



## PREFACE

This newsletter is a bi-monthly publication of J & S Health, Fitness and Sports Academy— a gym located in St. James, Barbados. The main purpose of this newsletter is to keep members of the gym informed about current health and fitness trends.

### Quote to remember:

Self-delusion is pulling in your stomach when you step on the scale.

Paul Sweeney

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## Protecting Your Body From Oxidative Damage

As you breathe your body reacts with oxygen. Such oxygen reactions can be useful as they help your cells to produce energy. However, oxygen reactions can also be harmful as, the reaction can result in the formation of free radicals which, in turn, cause damage to cells within the body. This type cellular damage is referred to as **Oxidative Damage or Oxidative Stress**. This article explains the phenomena of Oxidative Damage while it exams the various techniques of preventing/repairing the damage.

### The Problem: Free Radicals

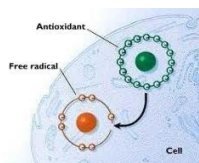
Free radicals are unstable oxygen molecules that are formed: (1) as a part of our normal metabolism involving oxygen in the body, (2) by environmental factors such as radiation (x-ray, ultra-violet, sunlight), cigarette smoke, environmental pollution and herbicides and pesticides. Free radicals attack healthy molecules in our body by 'stealing' an electron from a stable molecule resulting in the previously healthy molecule becoming a free radical itself. If this process is allowed to continue a chain reaction can occur which would ultimately result in the disruption of a living cell. Normally our body can handle free radicals, however, if free radical production becomes excessive, or is left unchecked over time such repeated damage can cause severe cell injury and become irreversible, ultimately contributing to the development of several health problems such as cancer, macular degeneration, the possibility of accelerated aging and heart disease.



Sunlight radiation



Environmental Pollution



Antioxidants neutralize free radical damage

### The Solution: Antioxidants

Antioxidants are naturally occurring chemicals in food that protect our cells from damage caused by free radicals. Antioxidants have the property to neutralize free radicals without becoming a free radical themselves. This is done by donating one of their own electrons to the free radical, ending the 'electron stealing' chain reaction. Thus, antioxidants prevent cellular damage and, ultimately, help to protect against the development of various diseases such as cancer & macular degeneration. During the exchange of electrons the antioxidant does not become a free radical, however it becomes inactive. Therefore we need to continuously supply our body with antioxidants.

### The Antioxidant Team

#### Vitamin C

This is the most abundant water-soluble antioxidant in the body. It helps return vitamin E to its active forms and subsequently works with vitamin E to block damaging chain reactions that appear to promote heart disease and cancer. Vitamin C is also a powerful scavenger of free radical formations caused by environmental air pollutants (e.g. cigarette smoke).

Best Sources: citrus (e.g. oranges, limes grapefruits), cabbage type vegetables (e.g. brussel sprouts, cauliflower, broccoli), tomatoes, papayas, mangoes,



Grapefruit



Brussel Sprouts

*Did You Know:* The National Academy of Sciences advises smokers to consume an additional 35 milligrams of vitamin C a day compared to non-smokers.

It is getting close to Christmas time and this generally means, cleaning the house, shopping for gifts, entertaining guests and in many cases not enough hours in the day, or energy available to get to the gym. So for all those extra busy people around this time of year, below is a short workout that will give you that workout burn you greatly desire. There is no equipment necessary, so you can complete this in the comfort of you own home, all you need is just a little effort and time.

**Instructions:** Complete the following exercises as a circuit completing 3 sets of the circuit. Try to minimize the rest taken between exercises within the circuit (if possible rest no more than 20 seconds between exercises). Rest 3 - 5 minutes between sets.

Exercise	Time (seconds)
Jumping Jacks	60
Push Ups	30
Isometric Squats	30
Squats	30
Power Squats	30
Calf Raises	60
Bench (Triceps) Dips	30
Alternating Lunges	60
Football Sprints	30
Lying Back Extension (Superman)	60
Bicycling	30
Full Crunches	30
Front Plank	30
Jumping Jacks	30

### TIPS CORNER

#### Weight loss tip: *Increase Your Water Intake*

Our bodies are over 70% water and subsequently it needs a large amount of water to properly maintain its daily functions including flushing our systems of harmful toxins from our body. When our body does not get enough water it actually holds onto water, which in turn leaves you feeling bloated and subsequently heavier.

### TIPS CORNER

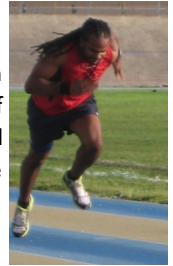
#### Muscle Building tip: *Consistency For Growth*

One of the most important aspects of being able to build muscle is being consistent in your efforts. On again, off again exercising will provide nothing more than disappointment. To truly get results you need to commit to your training regiment and maintain your workout consistency.

## 30 Second Intervals Are Best For HIT Training

A University of Nebraska study found that 30-second-long intervals were better for building endurance and aerobic capacity than intervals lasting 3 minutes. Short, intense interval training were always known to be incredibly effective to build high levels of fitness quickly. In fact, Canadian researchers found that 6 sessions of high-intensity interval training on a stationary bike increased muscle oxidative capacity by almost 50%, muscle glycogen by 20%, and cycle endurance capacity by 100%. The subjects made these amazing improvements exercising a mere 15 minutes per session over two weeks.

*(Journal Strength Conditioning Research, 25: 1279 - 1284, 2011)*



## Creatine Reduces Knee Arthritis Pain



Brazilian researchers found that creatine supplements plus 12 weeks of resistance exercise training reduced knee arthritis pain in middle-aged women better than exercise alone. Participants who included creatine monohydrate supplements in their diet showed improved physical function, increased leg muscle mass, and improved quality of life compared to those who did not. The creatine supplement regimen which was used during the study was 20 grams of creatine for 5 days, and then 5 grams per day for 12 weeks.

*(Medicine Science Sports Exercise, 43: 1638 - 1543, 2011)*

## Greater Strength With Faster Lifting Tempo

A study from Springfield College in Massachusetts found that training at a faster tempo (2 seconds down, 2 seconds up) increased performance in the bench press better than a slower tempo (4 seconds down, 2 seconds up). This study showed training at a faster tempo resulted in the greatest increases in IGF-1 (an important anabolic hormone), while training at a slower tempo reduced the capacity to lift heavier weight and subsequently resulted in reduced strength gains.

*(Journal Strength Conditioning Research, 25: 406 - 413, 2011)*

## Financial Incentives Help People Lose Weight



Leslie John and colleagues from Carnegie Mellon University found that when financial incentives were used to encourage persons in their weight loss program more favorable results were obtained. In the study one group of test subjects received no financial incentives (control group) while a second group of test subjects deposited their own money into an account, which was matched by the researchers based on weight loss. The persons in the financial incentive group lost an average of nearly 9 pounds in the 32 weeks the study was carried out, compared to slightly over 1 pound in the control group. Even more proof to the results of the study was that unfortunately many persons in the financial incentive group quickly regained the lost weight after the experiment was over.

*(Journal of General Internal Medicine, published online February 2011)*

## Whey Protein Boosts Muscle protein Synthesis

According to a literature review by researchers from Finland and the United States, whey protein stimulates muscle protein synthesis, even when you don't lift weights. However, they concluded that whey protein works best when combined with weight training as they discovered that (at least in younger athletes) consuming whey protein supplements after exercise promotes recovery and increases gains in strength and muscle mass.

*(Nutrition Metabolism, 7: 51 published online, 2010)*

# Protecting Your Body From Oxidative Damage Cont'd

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## Vitamin E

This is the most abundant fat-soluble antioxidant in the body, is one of the most efficient chain breaking antioxidants available and the primary defender against oxidation. Research suggest that vitamin E may protect specifically against heart disease since its presence in the fatty cell membranes that surround the heart thwart the free radicals that might otherwise damage the walls of blood vessels and contribute to health problems such as coronary heart disease.



Almonds

Best Sources: nuts and seeds (e.g. almonds, peanuts, sunflower seeds), vegetable oils (e.g. safflower oil, corn oil, canola oil, olive oil), margarine, shortenings



Vegetable Oils

*Did You Know: Vitamin E is widespread in the food supply, and deficiencies are extremely rare in healthy adults.*

## Vitamin A and Carotenoids

Carotenoids (e.g. beta-carotene, alpha-carotene, lycopene, lutein, zeaxanthin) are chemicals with nutritive properties that exist in the pigments found in plant foods. These pigments have a variety of effects in the body, including antioxidant activity and the enhancement of immune function. Beta-carotene functions as a Vitamin A precursor (it is converted to Vitamin A inside of the body). Within the body Vitamin A and other carotenoids (lutein and zeaxanthin) help prevent against oxidative damage to the central portion of the eye, therefore assisting with the prevention of age-related macular degeneration.



Carrots

Best Sources: deep orange fruits and vegetables (e.g. apricots, squash, carrots, pumpkins, cantaloupes) dark-green leafy vegetables (e.g. kale, broccoli, spinach)



Squash

*Did You Know: The colour of carotenoids range from pale yellow, to bring orange, green and deep red, and are directly linked to their structure.*

## Selenium

This is a trace mineral, not an actual antioxidant, however it works as an invaluable partner as part of an antioxidant enzyme system that defends the body from oxidation. This is due to the fact that Selenium is an essential component in two important antioxidant enzymes (glutathione peroxidase & thioredoxin) that are manufactured by your body that assist with your body's antioxidant defences through the eventual recycling of vitamin C and vitamin E. Selenium is also synergistic with vitamin E in its antioxidant properties towards free radicals, therefore it are more effective working together compared to individually.



Salmon

Best Sources: seafood (e.g. tuna, salmon), meats (beef, chicken), whole grains



Chicken

*Did You Know: Selenium detoxifies toxic metals (e.g. arsenic, mercury) present in the body.*

With the ever increasing prevalence of cancer and other diseases which can be linked to oxidative damage, one can see how important it is to have a balanced diet incorporating an abundance of fresh fruits and vegetables especially, those like oranges, carrots and spinach which can help correct oxidative damage. In this spirit, perhaps, it is time for a new maxim: "An orange a day will keep Oxidative Damage away".

# NEWS, NOTICES AND EVENTS

## 2011 HUNTSMAN WORLD SENIOR GAMES

- ◆ Congratulations to Jennifer-Swanston-Jones who won 6 gold medals (50m, 100m, 200m, 400m, Javelin, Long Jump) and 2 silver medals (Shot Putt, Standing Broad Jump) at the 2011 Huntsman World Senior Games in Utah, USA.

## 2011 CENTRAL AMERICAN & CARIBBEAN BODYBUILDING & FITNESS CHAMPIONSHIPS

- ◆ Congratulations to Ramona Morgan who placed 2nd in the 163 cm class at the 2011 CAC Amateur Bodybuilding & Fitness Championships in El Salvador.

## 2011 DARCY BECKLES BODY BUILDING INVITATIONAL CLASSIC & FIGURE CHAMPIONSHIPS

- ◆ Congratulations to Ramona Morgan and Karen Jones who placed 2nd and 3rd respectively in the figure competition at the Darcy Beckles Classic on October 29th.



Karen Jones (left) and Ramona Morgan (right) posing at the Darcy Beckles Invitational

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## EARLY GYM CLOSURE ON FRIDAY THROUGH THE END OF 2011

- ◆ Commencing Friday 25th November through the end of 2011 J&S Academy will close at 8 pm on Fridays.

## GYM CLASSES

- ◆ There will be no gym classes after Saturday, 10th December 2011.

\*All classes will resume on Monday, 9th January 2012. The fees of all active members registered under the 'Class Combo' package will be frozen from Sunday 11th December 2011 until Sunday 8th January 2012.

## HOLIDAY CLOSURE

- ◆ J&S Academy will be closed for a Holiday break from Thursday, 22th December 2011 through Monday, 2nd January 2012.

\*The fees of all active monthly members will be frozen during the period of closure and will be automatically restarted on Tuesday, 3rd January 2012.

## PAST NEWSLETTER EDITIONS

- ◆ Past editions of J&S Academy's Health & Fitness Newsletter can be downloaded from the gym's website ([www.jandsacademy.com](http://www.jandsacademy.com)).

# Thank You

Dear Members,

We hope you have enjoyed the J&S Academy's Health and Fitness Newsletter over the past year and that the information and articles provided have been insightful and informative. We wish to extend a special thank you to all models who made themselves available for the various pictures displayed within our Newsletter issues and, to all individuals who provided topic suggestions and ideas over the past year. Such assistance is greatly appreciated and we hope that your enthusiasm and willingness continues within the coming year. Without your help this Newsletter would not have been possible.

We take this opportunity to wish all of the J & S Family a *Merry Christmas* and a blessed and prosperous New Year.

Thank You

Jamil & Janielle Jones

## CONTACT US



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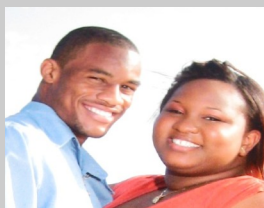
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## WANTED...

*Models for the next publication of the Health & Fitness Newsletter*

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### Let Us Know What You Thought Of This Issue

Read something that you disagreed with, that you did not understand or that was really helpful? Send your feedback to

[jamiljones@jandsacademy.com](mailto:jamiljones@jandsacademy.com)