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FPTS

FAMILY
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★★★★★ ATTENTION ALL READERS!!! ★★★★★

- **Have you or a loved one suffered a concussion?**
- **Are you active or participate in a competitive sport?**
- **Do you want to defy statistics and avoid the increased risk of injury associated with concussion?**

If you answered YES to 2 out of 3 questions above, then you are a perfect candidate for an assessment to help identify movement problems that have the potential to increase your risk of injury or prevent you from achieving your optimal success and performance.

Read Lauren's article this month, [Concussions And Their Effect On Future Injuries](#), to get the scientific evidence correlating increased **risk of injury post concussion**, how you can assess your increased risk, and why it is so important to do so.

Our sports medicine team of experts, Lauren Fournier, PT, DPT, and James Goodwin, PTS, CSCS, combine concussion treatment and functional screening to help **minimize your risk of injury and identify the best exercises to return you to safe sports and maximize your performance.**

CALL TODAY! SCHEDULE YOUR SCREENINGS! AVOID THE INCREASED RISK OF INJURY FOLLOWING CONCUSSIONS!

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From The Desk of Our Director

[Cathy J Leer, PT, MBA](#)

It's interesting how many different reactions and responses I have been getting when I utter the phrase "CBD", or suggest that someone try CBD for a particular challenge or symptom that they are experiencing. Some are curious, others are horrified or shocked, and still others look at me with sheer delight! I'm not sure if that is because of the association (though incorrect) with marijuana, or because someone is finally offering a natural solution rather than a pharmaceutical. Regardless, or should I say because of, the wide range of reactions and responses, I feel that I should take time to provide some useful information on the subject matter, which you will find in this newsletter.

Let's start by clearing up a misconception (which I believe is the source of the wide range of reactions I am getting). The term **cannabis** (or marijuana) is used when describing a *Cannabis Sativa* plant that is bred for high amounts of [tetrahydrocannabinol \(THC\)](#), the cannabinoid most known for its psychoactive properties. **Hemp**, on the other hand, is used to describe a *Cannabis Sativa* plant that contains only trace amounts of THC (less than 0.3% THC), which is where the "CBD" oils and supplements that are being used for a variety of medical conditions and symptoms come from. It is the hemp-based products that we will be talking about and recommending for a variety of conditions. Please note that CBD products are not intended to diagnose, treat, cure or prevent any disease. Please consult your physician before beginning any supplement program.



Featured Author of the Month



Meet Cathy Leer, owner and director of FPTS. Cathy is a 1980 graduate of Russell Sage College with a B.S. in Physical Therapy, and a 1984 graduate of Anna Maria College with a Masters in Business Administration. She has owned and operated Family Physical Therapy Services since its inception in 1991 during which time she has amassed a breadth of clinical experience concentrating on general orthopedic physical therapy for clients of all ages. Prior to starting FPTS her experience included private outpatient orthopedic clinics, hospital inpatient and outpatient care, nursing home, home health care, and pediatrics.

For the past several years, she has chosen to concentrate on general orthopedic physical therapy. She has attended numerous continuing education conferences on the treatment of vertigo and vestibular disorders, osteoporosis and geriatric spinal disorders; total joint replacements; benign positional vertigo and vestibular rehabilitation;

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patello-femoral disorders; nonsurgical orthopedic management for the spine, lower quadrant, pelvic girdle, shoulder, and upper quadrant; head, neck, and facial pain; treatment of headaches; extremity evaluation and mobilization; foot and ankle dysfunction; orthopedic and sports medicine; soft tissue manual therapy and myofascial release; muscle energy and counterstrain therapy; craniosacral therapy; state-of-the-art electrotherapy techniques including low-level laser therapy; musculoskeletal evaluation and treatment including vertebral and neural mobilization; recognition of how stress can affect musculoskeletal disorders and related conditions; and Pilates and core stabilization.

Her specialties include treatment to the entire spine inclusive of the cervical, thoracic and lumbar regions including lumbosacral and SI joint dysfunction. She is especially adept at treating arthritis and degenerative conditions as well as strains, headaches, and thoracic outlet syndrome, as well as pregnancy-related back pain.

Cathy is licensed to practice Physical Therapy in Massachusetts and New Hampshire. She is an active member of Allied Physical Therapy New Hampshire (APT NH), a group of independent physical therapist owned practices fighting to maintain ethical and high standards of practice in the state of NH. As CEO, Cathy runs the business operations, develops new programs and offerings, treats patients and continues to provide guidance and education to her staff and patients alike. She has built her company knowing that patients always come first, and she welcomes them to consult with her at any time. Her main function is to inspire the passion and commitment that sets the standards of care at FPTs and allows each of her therapists to utilize their gifts of healing for the benefit of all of their patients.



From The Desk of Our Director

Cathy J Leer, PT, MBA

CBD and Sleep



Lately I've been alerted to and asked about the effects of CBD on sleep in relation to disease processes such as Parkinson's, MS, CA, and Arthritis. Although these are vastly different diseases with vastly different symptoms, both in the disease itself, as well as for each individual patient, there is a very common link between them all: sleep disorders. In fact, **poor sleep is universally accepted as being linked with chronic illness...but what came first? Poor sleep as contributing to chronic illness or vice versa? And does it matter? Regardless of the answer, it IS imperative that you get quality sleep to restore and maintain good health.**

Sleep and sleep difficulty are one of the most common health problems today and affect millions worldwide. A subject that by itself could take up pages, it is not the subject of my post today. Rather, I will be commenting on the effects of CBD on

sleep, and what is being talked about in the medical and cannabis community.

A few basics to start. THC-tetrahydrocannabinol has psychotropic qualities. It's what gets you high. **CBD-cannabidiol, has no psychotropic qualities.** THC is a controlled substance (at concentrations >3%). **CBD is not a controlled substance.** THC generally sedates whereas CBD in moderate doses stimulates. Unfortunately, it's not that simple though, because each can have a **biphasic** effect, which means that they can be both stimulating or sedative depending on the dosage.

Another basic fact is that the **Endocannabinoid System (ECS)** naturally occurs in the human body. It is the "primary homeostatic regulator of human physiology" or in layman's terms, what **keeps the body balanced and functioning properly.** As such, it plays a major role in our sleep-wake cycles or circadian rhythms (internal biological processes related to sleep), as well as the processes that influence our nerves that create reactions and responses throughout the day. Cannabinoid receptors found in the central nervous system (CB1) and those in the immune cells, peripheral nervous system and metabolic tissues (CB2), **can help decrease anxiety, pain, inflammation and overall sleep quality and equilibrium when they are influenced properly by different cannabinoids.** The trick is to introduce the right combination of cannabinoids to do just that.

Although there are differing views, and admittedly not enough scientific and human studies, there are some promising and credible findings. In fact, one such study was done on MS and neuropathic pain patients using a drug called Sativex (approved in Canada for central neuropathic pain with MS) which contains ~ 1:1 ratio of THC and CBD. When combined at doses of ~2.5 mg of each substance, the quality of sleep was improved with less interruptions and increased sleep time. All without negative side effects common to other sleep aides like drowsiness, irritability, or cognitive issues. Because there was improvement in pain, spasms, nighttime urination and related complaints, the combined effect resulted in a better night's sleep.

Of course, this is not a drug approved in the US, and we are trying to avoid the use of prescription medications. By considering the basic fundamental of Sativex having both TCH and CBD in the formula, it would lead us to believe that a full spectrum oil (FSO) containing CBD, Phyto cannabinoids, flavonoids and terpenes along with up to .3% THC, would be the logical option in terms of type of CBD products for this population of people (i.e., those seeking to find a solution to sleep disorders and difficulties related to diseases with chronic pain or neuropathic components).

So, the bottom line in terms of my current research, is that **a full spectrum CBD oil may be more effective in promoting improved sleep, especially for those suffering from chronic pain or disease processes.**





From The Desk of Our Director

Cathy J Leer, PT, MBA

CBD: FAST FACTS AND BASIC INFORMATION

Not all CBD is created equal, which is why we went to great lengths to investigate the industry before making our decision, not only on what products we would carry, but from whom we should buy them. In doing so, you can now shop with confidence knowing that *we have thoroughly vetted the companies and individual products for quality, effectiveness and value.*

Being a medical establishment, it is vital that we stress the importance of not making medical claims about CBD and aptly identifying the products as *supplements for better health.* CBD has not been evaluated by the Food and Drug Administration and CBD products are not intended to diagnose, treat, cure or prevent any disease. Please consult your physician before beginning any supplement program.

KEY POINTS IN CHOOSING YOUR CBD

- **Buy from a reputable company that sells products made from USA grown hemp.**
- **Organically** grown, pesticide and chemical-free hemp is preferred, if not a must.
- **Make sure that the product you are buying comes with a Certificate of Analysis (CoA)** from a 3rd party testing facility, preferably for batch of product produced. The CoA provides a thorough analysis of what is present in each batch of products including phytocannabinoids, terpenes, THC and other naturally occurring compounds. It also identifies the presence of toxins, pesticides, metals and other chemicals that you do not want present in the product. The CoA provides proof of what is actually in the product that you are buying.
- **The hemp extract/CBD oil should be removed from the plants through a chemical-free extraction** process like CO2 so that you are not ingesting unwanted chemicals.
- **The individual products should have ingredients that are natural**, chemical and preservative-free in addition to avoiding artificial flavors, dyes, sweeteners or excessive sugar or high fructose corn syrup.

3 FORMS OF CBD

- **Isolate CBD** is 99% pure CBD (cannabidiol) and contains NO THC or other phytocannabinoids, terpenes (aromas), or flavonoids (flavors) that are found in broad or full spectrum CBD.
- **Broad Spectrum CBD (BSO)** contains NO THC, but contains other phytocannabinoids, terpenes, or flavonoids.
- **Full Spectrum CBD (FSO)** contains up to .3% THC in addition to a wide range of phytocannabinoids, terpenes, and flavonoids.

ENTOURAGE EFFECT

This occurs when the phytocannabinoids, terpenes, flavonoids, THC, and other naturally occurring compounds work together for a much more robust response of the ECS (Endocannabinoid System) *to help maintain your body's natural functions.* Literature suggests that FSOs provide the best entourage effect and are considered more beneficial than isolates or BSOs

DELIVERY METHOD

Smoking and Vaping - oils are vaporized and enter the body through the lungs with the fastest (within seconds) but shortest duration of effects (2-3 hrs.). ***DO NOT USE VAPE OILS MADE WITH PEG, PPG (polyethylene glycol or polypropylene glycol) or FORMALDYHYDE.**

Topicals - salves, balms, lotions or creams applied to and absorbed through the skin, but not absorbed into the bloodstream) for local effects. Generally considered fast acting (15-30 mins), it usually lasts up to 3 hrs.

Tinctures - oils or extracts of cannabinoids mixed with MCT (medium chain triglyceride) or olive oil (best carrier oils), taken under the tongue or added to foods, beverages, or topicals. They are quickly absorbed into the bloodstream, are generally fast acting (15 mins. to 1 hr.), but may not last as long as edibles(6-8 hrs.).

Edibles/capsules/solubles (ingestibles) - candy, drink mixes, tablets or capsules that are processed through the digestive system. These generally take longer to be effective (1-2 hrs.), the cannabinoids may not be totally absorbed into the system, but the effect may last longer (6-12 hrs.).

STRENGTH

Most labels identify the TOTAL amount of phytocannabinoids in the product and many list the per dose amount as well. For example, 500 mg CBD 1 oz (30ml) bottle has 30 16.67 mg doses of CBD. (Divide the total mg by ml and you get the per mg dose. $500/30=16.67$ mg per dose.)

RECOMMENDED DOSE

The consensus in the literature suggests that there is no standard recommended dose. Instead, it is recommended that you start with a low dose and work your way up slowly until you achieve the desired effect that you are looking for. There is a handy tool to use which can give you a starting point if you are interested. It can be found at: <https://www.cannainsider.com/reviews/cbd-oil-reviews/#dosage-calculator>. It recommends 10 mg CBD per day if you are new to CBD, have mild symptoms, and weigh 100 lbs. What you should know is that there is no recorded evidence of anyone ever having died of a CBD overdose, and there are little-to-no recorded side effects, but it's always a good philosophy to use the minimum dose for the maximum benefit, and always check with your doctor for any possible interactions with your prescription medications.

Thanks to the 2018 Farm Bill, hemp-derived CBD is federally allowed in every state. CBD products do not give you a high. CBD Isolates do not test positive for THC with drug testing.



Vestibular Disorders

By [Lauren Fournier, PT, DPT](#)

Concussions And Their Effect On Future Injuries

Concussions can have detrimental effects in many ways. There is the more obvious trauma to the brain tissue, the skull and the neck musculature from sustaining a blow to the head or whip-lash injury. The other, less thought of effects from the trauma can include effects on the person's cognition, memory, balance, and vision among many others. After the physical and emotional wounds heal, people often think they are in the clear, but research has shown that, **after experiencing a concussion, athletes are at a higher risk for lower extremity injuries severe enough to require missing game time.**

Here is what some of the research over the last 3 years has shown:

- The University of Wisconsin in 2016 showed concussed collegiate athletes were at a higher risk of lower extremity injury for at least **90 days after their concussion.**
- In a 2016 study, professional rugby players in Great Britain had a **60 percent higher risk of a leg injury** for the remainder of the season in which a concussion was suffered.
- In the Journal of Athletic Training, a three-year study of over 18,000 previously concussed high school athletes across 27 sports in 26 states found a **34% increase in lower extremity injuries.**
- In the Journal of Orthopaedic and Sports Physical Therapy, 11,522 active-duty soldiers were followed for two years after their concussion. They were closely matched for age, gender, rank and type of duty with 11,522 soldiers who had never suffered a concussion. **This revealed a 45% higher risk of leg injury during the first 15 months post-concussion and a 38% higher risk over the course of two years vs. those that had not suffered a concussion.**

The exact mechanism for this increased risk is unclear, but recent evidence has suggested that neuromuscular function, specifically lower extremity muscle stiffness, may play a role in the musculoskeletal injury risk. It's also been hypothesized that *small changes in subjects' dynamic balance* may be exacerbated in the highly dynamic sport atmosphere. These higher-level activities typically entail significant motor and cognitive demands, which are known areas adversely affected by concussions. Understanding the potential consequences of concussion will help develop the most effective post-concussion management strategies across the athletic and even non-athletic age spectrum, leading to safer return-to-activity protocols and reduce the risk of subsequent musculoskeletal injuries.

Traditional concussion management involves assessments of the patient's symptoms and static/dynamic balance along with a gradual return-to-activity protocol. This allows therapists to better understand the various deficits after concussion and to allow for a more complete and safe return to activity. Even still, dynamic (i.e., while moving) balance deficits during gait have been found to remain even after improvements of reported symptoms and improvements in their static (i.e., while station-

ary) balance have taken place. These findings are interesting, but **the clinical consequences of lingering dynamic balance deficits and altered gait mechanics are still unknown—they may be playing a role in the higher risk of musculoskeletal injury or not.**

Here at Family Physical Therapy some *patients need to transition from their original concussion program to a more "personal training" approach in order to return to vigorous activities, such as competitive sports.* Some of the assessment tools used fall under the category of **functional screening.** These are used to assess how well the patient moves and then identifies, as well as corrects, faulty movement patterns as needed for each patient.

One of these screens is the **Y Balance Test.** This is a comprehensive test of your ability to balance, coordinate and control movement with your lower and upper body. Whether you are a competitive athlete, stay-at-home parent or grandparent, single leg balance as well as shoulder strength are crucial not only for safety but for improved performance. Another screen we use is the **Motor Control Screen,** which was adapted from the Y Balance Test, allowing an efficient and effective screen of how you stabilize, balance and control your movement.

While we employ the most recent and comprehensive techniques to rehabilitate our patients, get them performing at their best, and remaining on the field, there is much research that still needs to be done to determine the mechanisms at work and the best ways to improve them. Rest assured, we will continue to stay up to date on these developments to further improve patients' outcomes and will share them as the field changes. Stay tuned!



Ross A. Lurgio Info Corner - GO LIONS!!

By [James Goodwin PTA, CSCS](#)

How is your young athlete preparing for pre-season?

By far the most common problem with young athletes trying to prepare for pre-season sports is trying to cram workouts in just before the start of the season. This almost always **results in unnecessary trauma to the body which in some instances causes injury before the season even begins and for most results in mid to end of the season injuries.** My recommendation would be



to start earlier in the off-season (8-12 weeks before the start of pre-season) and gradually increase intensity of workouts as pre-season nears. The week just before pre-season should actually be a relatively light week where the body can actively rest before the rigors of pre-season. Now that does not mean take the entire week completely off—just decrease the volume of workouts (i.e., decrease sets/reps and decrease duration of workouts while maintaining high intensity). This will better prepare the body for the season without taxing it too much. Remember, **you're goal is not to peak during pre-season but to reach maximal performance levels when it matters most – playoffs!**

If your young athlete is **serious about their sporting activities,** and wants to play and WIN, check out our [Athletic Performance Program](#) or call: **644.8334** - ask for James.



STAY IN THE GAME WITH JAMES!

By [James Goodwin, PTA, CSCS](#)

Is Your Child In Danger of Overuse Injuries?

More and more, young athletes are participating in competitive sports year-round. For this reason, the number of sports-related injuries, particularly overuse injuries, is steadily growing each year. We are seeing less sprained ankles, broken bones, etc and more injuries related to repetitive stress such as tendinitis of the knee or elbow. Another alarming fact is that emphasis has been put on increasing weekend tournaments and showcases for young athletes which puts large demands on a growing body with little time to rest and recover. So what do we do about this? *Proper rest (at least one rest day per week), sleep, nutrition, hydration are all important factors to consider.* However, by far the **most important factor to reducing the risk of overuse injuries is having your son or daughter participate in a program that focuses on injury prevention strategies including strength training, regeneration (soft tissue recovery), and maintaining proper flexibility.** Here at FPTS, we offer a group and individual programs for young athletes that help them recover quicker, feel better, and improve their performance.

References:

<https://metrifit.com/blog/how-to-prevent-overuse-injuries-in-youth-sports/>

If you are interested in learning more about how to recover better and “stay in the game,” then

GIVE US A CALL! — 603.644.8334

Stay in the game with James.



From The Desk of Our Clinical Staff Manager

By [Tom Fontana, MSPT](#)

Isometric Strength Training For Blood Pressure

Many patients who have been through our doors (particularly those who were post-surgical) have performed isometric exercises. Isometric exercises involve applying a resistance force without allowing any movement (good examples are pushing on a door frame after a rotator cuff repair or pushing your foot into a pillow after ankle surgery). Our primary aim is to strengthen the muscles around the joint.

However, over the years, a side benefit of isometric exercise has emerged. A meta-analysis (meaning study of studies) published in the July, 2019 edition of the Journal of Hypertension found a consistent result across 16 studies involving 492 participants: regular isometric exercise lowers your blood pressure (and is better at doing so than traditional endurance or strength training)! The average effect was to lower systolic blood pressure (the top number in blood pressure results) by 5.23 mmHg, lower diastolic blood pressure by 1.64 mmHg (the bottom number) and a 2.9 mmHg reduction in mean (average) blood pressure.

The catch is the isometrics are not performed how we usually prescribe for strength training (short 2-3” holds x 10). Instead, you have to perform four repetitions of handgrip squeezes at 30% of your maximum intensity for 2 minutes each, three times per week. There is some evidence that performing a wall squat and holding it for this length of time will also work.

It’s not the largest reduction in the world, but every little bit helps especially if you’re on the borderline and wish to avoid medications.



Injury Prevention & Sports Performance

[James Goodwin, PTA, CSCS](#)

James and the Giant Breach: Onward and Upward

It’s hard to believe but it’s been 5 months since surgery and I’m noticing comments from patients and even staff that I’m walking normally! It is these subtle things that make all the difference in the rehab process. I have been performing single leg calf raises on our total gym machine which allows you to work with less than your body weight. Also, I have been going to the gym regularly performing squats, riding the bike and doing my PT exercises of course 😊. My current goal is to do a single leg calf raise with my full body weight and stay tuned next month to see if I hit the mark!



Pre & Postnatal Info Corner

By [Effie Koustas, MPT](#)

Pregnancy Rolling Along? I Hope So!

Do you suffer from low back pain while pregnant? The best way to get in and out of bed is to log roll. This is also crucial postpartum and advised after a C-section as well. Proper body mechanics in pregnancy and/or post-partum can significantly decrease low back pain.

Check out this [video](#) or follow these directions!

The goal of **log rolling** is to keep your spine straight and avoid twisting your back. Begin by sitting upright on the edge of a bed. Slowly lower yourself onto one side and bring your feet onto the bed at the same time with your knees bent. Then, roll onto your back, keeping your knees bent and hips aligned with your shoulders. Reverse these movements to return to a sitting upright position. **Tip:** Make sure to keep your knees, hips, and shoulders aligned and do not reach backward with your arm as you roll.

