CasePerformance

May Newsletter
Part II

CasePerformance

“For Sport, For Life”

www.caseperformance.com

In Part II of this month's newsletter....

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I. Leading Off...

Hello,

Glad to see that you're tuning into Part II of our newsletter! I hope you enjoyed Part I which featured an interview with Jay Bell, LMT, who shared with us various massage techniques as well as practical advice on how YOU can improve your tissue quality. Following the interview we got to our community member performance discussion, *Mushrooms - Putting the Fun in Fungus, by* Alex Leaf. In it, Alex discussed the interesting world of the mushroom and how its magic extends beyond its psychedelic properties.

In Part II of our newsletter, we take a quick peek at some article news here at CasePerformance. We then shift gears and towards the SuppVersity Corner Report before closing with our CP Performance Discussion, *Pesky Tennis Elbow BE GONE!.* I'm confident you'll enjoy it!

Respectfully,

Sean Casey

II. Donations for CasePerformance Are Welcomed

As you've probably noticed while surfing around the CasePerformance website, we **DO NOT** litter our pages with advertisements or have "Members Only" sections that require a paid subscription.

Why do we do this?

My goal is to reach as many individuals as possible. If an individual truly wishes to improve their health and performance, I want them to succeed. This holds true regardless if they are a multi-millionaire or those pinching pennies.

The Downside & What You Can Do To Help

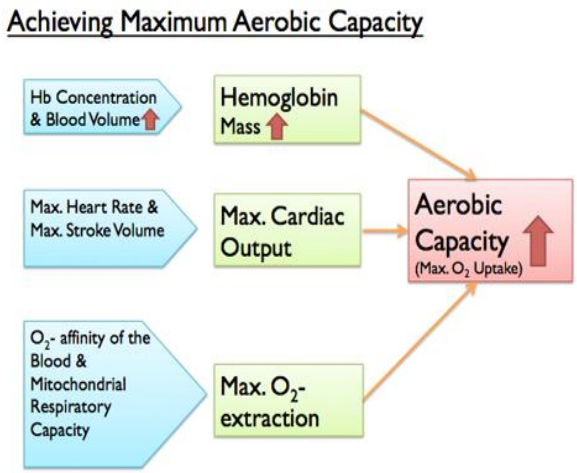
The cost of running a website in conjunction with paying for full access to the various sport science and nutrition research journals I use is extremely expensive. Also, all of the authors at CasePerformance put considerable time into writing the articles for this site. If you enjoy the free information provided on this site, we humbly ask you to show your support by making a small donation. Thanks for your support!

CLICK HERE to make a donation. Please know that **ANY AMOUNT** is greatly appreciated!

III. Article News at CasePerformance

One new article was added to CasePerformance during the month of March…

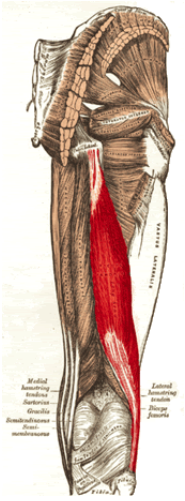
Russia's Noble Ergogenic Weapon - Xenon



In February 2014 it was learned that Russian athletes had been using a relatively unknown ergogenic aid, the noble gas xenon, to boost athletic performance since early 2000's. The main benefit attributed to xenon is its ability to enhance EPO production, thus enhancing one's aerobic capacity (VO2max). Besides boosting EPO levels, research has shown xenon to induce euphoria as well as analgesia. Additionally, as reported in the press, based off Russian documents, it may enhance testosterone production. Got your attention yet? OK, read the article!

Top Read Article in May here at CasePerformance…

Rehabilitating Chronic Hamstring Strains



After being knocked off the pedestal during April, this article, originally written in 2009, once again rose to the top during May...

Hamstring strains are one of the most frustrating injuries for athletes to suffer. It seems that once a hamstring is injured, it's likely to be injured again within a couple of years. In a recent study, it was shown that even when pain-free, previously strained hamstrings lack strength/power during eccentric muscular contractions. In addition there range of motion is limited during hip flexion. Amongst other things, In order to combat this problem, I recommend including more Single Leg Romanian Dead Lifts (SLRDL) into your exercise program.

IV. SuppVersity Corner Report!

SuppVersity is one of my favorite sites. It's run by my friend Adel Moussa. One of the things we do on the CasePerformance **FACEBOOK** page is highlight one of their excellent posts each week. In case you missed any of them…

Week of April 28th - May 4th

We had a tie this week...

Vitamin A, D, E & K - How Much and What Type of Fat Do You Need to Absorb These Fat Soluble Vitamins?

CP Quick Thoughts

Have you ever had someone tell you, "You should be taking your Vitamin D supplement with a fat source; otherwise it won't be absorbed." Is there any truth to this statement? Furthermore, do other fat soluble vitamins (Vitamin A,E & K) need a hefty dose of fat if they are to have any chance of being absorbed by your body. These questions are examined in this article by Adel Moussa.

One thing that's a bit interesting, as you'll read, is that PUFA (poly-unsaturated fatty acids) appear to decrease Vitamin D absorption.

Choline Deficiency, Its Consequences and How You Fix It | Part 2 of the "Common Nutrient Deficiencies, Their Health Consequences and How You Can Fix Them" Series

CP Quick Thoughts

Although it doesn't get too much publicity, choline is a nutrient that deserves a strong hat tip from anyone concerned about their health. It assists with homocysteine levels at bay (Elevated levels are associated with heart disease amongst many other things), nerve impulses and may even assist fat loss! Luckily one can reap the benefits of choline simply by eating a few eggs (or I should say their yolks) every day. Don't like egg yolks do the taste (and NOT because you've been bamboozled into believing they're "bad")? No big deal, Adel shares a few other choline packed food combos.

Week of May 5-11th

Anserine + Carnosine Supplementation: A Capped Fountain of Cognitive Youth? Plus: Beta-Alanine + Creatine Could Be A Similarly Brainy Supplement Stack for Young & Old

CP Quick Thoughts

This article was chosen for 1 simple reason... Who DOESN'T want a supplement that increases physical and potentially mental performance?! Although, I should say, from a performance benefit, I hope you've realized that although ergogenic, beta- alanine is NOT "*the next creatine*" as originally promoted by supplement companies. Furthermore, unless you're completing an activity in which lactic acid is an issue, don't expect to receive much if any benefit (ergogenically speaking).

Week of May 12-18th -13th

BCFA - Gut Health, Immunity, Cancer | Branched-Chain Fatty Acids! What Are They? What Are They Good For? And From Which Foods & Beverages in Your Diet Can You Get Them?

CP Quick Thoughts

There are topics that Adel posts about that I know a fair amount about prior to actually reading them. Then there are the posts that I'm familiar with, just not on an in-depth level. Finally, there are posts that I'm absolutely clueless about prior to reading. Branch Chain Fatty Acids definitely fell into the latter of these three categories.... which is why it's worth highlighting - I'm confident I'm not the only one who scratched their head upon seeing this for the BCFA for the first time.

Week of May 19-25th

We had a caffeine induced tie this week...

1. Caffeine Works - Study Leaves No Doubt About It! Approx. 400mg of Caffeine Get You Going, Even After 32h Without Sleep - So Why Doesn't It Work for You Anymore?

CP Quick Thoughts

There's nothing like a good stim to rejuvenate you after 32 hours of sleep deprivation. Although, I'm crossing my fingers you won't have to experience any sleep deprivations of this length!

For what it's worth, as a non habitual caffeine user, if I'm looking for ergogenic benefits, 400 mg is the best dose for me. Greater than that and I'm jittery beyond control. I use higher doses of caffeine pretty sparingly though as it tends to leave my nervous system feeling completely shot

Week of May 19-25th (cont)

2. Caffeine-Resistance? Genetic & Environmental Factors Determine If You Feel or Don't Feel the "Boost" | Plus: 11 Non-Genetic Factors That In- & Decrease Caffeine's Effect

CP Quick Thoughts

It was quite interesting to see that green tea extract, a common ingredient in purported energy boosting supplements, actually accelerates caffeine breakdown breaks down.

Week of May 26th - June 1st

Water or Diet Soda - What's the Better Diet Beverage? Study Confirms Fake Sweetness Promotes Weight & Waist Loss, Decreases Hunger, Blood Pressure, Cholesterol & Trigs

CP Quick Thoughts

This is one of the latest studies looking at the "does diet soda make you fat" debate. Personally, I've never had much of a problem if a person I've been working with wanted to have a can of diet soda during the day; especially if that is what helps keep them sane.

VI. CP Performance Discussion

Pesky Tennis Elbow BE GONE!

By Sean Casey

Ugh - Tennis Elbow

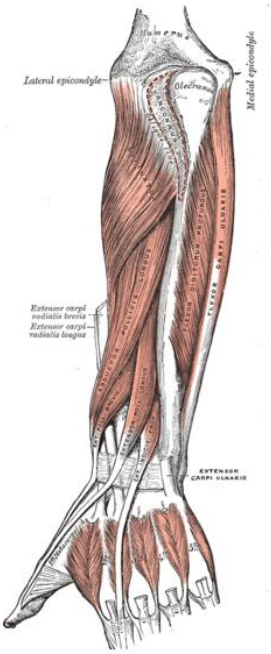
As I look out my window, I see birds hopping, green grass growing and swarms of gnats ready to attack unsuspecting couples as they go out for a nice evening stroll in the neighborhood. Ah yes, the nice weather of spring/summer has finally arrived in my neck of the woods. For many, that means grabbing the tennis racket or golf clubs and heading outside to get a few swings in …. At least that's the game plan assuming they don't have tennis elbow a.k.a. lateral epicondylitis, a condition generally brought on by A) Overuse of the wrist extensor muscles (Remember - many of the muscles that extend your wrist originate via a tendon from the bony bump, the lateral epicondyle, which protrudes from the lateral side of your elbow) or B) Muscle tightness along the Superficial Back or Lateral Lines.

Now if you currently find yourself hobbled by a throbbing elbow that screams "*BLOODY MURDER!*" every time you pick something up with a pronated grip (i.e. - palm pointing

down), you're in luck as the focus of this CP Performance Discussion is on how to alleviate this issue and get back to what you do best - crushing your opponents on the court/course and getting back to normal every day work! We'll do this by first highlighting the traditional approach to remedy the issue before expanding our conversation, incorporating the interconnectivity of the human body.

(**Note** - when I say "traditional", I'm referring to it simply as "original/common approach", not implying that it's old, outdated and worthless. I emphasize this as with the growth of alternative/"new age" practitioners, the word "traditional" often get smeared by those looking to promote their own practice.)

Game Plan to Regaining Your Health - Traditional Approach!



First, back off anything that is irritating it. I know you're probably thinking "well DUH", but let's be honest, if you're anything like me, you likely have a tendency to keep your foot on the gas vs. relaxing off it. From a training standpoint, consider doing exercises with a neutral grip or a supinated grip (i.e. - palm facing up) as opposed to a pronated (palm down grip). Ditto with respect to lifting objects around the house or at work. This is important as when you grab and lift something with a pronated grip, you're activating the wrist extensor muscles, irritating the lateral epicondyle region.

Next, stretch the wrist extensor muscles (so basically with your arm straight out in front of you, flex your wrist and point your fingers towards the ground to provide a stretch in those muscles. You can use your opposite hand to provide tension. If you compare your left and right wrist, usually the arm that has tennis elbow will have reduced range of motion when you flex the wrist. So a good "eye" test is to work on flexibility till these are equal on both sides. Do 3-5 sets of this stretch for 25 sec a 2-3 times each day (build into this as your tolerance allows.)

Table 1. Joint range of motion norms established by the American Academy of Orthopedic Surgeons[2] and the American Medical Association[3] for healthy adults.

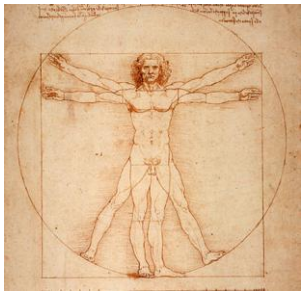
Joint	Motion	AAOS Joint Range of Motion Norms[2]	AMA Joint Range of Motion Norms[3]
Wrist	Flexion	80º	60º
	Extension	70º	60º
	Radial Deviation	20º	20º
	Ulnar Deviation	30º	30º

What is considered "normal" wrist range of motion? As shown in Table 1, depending on if you're looking at the American Medical Associations or the American Academy of Orthopedic Surgeon's recommendations, it's between 60-70º. While stretching that muscle group, you might as well make sure you're not excessively tight in any of the other range of motions.

The third recommendation I have is more of a "piggy back" to the point I just made about stretching. To help increase flexibility of the wrist extensors, simply massaging those muscles can help reduce the tension present in them, thus allowing them to glide more freely and exert less pull on the lateral epicondyle.

Finally, perform eccentric strengthening exercises for the wrist extensor group. Grab a light dumbbell, weight plate, soup can, etc. in your palm and perform a reverse wrist curl. When performing this exercise, fully extend your wrist and then slowly lower it through the full range of motion getting a light stretch in the bottom (build up to 3x15 reps; 4-5 seconds on the lowering phase of the lift). Eccentric training is effective for many types of tendonopathies. It's believed to work its magic via removal of pathological neovascularization (formation of new blood vessels) observed in some connective tissue overuse injuries.[6]

That Didn't Help - Now What?

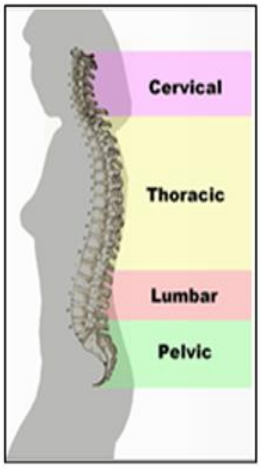


Did the traditional approach fail to provide any long lasting improvement? If so, fear not – The active lifestyle of yore is not forever lost in the abyss known as *"Ugh -That Blows*". It's quite possible that the underlying cause of your pain does not stem from your wrist extensors alone. As Jay Bell mentioned in Part I of the 2014 May Newsletter:

"Pain is not where the problem is, but rather where it shows up."

This underscores the importance that your initial evaluation is thorough and looks BEYOND just the elbow and structures directly connected to it. Grabbing another of Jay's comments:

> *....Worse yet, when someone goes to any type of manual therapist, the general protocol is to "work on the part that hurts." Doing this usually results in one of two things:*
>
> *A) Making a sore area even sorer*
>
> *B) Providing very temporary relief.*
>
> *A lot of assessment has to happen to find out exactly why "X" is taking the brunt of things. As I mentioned earlier, pain is where the problem ends up, not necessarily where the problem actually is (on the body). This is an important distinction that one needs to realize - I can't stress it enough.*



So where should one also be looking? When discussing this topic with Jay, he informed me that he starts with the back, specifically the thoracic region where most people have limited extension and rotation in this region. Are you scratching your head as to how/why the thoracic region of your back may be causing your elbow pain?

Easy - Interconnectivity YO! According to the textbook *Anatomy Trains, written* by Thomas Myers, direct myofacial lines connect these two regions. Therefore, Jay starts with the thoracic region, works the Lateral Line which, as you guessed runs along the lateral aspects of your body before making his way to the Superficial Back Arm Line which originates on the skull and extends out to the hands. (These direct lines of connectivity are shown in Table 2). If tension is present anywhere along this track, the whole line gets thrown off. Thus, by improving the quality of this tissue through direct manual as well as mobility/flexibility work, disabling tennis elbow pain may dissipate.

Table 2. The Lateral and Superficial Back Line as described by Thomas Myers.[8]

Lines of Connectivity	Bony Stations	Myofascial Tracks
Superficial Back Arm Line	Occipital ridge, Thoracic spinous processes	
	Spine of Scapula, acromion, lateral third of clavicle	Trapezius
	Deltoid tubercle of humerus	Deltoid
	Lateral epicondyle of humerous	Lateral intermuscular septum
	Dorsal surface of fingers	Extensor Group
Lateral Line	Occipital Ridge/Mastoid Process	Splenius capitis/sternocleidomastoid (SCM)
	1st and 2nd Ribs	External and internal intercostals
	Ribs	Lateral abdominal obliques
	Iliac Crest, ASIS, PSIS	Gluteus Maximus Tensor fasciae latea (TFL) Iliotibial tract/abductor muscles
	Lateral Tibial Condyle	Anterior ligament of head of fibula
	Fibular Head	
	1st and 5th Metatarsals (of foot)	Peroneal muscles, lateral crural compartment

Wrapping it Up

Tennis elbow doesn't have to derail your summer plans. As discussed in this article, by examining the tissue directly attached to the elbow (ie – wrist extensors) as well as that connected to it via myofascial lines, one can reduce the tension felt by the lateral epicondyle. Furthermore, by incorporating eccentric focused reverse wrist curls one can remove the problematic neovascularization that may have built up in the problematic tendons through chronic wear and tear. End result – A pain free you and a great summer of physical activity!

References:

1.KOS.ElbowCude.Accessed June 1st, 2014 from: http://commons.wikimedia.org/wiki/Category:Elbow#mediaviewer/File:Elbow_coude.JPG

2. File:Gray419.png. This media file is in the public domain in the United States. This applies to U.S. works where the copyright has expired, often because its first publication occurred prior to January 1, 1923. Accessed June 3, 2014 from: http://commons.wikimedia.org/wiki/File:Gray419.png

3. American Academy of Orthopaedic Surgeons: Joint Motion: Method of measuring and recording. American Academy of Orthopaedic Surgeons, Chicago, 1965. (Cited in Norkin CC, White DJ, eds. Measurement of Joint Motion: A Guide to Goniometry. 4th ed. Philadelphia, PA: FA Davis Company. 2009. 425-429)

4. Cocchiarella L and Andersson GBJ, eds. American Medical Associations: Guides to the Evaluation of Permanent Impairment, ed. 5 AMA, Chicago, 2001. (Cited in Norkin CC, White DJ, eds. Measurement of Joint Motion: A Guide to Goniometry. 4th ed. Philadelphia, PA: FA Davis Company. 2009. 425-429)

5. The Vitruvian Man (c. 1485) Accademia, Venice by Leonardo da Vinci. This work is in the public domain in the United States because it was published (or registered with the U.S. Copyright Office) before January 1, 1923.Image accessed April 21, 2013 from: http://commons.wikimedia.org/wiki/File:Uomo_Vitruviano.jpg

6. Ohberg L, Alfredson H. Effects on neovascularisation behind the good results with eccentric training in chronic mid-portion Achilles tendinosis? Knee Surg Sports Traumatol Arthrosc. 2004 Sep;12(5):465-70. Epub 2004 Apr 2.

7. vsion. Spinal column curvature. Accessed February 8, 2014 from: http://en.wikipedia.org/wiki/File:Spinal_column_curvature.png.

8. Thomas W. Myers Anatomy Trains: Myofascial Meridians for Manual and Movement Therapists. Churchill Livingstone; 2nd edition (December 17, 2008).

VI. **BONUS** - Normal Joint Range of Motion

Non contact injuries… If there is anything that physical preparation coaches should strive for when training their athletes, it is the elimination muscle strains and connective tissue sprains. This can partially be accomplished by maintaining optimal joint range of motion. What is "optimal" you ask? Well, it varies considerably. However, in Table 1 below, I share the "norms" established by the American Academy of Orthopedic Surgeons and the American Medical Association.

Table 1. Joint range of motion norms established by the American Academy of Orthopedic Surgeons[1] and the American Medical Association for healthy adults. [1,2]

Joint	Motion	AAOS Joint Range of Motion Norms[1]	AMA Joint Range of Motion Norms[2]
Cervical Spine	Flexion	45º	50º
	Extension	45º	60º
	Lateral Flexion	45º	45º
	Rotation	60º	80º
Shoulder	Flexion	180º	180º
	Extension	60º	50º
	Abduction	180º	180º
	Medial Rotation (Internal Rotation)	70º	90º
	Lateral Rotation (External Rotation)	90º	90º
Elbow	Flexion	150º	140º
	Extension	---	---
Wrist	Flexion	80º	60º
	Extension	70º	60º
	Radial Deviation	20º	20º
	Ulnar Deviation	30º	30º
Thoracic & Lumbar Spine	Flexion	80º	60º
	Extension	25º	25º
	Lateral Flexion	35º	25º
	Rotation	45º	30º

Hip	Flexion	120º	100º
	Extension	20º	30º
	Abduction	---	40º
	Adduction	---	20º
	Medial Rotation (internal rotation)	45º	50º
	Lateral Rotation (external rotation)	45º	50º
Knee	Flexion	135º	150º
	Extension	10º	---
Ankle	Dorsiflexion	20º	20º
	Plantar Flexion	50º	40º
	Inversion	35º	30º
	Eversion	15º	20º

References

1. American Academy of Orthopaedic Surgeons: Joint Motion: Method of measuring and recording. American Academy of Orthopaedic Surgeons, Chicago, 1965. (Cited in Norkin CC, White DJ, eds. Measurement of Joint Motion: A Guide to Goniometry. 4th ed. Philadelphia, PA: FA Davis Company. 2009. 425-429)

2. Cocchiarella L and Andersson GBJ, eds. American Medical Associations: Guides to the Evaluation of Permanent Impairment, ed. 5 AMA, Chicago, 2001. (Cited in Norkin CC, White DJ, eds. Measurement of Joint Motion: A Guide to Goniometry. 4th ed. Philadelphia, PA: FA Davis Company. 2009. 425-429)

That wraps up this CasePerformance newsletter. Thanks for being a part of the team. We look forward to hearing your feedback on anything and everything so drop us a note on **FACEBOOK.**

And as always... Train smart, train hard and leave the excuses to someone else!

Sincerely,

The CasePerformance Team