

All Very Well and Good

The Absolute Balance Newsletter



Message from Derek

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Hello and welcome to this issue of the "All Very Well and Good" newsletter.

Absolute Balance continues to strive to provide you with the best opportunity to realise your health & fitness goals.

With the winter days upon us now it's very important to maintain an excellent fitness base. Perhaps in summer you concentrated on cardiovascular fitness... perhaps this winter try a strength base or functional base training to provide a head start for the summer months in late 2014.

So be in front of the ball...Remember it takes at least 6 weeks for permanent physiological changes to occur so starting today will give you the head start you are after. As we say at Absolute Balance, "It's your life, so live it!" Commence your exercise programme today!

Absolute Balance Consultant is excited to introduce a new partner into the business – Ryan O'Connor. Ryan will be an active partner and specialists in Injury Prevention and Exercise Rehabilitation. No doubt you will be seeing him assisting you with commencement date 28th April 2014.

Absolute Balance is very excited about our future. We are more closely defining our niche areas each year further developing our business in the following areas:

1. Exercise & Injury Rehabilitation.
2. Corporate Health Services.
3. Health and Exercise Management.
4. Injury Prevention.

For further information on these services please take a moment to check out our website. Also stay tuned for latest editions and updates over the next coming months:

www.absolutebalance.com.au

On behalf of my team and I thank you for choosing Absolute Balance. I am excited about your health and fitness goals and ambitions, so come and share them with us. Our main aim is to educate and to serve you in achieving your health and fitness goals.

Kind regards,

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Protein & Supplementation for Female Athletes

It is a common misconception that protein supplementation is only helpful for the bodybuilding population, namely the male population, but it is just as important for female athletes of all types to consider protein supplementation to aid in maintaining and promoting the growth of lean muscle.

Let's start with the basics. For the general SEDENTARY population, the recommended dietary intake (RDI) for protein is between 0.8-1.07g/kg/day. According to a recent article published by Dr Luis Palacio (2013), The recommend protein intakes for female endurance based athletes is between 1.2-1.4 g/kg/d and 1.6-1.8 g/kg/d for females involved in resistance/strength based training.

For a lot of females, this can be a hard figure to reach. This is where the question of protein supplementation comes into play, is it right for me? Protein supplementation should come into play if you are not reaching your RDI for protein with a normal diet, or if you are participating in resistances based training for more then 1-1.5 hours a day.



Female strength athletes should include high-quality proteins and fats in their diet as they provide essential amino acids (Volek, 2006), and what is not able to be included through diet, should be supplemented in with the use of a low carbohydrate protein shake, consumed after exercise.

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References:

Luis E Palacio, 2013, Nutrition for the Female Athlete, Medscape, <http://reference.medscape.com/article/108994-overview#aw2aab6b3>

Volek JS, Forsythe CE, Kraemer WJ. Nutritional aspects of women strength athletes. Br J Sports Med. Sep 2006;40(9):742-8.



It's your life
SO LIVE IT!

HIIT: High Intensity Interval Training

High Intensity Interval Training describes physical exercise that is by definition, brief, intermittent bursts of vigorous activity, interspersed by rest periods or low intensity exercise.

HIIT can serve as an **effective alternate** to traditional endurance training. It also creates similar or even superior changes in a range of physiological, performance and health effects in both healthy and diseased populations. However through recent research ESSA has found that for specifically improving fat distribution levels in the body, endurance training has been shown to still elicit the better results. (2)

Evidence has shown that this type of training stimulates physiological remodelling similar to moderate intensity continuous training ie Running, even though the duration of exercise and time commitment are both drastically lower. HIIT training has also been shown to be perceived as more enjoyable form of exercise.

Why Choose HIIT?:

- 1.) Time-efficient
- 2.) Burns more overall body fat
- 3.) Increases strength and size of the Heart muscle
- 4.) Minimal to no equipment needed
- 5.) Increases metabolism and after- burn effect
- 6.) Various physiological adaptations to exercise
- 7.) Challenging



Physiological Benefits of HIIT:

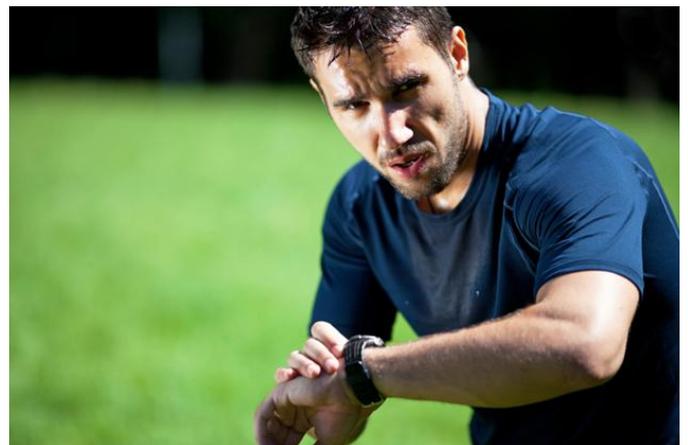
- 1.) Improves insulin sensitivity (body's ability to convert sugar)
- 2.) Improved oxidative capacity, anti-oxidant defence, glucose uptake, resistance to age related sarcopenia (muscle wastage) and anti-inflammatory pathways
- 3.) Increases energy utilisation in muscles
- 4.) Stimulates the release of good chemicals such as endorphins, oxytocin, serotonin, dopamine and growth hormone.

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Reference:

- 1.) Gibala, J. M., Little, P. J., MacDonald, J., M., Hawley, A. J. (2012). Physiological adaptations to low-volume, high-intensity interval training in health and disease. *The Journal Physiology*, (590)5, p. 1077-1084
- 2.) Cited: ESSA ACTIVATE March 2014: Keating, E, S., Johnson, A, N. (2014). H.I.I.T for Fat Loss: are we throwing the baby out with the bathwater?, *Discipline of Exercise and Sports Science*, University of Sydney, p. 6-10



Winter Vitamin-D Supplementation

Being stuck indoors all day SUCKS! In Australia we're blessed that we get long summers so we still have a chance to get out and see the sunlight before or after work. But with winter coming the days are getting shorter.

Vitamin-D is a very important supplement with strong links with calcium absorption in bones which helps to keep bones strong, especially as we age. Just like any other vitamin or mineral it can become deficient in the body, especially in winter or if you don't get a lot of sun exposure.

There is a strong link between Vitamin-D, muscular performance and physical functioning. Various studies have shown deficiency in Vitamin-D has led to impaired muscle action, muscle wastage and decreases in muscle strength. Studies have shown that Vitamin-D can help to improve physical performance, increased lower limb strength, power and decrease the occurrence of injury.

In winter, there is a greater emphasis put on the food we eat to get the right amount of Vitamin-D. Foods like oily fish, dairy products and plant extracts are very important.

Women	Men
19–30 yr 5.0 µg /day	19–30 yr 5.0 µg /day
31–50 yr 5.0 µg /day	31–50 yr 5.0 µg /day
51–70 yr 10.0 µg /day	51–70 yr 10.0 µg /day
>70 yr 15.0 µg /day	>70 yr 15.0 µg /day



Adequate Intake of Daily Vitamin-D for Men and Women 19-70+ years old

What this means, a 51 year old need to eat 100grams of *wild salmon* per day to have the **minimum amount** of Vitamin-D. This doesn't account for people who are Vitamin D deficient, pregnant or breast feeding. The upper limit of Vitamin-D is 80 µg /day so there is a large window to have more.

Vitamin-D is an important Vitamin to consume, especially in winter as well as receiving the beneficial effects that it can have on your exercise performance and enjoyment.

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References:

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- Wyon, M. A., Koutedakis, Y., Wolman, R., Nevill, A., & Allen, N. (2014). The influence of winter vitamin D supplementation on muscle function and injury occurrence in elite ballet dancers: A controlled study. *Journal of Science and Medicine in Sport* (17), 8-12



Recovery

Just like your training regime, your recovery needs a plan. Rest between workouts is crucial to any regime as this is where all the adaptations occur in your body as a result of the training you're doing.

Here are some ways to recover from a workout so you're ready to go every training session

Get some quality shut eye

Sleep is very important and most of us don't get enough of it, lack of adequate sleep can decrease the tolerance to training, alter mood and have an all round negative effect on your daily chores. Aim for 7-8 hours a night.

Get your nutrients

Re-fueling and hydration is very important to the recovery process, you'll need more fluid and healthy foods as your exercise routine becomes more intense. Dehydration and lack of quality food will disrupt your training regime like nothing else. For a rough idea eat a meal containing approximately 50g of carbohydrates and 30g of protein within 30mins of a workout as this will aid and speed up recovery process.

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Massage it out!

Deep tissue massage from a therapist is ideal for maintenance and speedy recovery from a physically draining regime. Things like self massage or the correct use of such things like foam rollers and trigger point release massage is also key to fast recovery and can be less time and cost demanding.

Self myofascial release (SMR) within 24 hours of an intense workout increases blood flow to areas that are under duress during a workout or the stresses and strains of everyday life. SMR helps remove scar tissue, adhesions in the muscle and restrictions in the fascia (a type of connective tissue)

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References:

Kawamoto, J-Erik. The 6 best ways to recover from your workout. April 2014, <http://www.mensfitness.com/training/the-6-best-ways-to-recover-from-your-workout/slide/5>



Common Exercise Myths

When it comes to exercise and weight loss everyone has different opinions and when asking others, everyone becomes an expert but how much of this information is actually true? Read on and we will debunk some of the most common exercise myths.

Number #1

Crunches are the best way to get rid of your belly fat

It is a common mistake for people to be doing hours of sit ups and crunches trying to lose their belly fat, however, this exercise does very little to burn belly fat. In reality it is impossible to 'spot reduce' which means, get rid of localised fat by exercising one part of the body over and over again. Fat is distributed in the body based on genetics, with specific areas storing more fat than others. The usage of fat for energy does not just come from the area being used but the area it is most readily available. To lose stomach fat, incorporate cardiovascular training into your routine and decrease your calories eaten throughout the day by making healthy food choices!

Number #2

If you're not working up a sweat you're not working hard enough

OR If you sweat more you'll lose more weight

Both these claims are untrue. Sweating is not in any way an indicator of exertion or fat loss. Sweating is the body's way of cooling itself down. Monitor your perceived exertion or heart rate to get an idea of how hard you are working throughout your exercise.



Number #3

Exercise will convert fat into muscle

Exercising can both decrease fat and build lean muscle, however there is no direct conversion of fat to muscle as they are two completely different tissues. Cardiovascular exercise will burn fat, and resistance training will build lean muscle so try combining the two for the best results!

Number #4

Lifting weights makes girls look like body builders

Having a body builder's physic takes a precise combination of diet, weight training and hormones. Females do not have enough Testosterone to build muscle to the degree males do and therefore will not 'get bulky' from lifting weights. In a study at Central Michigan University, researchers had women train one arm, doing just a few reps of a heavy weight and the other doing more reps with a lighter weight (both lifting an equivalent number of pounds). Surprise: The heavy lifters got stronger, but gained no more size than the arm lifting the lighter weights. Weight training is a great way for females to tone the body and increase metabolism, so get lifting ladies!

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Foam Rolling on Range of Motion

Fascial restrictions often occur in response to injury, disease, inactivity or inflammation, causing it to lose elasticity and become dehydrated. During dehydration and elasticity loss, fascia can bind around traumatized areas, forming fibrous adhesions, which can be painful and prevent normal muscle and joint mechanics. Foam rolling is able to treat this condition as it can stretch the tissue and generate friction between roller and the body. The friction then warms the fascia, allowing it to become more fluid like (known as a thixotropic property), breaking up the fibrous adhesions, regaining soft tissue extensibility.

DOMS

Delayed Onset Muscle Soreness (DOMS) can be characterised by muscle soreness, temporary muscle damage and a decrease in strength and range of motion, 24 to 72 hours after an intense workout. When muscle tissue and connective tissue are damaged, it triggers an inflammatory response, leading a loss of muscle cell homeostasis, largely due to increased intracellular calcium levels. This response, along with muscle damage and an increase in osmotic pressure do to swelling, all combine to sensitise pain receptors causing the sensation of DOMS. Foam rolling has been shown to reduce the sensation and effect of DOMS through clearance of swelling and creatine kinase levels, and increasing blood flow and neutrophil counts, promoting healing and recovery.

Foam rolling also allows for greater muscle activation throughout the DOMS phase, compared to those who don't foam roll. This may be due to the reduction of DOMS itself and the decrease in neural inhibition as a result of healthier connective tissue, allowing for greater feedback from mechanical and sensory receptors.



Direct Performance

Although we know static stretching before a work out can decrease force production and therefore performance, foam rolling has not been shown to cause the same effect. Foam rolling is able to improve joint ROM with no concomitant detrimental effects on force production. Even though we have found that foam rolling causes individual fibers to produce less force, it counteracts this by enabling more fibers to be recruited at one time, creating the effect of greater force output. This being said, the use of foam rollers has not been shown to significantly increase athletic performance in terms of power, strength or agility when conducted before a workout.

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Curran PF, Fiore RD, Crisco JJ. (2008). A comparison of the pressure exerted on soft tissue by 2 myofascial rollers. *J Sport Rehabil*, 17(4), 432–42.



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