardly rotating the neck to view rear traffic may cause neck damage. However, more common is low back pain from either tailbone pressure or poor spinal posture, similar to sitting in the workplace. Lastly, longer commutes in typically high traffic environments means higher chance of a car accident. Any significant auto wreck carries an extremely high chance of serious spinal injury. While the length of time commuting may be difficult to change, safe driving practices with proper cushioning minimizes the chance of spinal problems.

Despite the overall trend towards an office setting, workplace spinal injuries are more common than ever. It does not take a high energy injury to cause spinal disability. Repetitive, low energy mechanisms are more frequently becoming the root cause of neck and back pain.

**IDENTIFYING YOUR WORKPLACE RISK FACTORS AND ENACTING A SOLUTION IS THE FIRST KEY STEP TOWARDS MAINTAINING EXCELLENT SPINAL HEALTH.**

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**Michaëlle Edwards**  
YogAlign



## SIT, BREATHE, & ALIGN YOUR SPINE

### Chairs Are Sabotaging Our Spinal Curves

Whether we are driving a car, working on the computer, or having a meal, we spend a lot of time sitting in some kind of chair. Some people sit more than eight hours a day and back pain has become an epidemic in the modern world. Most chairs are made in a right angle shape with the seat perpendicular to the chair back. The human body is designed for movement and like all of organic nature, the structure of our body is designed to be round and curving, composed of cylinders, spirals, and arches. But for some odd inexplicable reason, we designed chairs to be linear and right-angled. The bane of our modern lifestyle is that we have to spend so much time in a chair, forcing our round body into a linear perpendicular shape.

Sitting in a chair improperly can sabotage posture, compress our spinal curves, and inhibit the muscles of respiration. In fact, chair sitting can inhibit the movements of breathing and contribute to poor posture habits. Here are some techniques that will help you sit stronger and longer while keeping your spine aligned when sitting in a chair.

**CHAIR SITTING HAS BECOME THE  
NEW SMOKING.**

Most chairs are designed to position the body in a right-angle position where the kneecaps are located directly across from the hip joint. Having the knees at the same level as the hip joint passively shortens the abdominals, weakens the back extensors, inhibits the movements of breathing, and suppresses the expansion of the rib cage. Most people slump backwards with their pelvis tucked under and spine collapsed rather than engaging the spinal extensors to hold up their trunk. The back muscles get weaker and the breathing apparatus begins to atrophy, leading the spine to compress, drive the internal organs forward, and overload the peripheral muscles of the lower back and neck.

Chair sitting can lead many people to develop dysfunctional breathing habits, forcing many to initiate breath primarily using the neck, shoulder, and upper chest muscles. These breathing and posture habits can become ingrained, resulting in forward head carriage, a rounded upper back, C-shaped spine, and a posteriorly positioned pelvis. The C-shaped spine further inhibits the breathing apparatus and the structure begins to collapse inward, causing premature aging, chronic pain in the lumbar spine and sacroiliac joint region, spinal arthritis and vertebral degeneration, inhibited digestion and elimination, higher levels of anxiety, depression, and other disorders such as headaches and vertigo.



### Active Sitting

Here are some tips for sitting that will get you out of the C-shape, align your spine, tone your core from the inside out, and greatly reduce the negative effects of chair sitting. You can use these active sitting techniques by utilizing the movements of breathing to engage your core muscles, stabilizing the spinal column, and freeing your breathing apparatus while in a chair.

**Elevate Your Hips** - Always keep your hips higher than your knees when sitting in a chair by sitting on a firm cushion, yoga blocks, or a large exercise ball where your knees are kept below the level of your hip joint. Try to get high enough to position your hips four to five inches above the level of your knee caps. Avoid using the chair back and engage your back muscles while keeping your thighs hip width apart. Avoid letting your thighs roll out by engaging your gluteal muscles while sitting to support the alignment of your pelvis and sacrum.

**Computer Adjustments** - Position the level of the computer screen directly across from eye level using books or blocks to elevate the screen. Type with your shoulders relaxed and away from your ears. If using a laptop computer, consider purchasing an external keyboard so that your hands and eyes are separated and the computer screen can be elevated to eye-level.

### Maintain Optimal Spine Alignment While Sitting

Practicing focused breathing methods can greatly improve posture by aligning your spine from the inside out.

**Core SIP Breathing Exercise** - While sitting in the chair with hips elevated above your knees, slide one foot a few inches forward of the other. Sit tall and allow your shoulders to soften away from your ears. Keep the pelvis level and make sure that your lower back curve is not flat. Straighten your elbows and allow your arms to position along the sides of your body with thumbs facing forward. Open your fingers wide with the palms facing the sides of your torso. Always make sure the lumbar spine has its natural curve and the sacrum is positioned with an approximate 30° of nutation. Make sure you feel yourself sitting on the front edge of your sit bones, prohibiting your pelvis from rocking backwards.

**Inhalation** - Begin by positioning your mouth as though you are about to whistle, making a small circular opening in your lips. Inhale slowly and quietly through the O-shape in your lips to a comfortable level of expansion. Feel your rib cage expanding like a ball filling with air. Make sure to move the ribs sideways and feel the expansion of your ribs in the back body. Retain the inhalation for five seconds, making fists with your fingers and contracting your gluteal (buttock) muscles.

**Exhalation** - Open the fingers and begin to exhale while making an SSS sound as though letting air out of a tire. Move the air out slowly and sit tall. Keep contracting the inner thigh muscles, keeping them hip width apart. Do not allow your thighs to externally rotate (roll outwards) as the lumbar spine will collapse and you will lose the natural sacral arch. Observe the internal contraction of your rib cage and abdominal muscles while retaining the curves in your spine and keeping your pelvis neutral. Do not exhale too deeply or allow your lower back to flatten. Inhale again using the SIP breathing technique through the O-shape in your lips. Keep expanding and opening your fingers, noticing how your waist lengthens from the movements of inhalation. Fist your hands and gently retain the breath for five seconds while contracting the inner thighs and muscles of your buttocks and torso. Open the fingers and let the breath out slowly, making the SSS sound through your teeth. Keep the body lifted and upright.

## Exercises & Adjustments to Activate Your Deep Core

**Resistance SIP Exercise** - Place your feet hip width apart with your feet slightly forward of your ankles. Place your fingertips between your thighs with your elbows extended (straight). Keep fingers wide open and gently squeeze your thighs in against the resistance of your hands pushing outwards. Begin the SIP inhalation technique and gently retain the inhalation. Make your hands into fists and begin to squeeze inwards more with your inner thighs, squeezing your buttocks while pressing out with your hands. After five seconds, open fingers wide, exhale slowly with the SSS sound, and continue to adduct (contract) your inner thighs while abducting (pressing outwards) with your hands.

**Sitting Tall** - Practice sitting tall with your thighs engaged as though gently squeezing a ball between them.

**Adjust Your Screen** - When sitting at your computer chair, always keep your screen adjusted to eye-level and keep your knees well below the level of your pelvis. Notice your inner core muscles have engaged? Yes, keep it up!

**Walk Around** - Get up every 20-30 minutes and spend two or three minutes walking around the room using the SIP breathing technique to elongate the torso on the inhale and using the SSS sound on the exhale to tone the core muscles to stabilize and support the natural curves of your spine.



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## About the Author:

Michaëlle Edwards is a massage therapist, posture educator, author, and musician from Kauai, Hawaii. She is the creator of YogAlign and FitAlign Posture Trainings specifically designed to give people of all ages the tools for optimal spine alignment using safe and comfortable exercises. Michaëlle has been teaching breath-based alignment techniques for over three decades and conducts seminars and trainings around the globe. She is the author of numerous articles on posture and the book YogAlign ; Pain-free Yoga From Your Inner Core and is a frequent writer for the Huffington Post.



**Evan A. Miller, BS Kinesiology,  
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*Physical Trainer*



# TRAINING THE SPINE FOR FUNCTIONAL MOVEMENTS

## Functional Movements

Most people who step into an exercise facility are unaware of how to properly perform functional movements.

**FUNCTIONAL TRAINING CAN BE CHARACTERIZED AS EXERCISES THAT INCREASE THE EFFICIENCY AND PERFORMANCE OF MOVEMENTS ASSOCIATED WITH DAILY ACTIVITIES.**

Done properly, it can lead to a lifestyle free of injury, but the movements must be done correctly to activate the appropriate muscle groups. However, when individuals are not aware of an inaccurate position or movement, multiple injuries can occur with the most common result being a lower back injury.

According to the American Chiropractic Association, back pain is the most common excuse for missing work and the second most common reason for visiting a doctor. There are a few reasons for this, the most common being related to people who sit at their desk for prolonged periods of time during the work day. Combine stagnant sitting, poor posture, and lack of ergonomically designed offices and mix in little or no exercise and back pain is imminent. At the same time, poorly executed exercises could also lead to back pain,

more specifically lower back pain. Preventing back pain can be accomplished by learning how to properly engage two core muscles, the Rectus Abdominus and the Transverse Abdominus. Anti-rotational exercises like dead bugs, Pallof press, and one-armed dumb bell row as well as basic movements such as a plank are good examples of this. Exercises that target the posterior chain muscles will help you maintain an even balance and better posture. These movements include hip-hinge and pull movements such as the body weight back extension, deadlifts, back rows, seated lat pull down, and pull-ups. These movements are typical and can be performed on most fitness equipment, but it is important to work with a fitness professional to find the correct settings and make sure that your body is properly aligned and fitted for the functional movement.

## Assessing Your Strengths

Spotting weak or underactive muscles is the first step to a stronger core and better posture. Both physical therapists and fitness professionals use functional movement screening assessment tools to identify underactive or weak muscle groups. When beginning an exercise program, it is highly recommended that you take the time to complete such a screening with a fitness professional. One of the main assessments is the overhead squat used by professionals to locate imbalances and weak muscles throughout your entire body.

The overhead squat is performed with hands raised above the head; the fitness professional can identify a weak or underactive muscle group within several repetitions. By identifying the muscle groups that need strengthening or conditioning, a program can be individually tailored to focus on muscular efficiency and effectiveness.

Back pain is one of the most common physical problems in America. A sedentary lifestyle and weak core muscles left unchecked can lead to increasing your chance of a more serious injury or spinal issue. Working with a certified fitness professional or physical therapist and completing a functional movement screening are the first steps.

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**CONTINUING YOUR AWARENESS  
OF HOW THE BODY WORKS AND  
BEING MINDFUL OF PROPER  
TECHNIQUES WILL IMPROVE THE  
QUALITY OF YOUR WORKOUTS  
AS WELL AS YOUR LIFE.**



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CHAMPIONS, SUPPORTING ONE  
ANOTHER AND CELEBRATING."

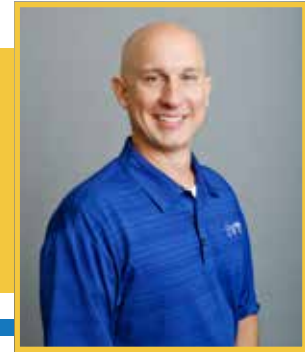
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Certified Strength Coach,  
Virginia Therapy & Fitness Center



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## WORKING OUT AT WORK

### Time to Move

One of the most common problems we run into with our patients is their perception that workouts are too time consuming or difficult for them to fit into their daily routines. Between grueling work deadlines, endless hours sitting or driving, hectic family schedules, and the aches and pains that creep into our lives, it's easy to fall into a daily routine that can be a drain on our wellbeing as well as our spinal health. With so many people working in an environment that is based around sitting most of the day, we are finding just how detrimental to their health it can be. Some studies show that sitting has become the "new" diabetes or smoking, contributing to more deaths per year and loss of quality of life. One useful tool that can significantly help your day-to-day work routine is investing in a standing desk.

**DON'T THINK THAT A STANDING DESK WILL SOLVE ALL OF YOUR WOES BECAUSE MOVEMENT IS THE KEY TO HUMAN RESILIENCY!**

If you simply trade off from a slumped seated posture to a slumped standing posture, you won't find much benefit. However, if you use the standing desk as a way to break the monotony of your day and get in a few exercises to prime your body for the functions it is made to do, you will find yourself feeling better and more energized throughout your day.

Most of our patients have tried to fit in trips to the gym or participate in some sort of physical activity to try and get (and keep) themselves in shape. Unfortunately, many times those good intentions backfire when they start experiencing pain, suffer injury, or give up after not seeing positive returns. They usually do one of two things: they either quit altogether ("why would I continue to do something that hurts") or they push harder to try and break through the pain (our least favorite saying "no pain, no gain"). The truth is that neither option is sustainable. Our job is to make sure we educate our patients on resiliency and how finding pain-free ways of performing functional movements (aka daily actions) is more important than overworking your body at the gym.

### Working Smarter, Not Harder

Out of a 24-hour day, we should typically sleep six to eight hours, leaving us roughly 17 hours of activity. Let's take a minute to think about what our 17 hours typically look like.

You wake up, drive to work, sit in front of your computer screen, sit for lunch, and drive back home to do it all over again tomorrow. Factor kids and errands in there, too, and you have even more hours under your belt of sitting!

**WE'RE STARTING TO SEE HOW SITTING IS QUICKLY BECOMING A REAL FIRST WORLD PROBLEM.**

In the grand scheme of things, what will one or two hours in the gym do for your ability to stay resilient to all that sitting? Especially if that time in the gym is spent doing exercises that are harmful to your spine and posture rather than built around safe lifting foundations and techniques. It's time to start working smarter, not harder!

For all the reasons above we decided it was time to put together a few exercises to help you not only move more but move better throughout your day. While these exercises are a platform to start from, there are numerous variations and modifications that can be made to address your specific needs and space constraints. If you find that you are experiencing pain at any time performing these exercises, we suggest you seek out a certified and recommended trainer or physical therapist to help you get started.

**Unglue Those Hips** - Start by performing a hip release or stretch to target the area in which we should be hinging from. It is amazing how many people think we should bend from the waist or belt region, but all bending action should hinge at the

hips with no slouching, bending, or rounding in the lower back or waist region.

**Nourish the Spine** - Discs are gel-like bodies that perform a very important role in helping your back work efficiently. One of their principal functions is to act as shock absorbers and insulators between the blocks of bone (vertebrae) that make up your spine. Not only do your discs have to cope with constant pressure, they also absorb shocks, compression, and twisting stresses, which is why we do not promote a lot of stretching of the spine. When lying, sitting, or standing for long periods of time, the back can feel stiff and tight due to constant compressive load. Taking a few minutes to perform gentle, controlled motions will help nourish the discs in our spine.



Figure 1: Couch stretch



Figure 2: Standing piriformis stretch



Figure 3: Quadruped rocking adductor stretch



Figure 4: Shin box stretch



Figure 5: Quadruped arch and sag



Figure 6: Standing side bend reaches



Figure 7: Thoracic rotation and extension



Figure 8: Bridges

**Reinforce Range of Motion** - Once you have primed your hips for movement and nourished your discs, it's time to throw a few exercises into the mix. Our favorite is the Alternating Elevated Bridge (Figure 9). Starting from a regular bridge and squeezing the ball as you lift the hips as high as you can, make sure your knees, hips, and shoulders form a straight line. Keep your head in a neutral position, look up, and have your heels on the ground, and your toes pointing up off the ground. To make the exercise more challenging, alternate raising one hip up at a time by pushing your heel into the ground. For example, from the bridged position, raise the right hip higher by pushing the right heel into the ground. The goal is to lift one hip higher without the other side sinking down. Perform three to five lifts on each side. It is extremely important to work on the range of these movements slowly and progressively. Be mindful of the phrases that we like to live by when determining the intensity and range of motion for exercising: "aim for the hardest thing that you do well" and "the mostest from the leastest".



Figure 9: Alternating elevated bridge

**THE TRICK HERE IS RATHER THAN MAKING THINGS HARDER THAN THEY NEED TO BE, DO A FEW REPS IN A RANGE THAT IS DIFFICULT BUT STILL CONTROLLED.**

This will allow you to accomplish challenging reps while maintaining pain-free posture. It is also extremely important to understand the difference between an exercise becoming uncomfortable (necessary in order to stress your body enough to make change) and the exercise creating pain. Any exercise that causes pain during movement should be looked at by your trusted trainer or physical therapist before continuing.



Figure 10: Single leg bridges



Figure 11: Squats (frontal and sagittal plane)



Figure 12: Side lunges



Figure 13: Reverse lunges



Figure 14: Dead lift  
(emphasizing hip hinge and  
neutral spine)



Figure 15: Single leg hold



Figure 16: Wall push-ups (or chair/desk)



Figure 17: Doorway pull-thru



**Mackenzie Hubert, DC**  
Chiropractor, Manhattan Total Health



## MAKING WORK LUNCHES WORK FOR YOUR SPINE

What you eat throughout the day and the health of your spine may seem like completely unrelated things, but they are actually very much connected! The type of food we eat determines whether or not the body will be in a pro-inflammatory state as well as if our bone, ligament, cartilage, and muscle tissue is getting stronger or weaker. On the other hand, the state of the spine and nervous system will determine how well we digest and assimilate the food we eat. Whether you're packing your lunch or going out with coworkers, here are some considerations on what to eat and what to avoid in order to feel healthy and energized throughout your day.

### **Eat to Decrease Inflammation**

Inflammation is a natural healing response of the body and can be beneficial in the short-term. However, long-term "chronic" inflammation has been linked to many of the modern day diseases people suffer from (heart disease, cancer, diabetes, etc.) and much of it is due to the foods people consume. As a chiropractor, many people come to me to treat their back pain and I always tell them that to truly resolve the issue and feel better, they must decrease inflammation in their body. People often complain of pain due to their arthritis. Well, if we break that word down, "arthro" means joint, and "itis" means inflammation. It makes sense that the joint(s) will feel better locally if they lower their inflammatory state. According to a recent article

from Harvard Health Publishing, here are some foods to add and avoid to lower inflammation.

*(While they recommend tomatoes, if you know or suspect that you're sensitive to "nightshade" vegetables – eggplant, white potatoes, red peppers, tomatoes - avoid them, as they are known to increase joint inflammation.)*

### **Anti-inflammatory foods to add:**

- Green, leafy vegetables - spinach, kale, swiss chard, collards
- Healthy fats – olive oil, avocado, walnuts, almonds, flax & chia seeds
- Fatty "omega-3 rich" fish – salmon, tuna, sardines, mackerel
- Brightly colored fruits/veggies – berries, oranges, cherries, carrots, beets, sweet potatoes
- Herbs – ginger, turmeric, cinnamon, garlic, basil, oregano

### **Pro-inflammatory foods to avoid:**

- Refined carbohydrates – white bread, pasta, cereals, pastries, etc.
- Fried foods (anything with partially hydrogenated oil)
- Soda and other high-sugar beverages
- Red meat (non-grass fed) and processed meats (hot dogs, sausages)
- Margarine, shortening, and lard

## Eat to Strengthen Your Bones, Ligaments, Cartilage, & Muscles

As we age, if we're not taking measures to prevent it, our bones and connective tissue can start to degenerate and weaken, leaving us prone to injury. Sitting all day at work can expedite this process, since weight bearing is what makes our bones and joints stronger.

**ASIDE FROM TAKING MORE WALKING BREAKS OR GETTING A STANDING DESK, YOU CAN ALSO EAT TO KEEP YOUR STRUCTURE STRONG.**

Most people now know that they need calcium and vitamin D for strong bones, but two other vital nutrients are magnesium and potassium. Magnesium is needed to activate all the enzymes that metabolize vitamin D in the body, so in supplement form, they should always be taken together. Potassium helps neutralize acid in the body so that calcium is not leached out of the bones. Sweet potatoes are a great source for both of these nutrients. Other food sources for bone health include:

- Calcium: raw dairy, green vegetables, cooked kale, yogurt, kefir, cooked broccoli, bok choy, cheese, okra, almonds\*
- Vitamin D: cod liver oil, sardines, salmon, mackerel, tuna, raw milk, eggs, mushrooms
- Vitamin K: leafy greens, broccoli, asparagus, cucumber, scallions, cabbage
- Magnesium: spinach, chard, pumpkin seeds, almonds\*, black beans\*, avocado, figs, dark chocolate (yay!), banana
- Potassium: avocado, squash, spinach, sweet potato, salmon, beans\*, banana, beets, swiss chard

*\*Note: Though beans and nuts are nutrient-rich and beneficial, they contain phytic acid which blocks absorption of other minerals. To reduce this "anti-nutrient" effect, you can "sprout" these foods by soaking them overnight or pressure-cook them.*

To support your other connective tissues, you want to eat collagen-boosting foods. These nutrients have all been shown to support and repair ligaments, tendons, and discs.

- Manganese – nuts, legumes, seeds, whole grains, leafy green veggies
- Omega-3 – as listed above, salmon, mackerel, etc.
- Vitamin A – liver, carrots, sweet potato, kale, spinach, apricots, broccoli, winter squash
- Vitamin C – guava, black currant, red pepper, kiwi, green peppers, orange, lemon, strawberries, papaya, brussel sprouts, kale, pineapple, grapefruit
- Sulfur – cruciferous vegetables (broccoli, cauliflower, kale, cabbage, turnips, brussel sprouts, bok choy), allium veggies (garlic, onion, leeks, chives), eggs, fish, poultry

While most of these foods are plant-based, **bone broth** has been getting very popular for its wide range of health benefits. Good quality bone broth can be made by acquiring grass-fed beef bones, submerging them in water with a splash of apple cider vinegar, and letting it simmer for 20-24 hours. (It's safest to use a crockpot, as you don't want to leave the stove unattended for so long.) You can also purchase bone broth from companies like "Kettle & Fire" and "Epic Artisanals". Whether you make your own or purchase it in stores, **bone broth contains ample amounts of collagen** as well as other vital amino acids and minerals that support the health of bones and joints.

Overwhelmed yet?! Health can be as complicated as chemistry, but the key is to keep things simple and applicable. Now that you know the why, here are some ideas for how to eat at work (and anywhere else).



### **Meal Prepping: “If you fail to plan, you plan to fail.”**

Since some people do not have access to a microwave or other means to warm up their food at work, these suggestions will take that into consideration. If you do have a microwave and want to heat up your lunch, pack it in glass or ceramic, as heating up plastic can leach harmful chemicals into the food. Another option is to keep paper plates at work so you can transfer your meal onto a safer surface.

The key to healthy eating is good meal prepping. Choose the day that’s most convenient for your schedule and take time to get things ready for the week.

To me, the most important thing to prepare is an abundance of roasted vegetables. I use these throughout the week for salads and sides. This veggie medley usually consists of many of the foods listed above, like red onion, winter squash or sweet potato, beets, broccoli, cauliflower, mushrooms, brussel sprouts, and carrots. You can chop them all up, place in a big bowl, and drizzle coconut oil and ample spices (sea salt, pepper, garlic, etc.) to taste. Place on a baking sheet and into the oven at 375°F for 45-60 minutes. It’s simple, satisfying, and helps meet your daily vegetable quota. (It’s also good to have sauerkraut in the fridge for a probiotic boost!)

For a protein supply, I like to prepare a sprouted bean salad, tuna or salmon salad, sautéed chicken, and hard-boiled eggs. Quinoa is a great plant-based complete protein source to have on hand as well.

Now that you have all of your materials, you can assemble your meals in a variety of ways. Here are my favorites:

- ***The Everything Salad:*** In a big container, start with a heaping foundation of organic mixed greens, topped with some diced raw veggies (cherry tomatoes, cucumbers, onion, bell pepper). Add a scoop of the roasted vegetables, sauerkraut, and a serving of sautéed chicken (about the size of your palm). If you’re very active at work, toss in some bean salad for extra protein.
- ***Superfood Sandwich:*** Ideally, use sprouted grain bread, like “Ezekiel bread”. After toasting the bread, cut a ripe avocado in half (save ½ for later or have with breakfast) and spread it on like mayo. Add your preferred protein, whether it’s chicken, sliced hardboiled eggs, or tuna salad. Top it off with sliced tomato, lettuce, and sauerkraut.
- ***Stuffed Pepper Delight:*** Start with cutting a big bell pepper in half. After cleaning out the seeds, fill that vessel up with salmon/tuna salad. Voila! For a side, pack a serving of roasted vegetables.



# THE REAL IMPACT OF BACK PAIN

Spinal injuries and disorders are much more common and have a greater impact than many people know.

They impact people of all ages, ethnicities, and economic situations. Onset can be sudden or become chronic, growing worse each year.

For these patients, each day means battling pain, crippling fatigue, muscle weakness, numbness, and more.

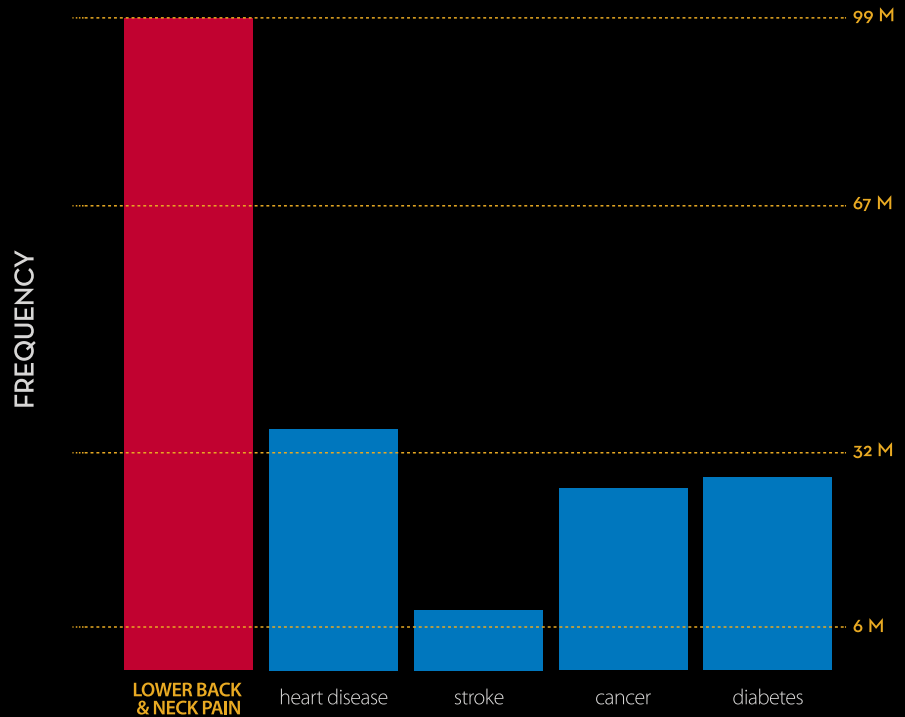
The Spinal Research Foundation believes that these people have the right to thrive and live free from pain.

*Together we will help patients return to the people and activities they love.*

## 99.3 M

adults in the U.S. suffer from low back and neck pain each year

U.S. ADULTS IN 2012



### 1 in 20

will be unable to work due to back or neck pain

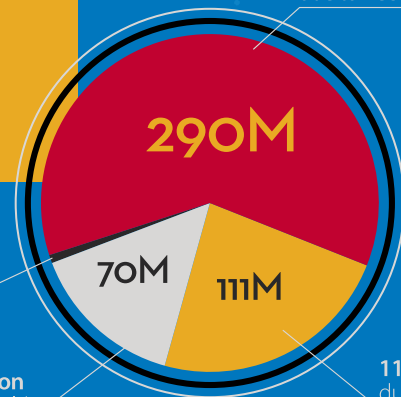


### 1 in 2.5

adults will experience low back or neck pain this year



290 Million due to neck & back pain



4 Million due to allergies

70 Million due to the common cold

111 Million due to the flu

Lost Workdays Per Year



Sources: Center for Disease Control, National Academy on an Aging Society/Asthma & Allergy Foundation of America, American Diabetes Association & American Academy of Orthopedic Surgeons



**Brandon Gwinup, Medical Assistant**  
Virginia Spine Institute



## YOUR BODY & YOUR BACK

The basic anatomy of your spine includes the vertebrae, facet joints, and intervertebral discs. The degradation of these areas is determined by a combination of your genetics, habits, environment, and overall physical health. Understanding how to manage these areas correctly is crucial in giving you the best possible outcome now and for the future. To make this topic simpler to follow, you can focus on two categories of wellness: active and passive. It is important to note that the topic of wellness is a constantly changing science and that there may not be one specific way to accomplish the same result for everyone.

### Active Wellness

Active wellness includes the parts of your life that require continuous effort to obtain and maintain a healthy lifestyle. This would include exercise, diet, drug and alcohol use, posture, and more. With every step you take, the discs in your back along with other areas of the body (sacroiliac joints, ankles, knees, etc.) act as shock absorbers to protect your bones from damage. When you increase the load on these areas, you run the risk of increasing the rate at which they degrade. The incidence of low back pain has been shown to increase up to 34% in men and 22% in women with a BMI of 30 or more when compared with those who had a BMI below 25<sup>1</sup>. Establishing a proper diet and an adequate exercise routine can

not only help you achieve an optimal BMI but also assist your body in cellular and biological maintenance.

Weight can be primarily managed by diet, whereas exercise is important in keeping your body healthy. Increasing muscle mass through exercise can increase your basal metabolic rate, leading to more calories burned passively. Combining diet and exercise is the best way to obtain a manageable weight, but people are often unable to exercise due to a number of reasons, back pain being a common culprit<sup>2</sup>. No matter what situation you are in, you are able to control your diet. This can be done by educating yourself about nutrition and reducing portion sizes.

Exercise is crucial in helping maintain proper stability and posture. The muscles that run along the spine and your abdomen help support the spine<sup>3</sup>. Keeping these areas strengthened will assist the body in combating the effects of gravity. Finding a proper exercise program to follow will help in preventative care. Maintaining proper posture will become easier with exercise and being conscious of how you sit, stand, and walk will allow you to make corrections when needed. Exercise is also important in helping maintain a healthy bone density, which is crucial in reducing the risk of fractures as well as reducing the rate of degradation of your bones.

Drug and alcohol use can be detrimental to your health in more ways than one. When it comes to the health of your spine, excessive alcohol and nicotine use have both been shown to cause a decrease in bone density<sup>4-5</sup>. Nicotine has also been shown to hinder the body's healing ability, which is especially important when considering the need for spinal surgery<sup>6</sup>. The use of bone recombinant morphogenetic protein (rhBMP) during a spinal fusion procedure has been shown to reduce the negative effect of nicotine during the healing process, but making an effort to reduce alcohol consumption and drug use is a smart choice for the future of your overall health<sup>7</sup>.

desks have proven to not only reduce low back and neck pain but to improve the mood of the user as well<sup>9-10</sup>. The reduction of back pain allows for a focused mind, leading to a more positive and productive day! Although the benefits of sit-to-stand desks are numerous, using them incorrectly can lead to an opposite effect. Make sure you maintain correct posture, as hunching over your desk is going to induce back pain. It is also important to transition positions when needed. Remember, standing up, sitting less, and moving more is a great concept to live (and work) by! The first step in making changes to your health is recognizing what needs to be changed.

### Passive Wellness

Passive wellness includes the parts of your life that require minimal effort or environmental change for the betterment of your health. This would include what position you sleep in, what you sleep on, what you sit in, etc.

You will spend an average of one third of your life sleeping. For something that takes up so much of your life, doing it properly can have a big impact. Finding a suitable mattress combined with an optimal sleeping position can reduce the muscular tension in your back. When finding the best sleeping position, it is important to understand that you want to maintain the natural curve of your spine. With the proper mattress, lying on your back will be sufficient. When sleeping on your stomach, your head is turned to one side, creating an unnatural position for the neck that often leads to neck tension and pain. It is also advised to avoid curling your wrists or putting pressure on your extremities. If you suffer from sleep apnea, sleeping on your side may be the best solution<sup>8</sup>, so placing a pillow between your knees may offer more comfort in this position. For those with spinal stenosis, sleeping in the fetal position with your knees closer to your chest may relieve some of the symptoms.

If you find yourself sitting throughout most of the day, using a chair with lumbar support will reduce the onset of low back pain. Another healthy alternative for sitting at work is converting your workspace into a sit-to-stand desk. Sit-to-stand

**SPENDING TIME ON ENHANCING YOUR ACTIVE AND PASSIVE WELLNESS WILL ALLOW YOU TO REAP THE BENEFITS OF A HEALTHIER FUTURE, INCLUDING A HEALTHIER SPINE!**

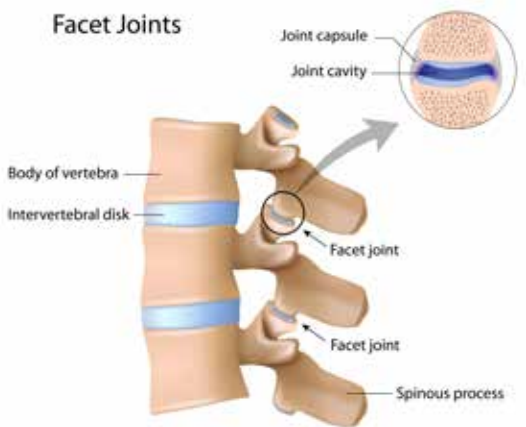


Figure 1: Basic Anatomy of the Spine

## The Physician's Perspective

*We each have our own responsibility to maintain our overall health. While we do not have control over everything in our lives, we can make conscious choices to eat well, to exercise, and to take part in activities which not only invigorate us physically but even socially. We can modify our environment in a way that can support our choices for an active and healthy lifestyle.*

*Brandon gives a great review of two categories of wellness. Creating habits, traditions, or ways of life that include activities and eating well is very important in maintaining our health. It also helps us engage with members of our family or community for not only the joy that it brings but also for the support that a community can give us. This support can help avoid the temptation of becoming sedentary and not taking an active stance in maintaining a healthy lifestyle.*

*Additionally, passively creating an environment that promotes health and wellness can be an invigorating and positive change in your day to day routine! Start by getting rid of the not-so-healthy snacks in the kitchen, challenge yourself to park farther away from work in order to get those extra steps, or remember to set an alarm to remind yourself to stand up every thirty minutes. While these are small steps, adding motion to your day will have a huge impact and will work wonders on your lifestyle!*

*Becoming and staying actively involved in our own health is not only important, but it can be a lot of fun as well! Brandon gives us a lot of ideas so that we can incorporate a healthy lifestyle into our days, so have fun putting them to practice!*

**- Michael W. Hasz, M.D., M.B.A., F.A.C.S.**



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3'9"  
3'6"

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## SPINAL RESEARCH FOUNDATION'S SPINAL HERO

*Larry Grine, P.T., M.S.P.T., A.T.C., C.S.C.S.*

**Practice:**  
*Virginia Therapy & Fitness Center*

### **Why did you choose your specialization?**

Looking back on my professional journey, I realize my specialization kind of chose me. I originally had plans to be an engineer and was pursuing a physics degree at Millersville University, near Lancaster, PA. I played soccer at Millersville and played competitively for many years. As a result, I had several injuries that required physical therapy. Having spent a decent amount of time in the athletic training room, I came to really enjoy the interactions with the athletic trainers and the depth of knowledge they used to rehabilitate all the different athletes.

While I still enjoyed learning about physics, I began focusing my attention on athletic training, specifically looking at how forces and biomechanics of the human body interact and how those interactions pertain to injuries. So, my journey to be an engineer transitioned to becoming an athletic trainer.

After graduating from Millersville with a physics degree, I pursued athletic training and became a Certified Athletic Trainer (ATC). I worked in various positions and environments over the course of four years including a physical therapy clinic and serving as a high school athletic trainer, Head Trainer for the Delaware Wizards professional soccer team, Head Trainer for the Delaware Olympic Development Soccer Program, and Assistant Trainer for the US Men's World Cup Soccer Team. In addition to athletic training, I received the Certified Strength & Conditioning Certification (CSCS).

Working as an athletic trainer was a great job, but I always had my sights set on becoming a physical therapist (PT). After working as an ATC for

four years, I attended the University of Miami (FL) Physical Therapy Program. While completing my Masters at the University of Miami, I worked with the nationally ranked University of Miami Football Team.

After graduating from University of Miami, I moved to Northern Virginia to work as a physical therapist and was exposed to higher level manual therapy treatment techniques. This exposure to manual therapy sparked my interest and I continued to pursue a certification by the North American Institute of Orthopedic Manual Therapy. Ever since becoming a PT, I have strived to be as eclectic as possible to blend my skills and experience as an athlete, athletic trainer, and physical therapist to maximize my proficiency with my patient treatments. Having found my professional home at Virginia Therapy & Fitness Center, I'm actually able to do so.

### **Congratulations to VTFC on being recognized as a Top Expert in Sports Medicine! What differences can a patient expect between VTFC and other physical therapy programs?**

There are many differences that separate VTFC from other clinics ranging from the expertise of our staff, our one-on-one treatment model, and our commitment to be the best physical therapy clinic. The first and foremost is the level of our PTs. Our PTs are the best in the area in understanding human anatomy, human biomechanics, hands-on manual skill delivery, and being able to build a strong and positive rapport with our clients. In addition to our staff having a great knowledge base, they are also very experienced. We have very low turnover in our clinic and have a number of PTs

who have worked at our facility for 5-10+ years! We invest a significant amount of education into our staff. Not only are our staff pursuing educational opportunities to learn, many of our staff are leading instructors with local university graduate programs in physical therapy and teach around the country with continuing education companies.

Of our 14 PTs, we have six athletic trainers who have significant knowledge of sports medicine and athletic injury management and rehabilitation. Many of our PTs have experience working with very high-level athletes, including high school recruits and college/professional athletes. As a result of our staff having excellent outcomes with high-level athletes, we were in the conversation as Top Experts in Sports Medicine for the Greater Washington DC area.

**Better Results...Fewer Visits.** Our exceptional staff also has the time to work with patients one-on-one for one hour. We also promote utilizing the same PT the patient was evaluated by for their first appointment. Our model promotes better results in fewer visits based on the proficiency of our PT's skills, the time we have to spend with our patients to address their biomechanical dysfunctions, and the consistency in being treated by the same PT each time you come to physical therapy. In fact our clinic was included in an outcome measure which compared VTFC treatments, based on injury location, for the number of visits and amount of recovery. The outcome measures showed that VTFC patients recovered with 20-30% fewer visits than the national averages!

### **You've moved to a bigger and better location. What are the most exciting changes and upgrades VTFC has to offer now?**

That's right – and we are very eager for people to come in and experience our new offerings! First off, our new location is amazing. The space is not only nicer, but it is larger and much more functional in the way we are able to progress our clients. We now have adequate room for progressions from the PT treatment tables to a designated exercise area and then onward to our wellness and workout areas. We offer a full continuum of services at VTFC which include both physical therapy and wellness offerings. Our programs include physical therapy, personal training, group exercise classes, massage

therapy, nutritional counseling, osteoporosis management programs, and aquatic therapy.

One exciting upgrade is our on-site Hydroworx aquatic treadmill. We are now able to offer and utilize aquatic therapy with all the patients who would benefit from this specialty therapy. The aquatic treadmill allows our patients to increase their mobility after an injury or surgical treatment. It is excellent for patients who have injuries or post-surgical rehabilitation for the lower extremities, spine, and upper extremities. The aquatic treadmill allows us to progress our patients faster by decreasing the forces on their bodies so that they can move properly. Reinforcing correct movement strategies helps the body heal faster and better.

### **What is the #1 advice you give to your patients to maintain a positive Health & Wellness regiment?**

Sitting is the new smoking! My best advice for patients to maintain a positive health and wellness regiment is to do something active every day. Get out and move your body every day. No matter how much time you can dedicate – a few minutes or a few hours. The more days in a row you do something, the easier it will become a habit. Research shows walking for at least 30 minutes a day is the best preventative medicine you can do for your body and long-term health. If you have time, I would recommend watching the video "23 ½ Hours: What's the Single Best Thing We Can Do for Our Health" by 24-Hour Fitness. You can find it on YouTube.

### **What is the most interesting/exciting work in your field of medicine at the moment?**

I think the most exciting aspect of medicine is regenerative therapies using Platelet Rich Plasma (PRP) and stem cell therapies to help jump start the healing process in areas of the body where patients have not had great success with physical therapy but are not quite yet surgical candidates. Physical therapy is an important component of conservative management of injuries and we will be a large part of the solution for patients who need specific rehabilitation when they use PRP or stem cell therapies.

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**Daniela Fagel, Patient Care Supervisor**  
Virginia Therapy & Fitness Center



## BENEFITS OF YOGA

### Benefits of Yoga

Many of us struggle to balance work and personal responsibilities, parenthood being no exception. It can become difficult to find a healthy balance to manage it all. We live in a busy world where we are constantly being pulled in different directions by work, family, friends, and personal expectations. The American Institute of Stress conducted a study in 2014 that shows the number one cause of stress in the U.S. is job pressure. The same study shows that 77% of people regularly experience physical symptoms caused by stress and 73% experience psychological symptoms related to stress<sup>1</sup>. Whether it comes from boss expectations or work overload, our jobs can cause more negative tension than we realize. Although this stress can be inevitable, how we respond to it can have a significant impact on our total health.

Yoga has been used as a stress management tool in the workplace to achieve tranquility of the mind.

**EMPLOYEES WHO PRACTICE YOGA ARE SHOWN TO HAVE AN INCREASE IN PRODUCTIVITY, REACT MORE CALMLY IN DEMANDING SITUATIONS, AND HAVE A MORE POSITIVE MINDSET<sup>2</sup>.**

Yoga derives from a Sanskrit word meaning “Union and Concentration of the Mind”. By connecting our minds to our body, we tend to become more aware of how we can cultivate inner peace and mindfulness. Yoga uses a combination of deep breathing, physical postures, and meditation. With practice, you will have more energy and will feel more confident and empowered while also developing a sense of mindfulness and tranquility.

### Deep Breathing

Yoga focuses on diaphragmatic breathing during physical postures and meditation. Diaphragmatic breathing is also known as deep belly breathing, primarily using your abdomen instead of your chest to take deep breaths. This specific type of breathing has been proven to create a relaxation response in the body and is associated with reduced sympathetic nervous system activity. This response is the opposite of fight or flight and is usually seen when someone is in deep sleep or after receiving a massage. Diaphragmatic breathing has been shown to lower breathing and heart rate, decrease blood pressure, lower cortisol levels, and increase blood flow to the organs<sup>3</sup>. By increasing the blood flow, it allows for fresh oxygen to circulate more throughout the body, providing more physical

and mental energy that can be channeled into workplace productivity. Deep breathing can be practiced anywhere (work, school, sitting in traffic, etc.)

### How to Practice Deep Breathing

1. Sit or lay in a comfortable position
2. Place one hand on your stomach just above the navel and place your other hand on your chest
3. Take a deep breath in through your nose while allowing your stomach to rise up slowly, pushing your hand up
4. Hold your inhale for 2-3 seconds
5. Breathe out through your nose slowly, allowing your stomach to slowly drop down to its original position

### Asanas

Along with deep breathing, yoga includes a variety of physical poses, also called Asanas. Psychological research suggests that bodily postures and gestures affect psychological states and attitudes<sup>4</sup>. A 2017 study has shown that postures have an effect on human confidence and psychological state of mind. Participants in the study who sat upright with a lifted chest vs. sitting in a slumped position exhibited more confidence, positive moods, and positive self-views. Those who practiced open and expansive yoga postures were shown to have positive mental effects after two minutes of performing the pose. Simply taking 10-15 minutes of practicing yoga poses can help increase confidence, productivity levels, alertness, and self-discipline.



Figure 1: Warrior Pose (Image provided by WasuYoga)

### Meditation

Meditation has been defined as the practice of training your mind to cultivate inner peace. The meditation practice includes deep breathing and concentration of the mind. By focusing on what you are experiencing without judgment, you begin to develop a sense of mindfulness. According to a brain imaging study by researchers at Massachusetts General Hospital in Boston and the University of Massachusetts Medical School in Worcester, "Mindfulness meditation alters regions of the brain associated with memory, awareness of self, and compassion."<sup>5</sup> Yoga integrates meditation into the practice by incorporating moments of focused breathing explained above. Meditation is a simple practice that can be implemented daily to reap its benefits. Consider stepping away from your busy desk or tight deadline for a minute to practice meditation, renewing your sense of concentration.



Figure 2: Star Pose (Image provided by Blissful Yogini; Tania Jo Ingrahm, [blissfulyogini.com](http://blissfulyogini.com))

### How to Begin a Meditation Practice

1. Find a quiet spot where there are minimal distractions
2. Make sure to be sitting or lying down in a comfortable position
3. Set a timer for two minutes
4. Rest your hands wherever you feel comfortable (by your side, on your stomach, etc.)

5. Become the observer of your breath by allowing your breath to flow naturally
6. Notice your breath as you take a deep inhale and exhale through the nose
7. When you find yourself getting distracted with your thoughts, bring your awareness back to your breath

## Conclusion

Through various studies, we have learned that yoga has both physical and psychological benefits for the practitioner. A 2016 study conducted by Yoga Journal and Yoga Alliance has shown that 86% of those who practice yoga have a strong sense of mental clarity compared to 77% of non-practitioners<sup>6</sup>. You don't have to feel defeated after a long work day. Using yoga as a tool to manage the stress of obligations and tight agendas may create the champion mindset you need to meet your goals.

## My Yoga Heroine

*Frantically sitting on the edge of my chair, I couldn't stop thinking of all the things that weren't going to get done on this particular work-day. It could have been the stress of my job and possibly the growing number of positions I was trying to recruit for or more likely my growing belly that seemed to stretch by the minute. In addition to all of the above, I struggled to handle all of the emotional and physical thoughts that came with becoming a working mom.*

*As I was failing to focus on the email, one of my co-workers, Daniela, bounced into my office. I figured she had stepped in to say hello, but instead I watch her slender little figure get down on all fours on the floor next to my desk and strike a pose.*

*I'll be honest - in that moment I did wonder what she put in her coffee this morning and then I remembered that Daniela was taking classes to get her yoga teaching certificate. She then proceeded to tell me how she spent the entire weekend learning about pregnancy yoga and the unique kind of pain pregnant woman experience and that we have to take an equally unique approach in managing it. I watched her for a moment as she explained the stretches she was demonstrating and the release it was supposed to provide. I kept wondering if I were to get down on the floor, am I really going to be able to get back up? This could be embarrassing, but I told myself "What the heck, I'll give it a try!" After assuming the position, Daniela instructed me how to move and I felt an unbelievable release from my fingertips all the way down to my swelling ankles. Just as quickly as Daniela had bounced into my office, she grabbed her coffee and bounced out!*

*I sat back down at my desk with a renewed sense of body and somehow with a sharper focus as well. The next morning as I was waking up, already feeling larger than the day before, aching from being in one position too long and dreading my physical state of being, a little bell went off in my head. I assumed the position Daniela had taught me the day before and began stretching. I did these yoga poses and stretches every morning and felt better and better – right up until the day before I delivered!*

*What's struck me most about doing yoga is that it has a lasting power that some of my other workouts just don't seem to have. If I had done yoga the night before, I actually seemed more quiet-minded and able to channel my thoughts the next day. I would love if my aerobics classes or gym workouts did the same thing, but they just don't connect my body and mind the way yoga does.*

*This is what I think has continued to draw me to yoga throughout my professional life. I want the sharpness at my job and the ability to drown out the noise so I can produce high quality work. I am lucky enough to have this opportunity to tap into the amazing benefits of yoga at work, as it is now part of a regiment of classes taught by none other than my bouncy yogi co-worker, Daniela! I hope others see the benefits of channeling your body and mind in which yoga can provide.*

Tina Shinya,  
Human Resource Manager



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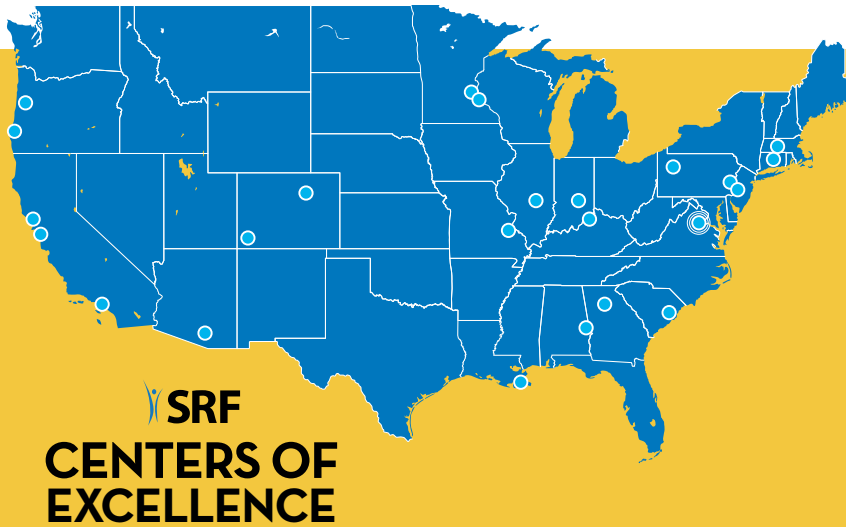
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