



Robinson Physical Therapy & Health Center News

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WE CARE FOR YOU!!!

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AQUA
THERAPY
SPORTS
PERFORMANCE

Robinson Physical Therapy & Health Center, Inc.

5635 Steubenville Pike,
 Route 60
 McKees Rocks, PA 15136

Phone: 412-787-8616
 Fax: 412-787-8618
 Email: staff@robinsonpt.com

Offseason Basketball Training

By Wim Rogers, PT, DPT, LAT, ATC

Some of you may know that in addition to practicing as a physical therapist and an athletic trainer, I am also an Assistant Girl's Basketball coach with Bishop Canevin High School. We recently finished a long season after completing an undefeated Section 3 title, winning the WPIAL 3A Championship, winning the PIAA West Championship, and going on to the PIAA 3A State Title Game, suffering a close loss to Neumann-Goretti High School out of Philadelphia.

We will soon be planning another off-season training program. Originally, I implemented an off-season ACL (anterior cruciate ligament) injury prevention program. As a result of consistency in ACL injury prevention training, it was found that athletic performance improved. I have advanced the program to include footwork training, power training, and basketball specific strengthening. The results speak for themselves. The team continues to be one of the best teams in the WPIAL.

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At the age of 14, about the age of our players entering high school, girls have a 5 times higher ACL injury rate than boys the same age. Overall, the rate increases to 8 times higher risk as they continue through high school. There are several factors that contribute to the high rate of injury in girls. Anatomy, hormones, and laxity of ligaments are several factors that cannot be changed. Slower reflex time, weaker hamstrings, and jumping/landing techniques are several factors that can be changed.

Education in proper landing and jumping, and changing direction have been most beneficial. It is emphasized to use proper hip mobility and knee positioning with all activities. Over 70% of all ACL non-contact injuries occur due to poor knee position when planting and changing direction and landing. It is important to keep your knees over your feet when landing and bend the knees and hips to absorb the landing forces. The position of the knees should not bend forward beyond the toes on that foot. Using plyometric boxes to emphasize landing properly are implemented into the program. As we progress, we move from landing, use the eccentric motion of the quadriceps to improve jumping ability.

When evaluating the landing and jumping ability of the girls, an evaluation of the foot posture is also very beneficial. It is found that many of the girls demonstrate foot pronation posture. This position leads to the foot collapsing during landing and knee moving inward. The inward movement of the knee increases stress on the ACL which can lead to sprain and tearing of the ACL.

I have also found that proper use of kettlebells in our training program has had a significant impact on developing LE strength and control. Kettlebells, by the very nature of their shape, challenge the body position and balance when used properly during training activities. Explosive activities, such as the "swing" exercise, using the kettlebells can be very beneficial in improving functional jumping ability and strength.

Footwork training requires consistent attention to lower extremity position during change of direction activities. Implementing ladder drills into the off-season program has benefitted our players in lateral movements that are very important in the game of basketball. The ladder drills are continued throughout the season to reinforce lateral movements and proper techniques.

All activities are preceded by a dynamic stretching program. I believe that the game of basketball involves very dynamic movements. When stretching during warm-ups, the dynamic stretching most mimics the requirements of basketball competition.



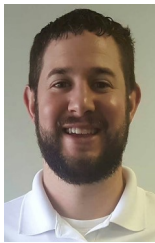
Chris Marrone, MPT, ATC
 Director/
 Partner
 Editor

Questions?
 Comments?
 Please feel free to reach me at any time via email, fax, or telephone. I hope that you enjoy this issue of Robinson Physical Therapy & Health Center News!!!

Offseason Basketball Training (cont.)

To continue to be the best, we must avoid injury. An off-season conditioning/strengthening program, that includes ACL injury prevention, has been found to be invaluable to the Bishop Canevin High School Girl's Basketball Team. Congratulations WPIAL 3A Champions and PIAA 3A State Finalist. As with all activities of the off-season, and in-season programs, proper lower extremity, hip and knee position are of the utmost importance.

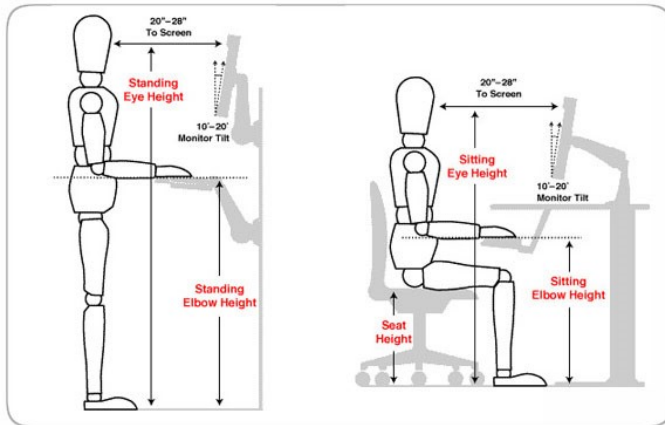
Ergonomics in the Workplace



Eric Cullen,
PTA

Recently among my patients, I have noticed some of their injuries are stemming from working at a desk all day and when further assessing, they all had poor posture. In this article, I am going to give you some facts on proper office ergonomics and posture, along with ways to prevent the most popular of the injuries stemming from poor posture and incorrect ergonomics in the workplace. You may be asking, what is ergonomics? Ergonomics is the study of people's efficiency in their working environment.

Five of the most popular injuries that occur in the workplace and from working at a computer all day, are injuries to the wrist, elbow, shoulder, hand, and lumbar spine or low back. Excessive computer use and poor posture can cause pain, numbness, and itching in all of these key areas.



In a study done by Ehsanollah Habibi and Shiva Soury from the Department of Occupational Health, prevalence of work-related musculoskeletal disorders is high among computer users. In the study they used three methods to determine their results including training, sport, and the installation of software. Training consists of education on proper body mechanics, posture, and desk or workplace modifications needed to prevent injury. Sport included exercises done and ways to move throughout the day to help improve muscle strength and avoid bad postures in the most common areas that lead to injury. And software, used to collect the data and analyze it.

Based on the results found in the study, 53.3% of participants work 4–8 hours and 15.6% working more than 8 hours on a computer daily. Pain occurrence in low back and wrist in the previous 3 months and previous week was similar, which

means the pain was chronic and is considered as an occupational risk factor. It has been shown that 39%-58% of participants associated their job with pain in neck and LBP, respectively, and there was 15.2%-24% absenteeism from work due to low back pain and neck pain, respectively. It was also found that 22.2%-28.3% of physician office visits were due to low back and neck pain.

The three most common regions of musculoskeletal symptoms among computer users were the shoulder 73%, neck 71%, and upper back 60% of the areas. The origin has many factors, such as physical strength, posture, and mental health such as depression or stress. Some things that lead to pain and symptoms were; mouse use, being seated for long periods of time, adoption of improper or uncomfortable postures, and chair height.

Prolonged sitting in a chair results in muscle weakness and pressure on the spine. Along with stress and depression can cause muscles to tense and a person to begin to substitute for the muscles affected. The diagram below demonstrates the proper postures, computer height, chair height, and proper placement of your hands and wrist while working on your computers.

Some things to consider while working at your desk throughout the day; are you in pain, are your muscles tensing up, are you beginning to feel fatigued, and is your posture suffering because of it. If you are having any of these symptoms what can you do to prevent injury? Doing very easy exercises and moving throughout the day when you begin to feel pain, muscle tightness, or fatigue can help prevent injuries. Some simple exercises used are pushups on your desk if sturdy enough, shoulder blade squeezes, shrugs, chair squats, triceps desk dips, calf raises at your chair, wall slides or squats sliding down the wall, marching with your core tight, and kicks off the edge of your chair. These exercises will help you to stay active and not give your muscles time to tense up and cause pain.

Ergonomics in the Workplace (cont.)

In conclusion, after researching posture and proper ergonomics in the workplace, I myself need to make some changes at my desk and really begin to pay attention to posture and continue moving throughout my day. I hope this article has enlightened you on the importance of good posture and will help you to prevent pain and injury in the future. If you have any questions please feel free to come in and ask one of our staff members at Robinson Physical Therapy. We are always glad to help and educate you on injury prevention.

Habibi, Ehsanollah, and Shiva Soury. "The Effect of Three Ergonomics Interventions on Body Posture and Musculoskeletal Disorders among Staff of Isfahan Province Gas Company." *Journal of Education and Health Promotion* 4.65 (2015): 1-12. 6 Aug. 2015. Web. 27 Mar. 2017.

Window of Opportunity



Michael Smith,
BSEP

I have read multiple articles on the subject, sat through countless hours of seminars and lectures on the subject. I have even written about the subject of nutrition before but with the influx of student athletes that the clinic has been seeing lately I thought it necessary to broach the subject once again, especially pertaining to the window for post workout nutrition. When talking about the "window of opportunity" for post workout nutrition we are talking about a certain amount of time in which you are able to replenish the calories burned and restore essential proteins and amino acids used for building muscle and boosting recovery. If you don't hit this "window of opportunity" you're not gaining the full potential from your work out. That window is pertaining to the time immediately following exercise when your body is extra responsive to nutrition and has been ready for receiving and quickly absorbing nutrients needed to rebuild and repair. Research indicates that the window of opportunity is 20 to 40 minutes following exercise and can last up to 1 hour.

While there are multiple reasons why post workout refueling is important let's take a look at two. First, refueling replaces energy and nutrients needed to maintain performance levels during upcoming workouts or sporting events. If you don't replace what you've just burned there isn't enough fuel available for your body to use the next time you work out or perform your sports/activity. Second reason for adequate post workout refueling is it provides the body with the building blocks required to repair and build body tissue after your workout, resulting in lean muscle building.

While everyone can benefit from some sort of post workout nutrition it has been proven that the window of opportunity is most important for athletes to train at vigorous levels for at least an hour or more. Those who exercise at a low or moderate rate of intensity or exercise less than an hour may not benefit from immediate post exercise refueling but need to look to replenish lost water stores and stay hydrated. There has been an unbelievable amount of research on the subject of what to eat for post work out. Most results show that pairing carbohydrates with protein give you the best results. The carbohydrates help replace energy and speed up the protein building process in the muscle, the protein is used to repair and rebuild tissue throughout the body.

You can eat carbohydrates and proteins together in multiple ways. As always when it comes to nutrition whole foods are always the best choice; but, there are some supplements that can help do the job and are convenient. So here are some personal suggestions of a various post workout refueling meals, as always you can find what works for you.

- Low fat chocolate milk
- Greek yogurt with some nuts
- Protein bar that contains carbs and low sugar
- Real fruit smoothie with peanut butter
- Meat and cheese on a sandwich or with some crackers
- Cottage cheese with fruit

Hopefully this sheds some light not only on the importance of the post workout nutrition, but also the "window" in which you need to consume that nutrition. Hopefully you can use some of the meal ideas as a starting point to get the most out of your workouts. As always feel free to contact us at Robinson Physical Therapy with any questions.

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Update

We are pleased to announce the addition of Dana Bates to our team. She has taken on the role of front office staff here at Robinson PT. Some of you may have seen or spoken with her already. If you have not met her yet, please take a moment to welcome her when you do!

The next update involves another staff change but one of less joy. Sadly, we must announce that as of the end of April one of our long time employees, Michael Smith, will be leaving us as he has the opportunity to begin the next chapter of his life in a joint business venture. This new position will give him the opportunity to be a little closer to home and his family. Many of you have come to know Michael well in his 11 years with us. Some of you have praised him for his hard work ethic and personable qualities. Many of you have also cursed him after a hard work out!!! But all of you will agree that Michael is one of the best parts of us here at Robinson PT. He will be greatly missed but he will always be part of our family. So please take a moment to say goodbye to Michael and wish him luck in his future endeavors!

Lastly, a note/reminder on patient insurance benefits. Please be aware that we verify insurance benefits out of courtesy. We are not obligated to do so, but we do this in order to help make our patients' experience an easier and better one. Most times what we verify with your insurance company is accurate to the best of our knowledge. However sometimes there are discrepancies for various reasons. This is why we urge every one of our patients to verify their benefits independently in conjunction with us doing it for them. That way all information is accurate. Ultimately it is the patient's responsibility to understand the insurance benefits provided to them through their employer. Unfortunately, most people do not truly understand their benefits until they are forced to use them. I stress to each and every one of you to learn what your benefits are so that it eliminates any confusion at time of use.