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INSIDE THIS ISSUE

*Sports Nutrition*

**Creatine – Fact vs. Anecdotal**

I most certainly respect the views of parents looking out for the health and safety of their children. I've had countless conversations with parents regarding creatine and its effects pertaining to kidney function and overall relative safety. It seems that many parents have either spoken to their physician about it or heard rumors from other concerned parents. First and foremost, the available RCT (randomized controlled trial) research from the Journal of Exercise Physiology clearly indicates that creatine is safe. More specifically, even dosages of 18-20 grams a day for up to 140 days proved to have no negative health effects other than weight gain (which is why many are using creatine).

**What is Creatine?**

Creatine is synthesized endogenously from the amino acids arginine, glycine and methionine. Diet is the other source of creatine.

Creatine is stored in the muscle as phosphocreatine or as free creatine. Increased availability of creatine and phosphocreatine are critical to maintaining adenosine triphosphate levels (ATP, a primary source of cellular energy). During high intensity exercise creatine helps to maintain peak levels of performance and aids in the recovery from repetitive bouts of intense exercise.

In the body, the total creatine pool is approximately 120 grams for a 70 kg person. Of this 120 grams most is stored in the muscle while a small percentage is found in the brain, heart and testes. Exercise physiologists approximate that less than 2% of the total creatine pool is needed for daily requirements. So, a 70 kg person needs about 2 grams of creatine per day. Since foods like fish, red meat, and chicken contain creatine, obtaining 2 grams a day seems to be obtained in meat/fish/poultry eaters. However, repetitive high intensity exercise can increase the demands for phosphocreatine dramatically.

A recent review in the Journal of Exercise Physiology pooled data from many RCTs and

observed athletes requiring 5-10 times the normal daily requirement of creatine to maintain optimal performance. Of course there is a great deal of inter-individual difference, so dosing of creatine should be left to those that understand the biochemistry and are aware of the current exercise physiology data.

**Markers of Medical Status**

Various studies that investigated creatine



supplementation looked at liver and muscle enzymes and have found no effect or a moderate effect on creatine kinase levels (CK), aspartate amino transferase (AST) and lactate dehydro-

genase (LDH). Most research was from approximately 28 days to 56 days of supplementation. Most of the concerns that emanate about creatine use are unsubstantiated anecdotal reports and may be related to other factors. In well controlled clinical research creatine supplementation has been safe. Furthermore at the recommended dosages of 4-8 grams per day, no stress on the kidney or liver function has been observed. Keep in mind that the research is specific to athletes. There is other research on cardiovascular disease and the benefits of creatine but these are not covered in this article.

**Final message**

In summary, in dosages of 4-8 grams per day, for people participating in high intensity exercise creatine is safe. For meat eaters that don't exercise intensely (weight lifting, running, cycling, boxing, etc...) I'd suggest that you don't use creatine. Ergogenic (performance enhancing) supplementation is for athletes or for other warranted metabolic conditions.

*George Tardik B.S.c (hon), RHN, RNCP, (ND candidate) has been counseling in sports nutrition for 8 years. He's been a member of the World Natural Sports drug screening panel for 3 years and practices out of Nature's Source. Appointments can be made by calling 416 242 8500.*

**Why Whey?**

**Is Whey Protein Right for You?**

Walking into the sports nutrition section of a natural health store, one sees row upon row of whey protein powders. Does one need to be an athlete to be using whey proteins? And why whey?

Everyone needs protein for survival and optimum health. Most of our muscle is made from protein. Skin, hair, enzymes, hormones, and our immune system all need protein. A person with an average activity level may require 0.5 grams of protein daily per pound of lean body mass, while someone very physically active may require 0.8 to 1 g per day per pound of lean body mass. This means that while many people may benefit from a protein supplement, an athlete may have greater needs for whey protein supplementation.

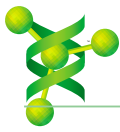
Whey is a high-quality protein, rich in branched-chain amino acids, carbohydrates, and minerals. Although whey is from dairy (it is an end product from cheese manufacturing), it contains low level of lactose. Many 'lactose intolerant' people can tolerate whey.

Whey is one of the fastest proteins to absorb, and has the highest biological value (BV) of all the proteins known. It contains all of the essential and non-essential amino acids, including being the richest source of branched chain amino acids of any protein known. It is easily used by the body to make and repair muscle.

There are two main types of whey proteins. **Whey protein concentrates** contain slightly more carbs, fats, and lactose than whey protein isolates, and take a little longer to absorb. Whey concentrates have all the therapeutic qualities attributed to whey and make a high quality protein shake. **Whey protein isolates** are more rapidly absorbed and are lower in carbs, lactose, and fats. The highest quality whey isolates are Cross-Flow Microfiltered (CFM) to extract the protein without denaturing the protein molecules. Look for a whey powder containing enzymes to help digest the protein.

**Therapeutic benefits** that have been attributed to whey protein include:

- Powerful immune modulator



- Anti-viral/bacterial/fungal action
- "Anti-cancer activity"
- Plays an important role in bone formation
- Lowers cholesterol and hypertension
- Slows muscle loss due to aging
- Stimulates Human Growth Hormone production

Whey protein can provide benefits to everyone – young and old, active and inactive. Athletes can experience many benefits from whey, and likely you can, too, whether you are an athlete or not. Talk to your Natural Health advisor to find out what is right for you.

Heather Allsop is a Nutritional Consultant at Nature's Source. Information for this article provided by Nelson Narciso of Body Plus.

## Herbs & Homeopathics for Inflammation

Accidents and injuries are indiscriminate occurrences in human nature regardless of how much we strive to protect ourselves from them. When injuries occur quick intervention will get you back on the road to recovery and enable you to fully heal in a shorter time span. Following any trauma, the body responds by going into a protective state called inflammation. Inflammation is the body's way of shielding the injured area from further damage. If the inflammation is quickly resolved the body will carry on as it normally would; but if the inflammation is allowed to linger the body may be prone to more destruction in the injured area.

As Naturopaths, our first plan of attack is to use rapid acting homeopathics to reduce the ill effects of the trauma

and to get the inflammation under control. Typically, *Arnica* is the first remedy that is administered, both internally and topically. Homeopathic *Arnica* helps to relieve the initial symptoms of aches, pain, and shock. It helps to reduce inflammation and hematomas to improve the vascular supply in the affected area. For inflammation of the tendons and ligaments caused by sprains the remedies *Ruta* or *Rhus Tox* may be taken. If there is an injury to the bones such as a fracture or bone bruising, *Symphytum* helps to decrease the pain and aids in the healing process. Homeopathic *Hypericum* is given if there is inflammation along the nerve pathways as in the fingertips, teeth, and sciatica.

Additionally, for anybody who has a black eye there are several remedies available to speed up the healing process. *Ledum* is the first choice for an eye injury because it facilitates in draining the blood from the local area. *Hamamelis* is very good for hemorrhaging and for blood shot eyes, while *Symphytum* is used for trauma to the eyeball from a blunt object (e.g. a ball or fist). These homeopathics can be safely used and should be kept handy in gym bags or in a first aid kit for quick action, which leads to quick recovery.

There are many herbs which provide anti-inflammatory action; some do this by acting as COX-2 inhibitors. COX-2 is an enzyme which converts arachidonic acid (from omega-6 fatty acids) to prostaglandin-E2 which can cause inflammation to the joints and most other areas in the body. Common anti-inflammatory herbs include *Boswellia*, *Curcuma Longa* and *Ginger*. *Boswellia* contains the active compound Boswellic Acid which inhibits the 5-lipoxygenase (5-LOX) pathways for arachidonic acid conversion and is particularly effective against arthritic inflammation. *Curcuma Longa* (*Tumeric*) contains *Curcumin* which works both on inhibiting the COX-2 and 5-LOX pathways. The added benefit of *Curcumin* is its ability to decelerate tumor growth and encourage proper cell proliferation. *Ginger* is a common herb/spice with strong anti-inflammatory properties and works on the COX-2 pathway along with improving drainage through an inflamed area. Another herbal anti-inflammatory is *Bromelain* (from pineapple), which provides enzymes to help break up the fibrin encapsulation of the inflamed site to advance toxin removal and improve drainage.

There are many more anti-inflammatory herbs and homeopathics available on the market. Types and dosages may vary depending on the individual's needs. As always, it is recommended that you consult your Naturopath for a more detailed approach to your specific condition.

*Baljinder S. Chhoker (BSc, ND)* is a Naturopathic Consultant for Nature's Source. For further information he can be reached at 905-257-1655.



## A Passion for Pets Dentals – Are they really necessary?

Many pets have poor teeth. Just like humans, they can have plaque and tartar build-up, most often due to years of poor quality food and/or neglect of their oral care. Just like humans, they need to see a dentist. In the case of a pet, the dentist and the veterinarian are one and the same. The veterinarian may say that your pet needs a "dental" to fix rotting teeth or to remove tartar from under the gum line. In a situation like this you may want to listen to your veterinarian. In some cases there is tartar build-up but no tooth decay. Your veterinarian may still insist that a dental is necessary, but you do have other options. Aside from choosing to have the dental you may also choose to change to a more natural diet including raw bones and/or try a homeopathic remedy to reduce or eliminate the plaque and tartar build-up.

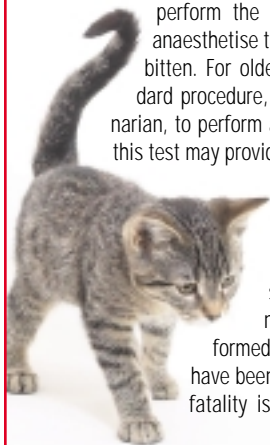
There are some things to be aware of when making your decision about the dental. Like humans, a pet can have plaque both above and below the gum line. Humans usually have the patience to sit with their mouth open while the dentist cleans the teeth. Pets, however, usually do not want to keep their mouths open to allow for the scraping. To enable the veterinarian to perform the teeth cleaning they will anaesthetise the patient so as not to get bitten. For older pets it is usually standard procedure, depending on the veterinarian, to perform a wellness test. Although this test may provide insight into a pet's ability to recover from the anaesthetic, there have been cases where pets have not survived routine surgery even after a wellness test has been performed. The veterinarian may not have been negligent. The chance of fatality is increased if your pet is

sick or old. Especially in this case you may want to consider changing the diet and using a homeopathic remedy.

Although there have been many kibbles developed specifically for oral health they often do not get the build-up at the gum line. A more natural diet such as a raw diet is pH balanced so plaque and tartar have less chance of building up. Chewing on raw bones can also help with oral hygiene at the gum line. Don't worry if you notice a bit of blood. This is no different than if you brush or floss your teeth and your gums start to bleed. In time with regular bone chewing the blood will no longer be present.

Brushing your pet's teeth every day is also good for their oral hygiene. Some dogs love getting their teeth brushed, but for most animals getting them to open their mouth for a toothbrush or even a finger brush is almost impossible. In a case like this you may want to consider a homeopathic remedy to maintain oral health. *Fragaria* is a very good remedy for removing plaque. It can be purchased from many stores selling homeopathic remedies however in many cases it needs to be specially ordered. Giving your pet 1 to 2 pellets of *Fragaria 6C* 3 times during 1 day of each month is usually sufficient to prevent tartar build-up. For the big jobs (when there is already plaque build-up) you may want to consider something like *Leba III* which has been proven to be amazing for the removal of plaque and tartar build-up. This should be taken according to manufacturer guidelines. *Leba III* can be found at some pet food stores specializing in holistic foods and at homeopathic vet offices. Regular oral care and a healthy natural diet can help to keep your pet happy and healthy for a long life.

*Delia Lo Porto* is a Nutritional Consultant working at Nature's Source. Her passion is animals. For a nutritional consultation for you or your pet, please contact her at Nature's Source in Etobicoke (416) 242-8500.



## What are Amino Acids? How do they work and why are they important?

For optimal health and happiness we require essential nutrients every day to keep the body working efficiently. It is fascinating how the human body uses so many different kinds of biochemical reactions to process and synthesize. It is truly amazing how every cell in the body uses the required raw materials of protein, essential fats, water, minerals, vitamins, hormones, and enzymes in the stages of repairing and building.

Of the necessary and vital ingredients that are part of every living cell in the body, Amino Acids are the "building blocks" that are combined with other amino acids to make up all the proteins that carry out metabolic functions. Proteins are used to build and repair muscle tissue, skeletal bone tissue, eliminate waste, and release toxins from the body.

There are over 300 different types of amino acids, but approximately 20 of these amino acids are most commonly used in the human body. Some of these are essential amino acids that must be provided to the body because the body cannot manufacture them from other nutrients. Essential amino acids include isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan and valine. These amino acids can be provided through proteins in the diet that are broken down into the amino acid building blocks. The amino acids can then be synthesized into new and different proteins for use in our bodies.

Although each amino acid has a different purpose they work synergistically with other amino acids to accomplish a bigger goal and work as part of a much bigger picture. Amino acids can be found as supplements at your local health food store, but there are also nutritional ways to provide your body with amino acids. Here are some examples of essential amino acids, the roles they play, and food sources you can purchase at your local grocery store.

**Tryptophan**, for example, is the amino acid that is great for increasing Serotonin levels. It assists with neurological functions such as depression and difficulty sleeping, and it helps the body to adjust to stressful situations better. Because it elevates moods, it is also known to reduce sugar cravings. Turkey meat is naturally high in Tryptophan and explains why so many people feel sleepy or tired after eating turkey during holiday mealtimes.

**Methionine** is another essential amino acid. Its role is important especially as a "methyl donor" and it is the principal source of sulphur that helps the body maintain healthy levels of homocysteine. Methionine reduces histamine levels, helps with hormonal metabolism and growth, and can be an excellent antioxidant against free radical damage. Methionine can be found in chicken, fish, beef, pork, soybeans, eggs, cottage cheese, and yogurt. Please note that if you are sensitive and/or have food allergies to these foods, Methionine can be provided to the body in the form of a supplement.

The amino acid, **Phenylalanine** converts into tyrosine and is an important factor in the production of the neurotransmitters norepinephrine and dopamine. Phenylalanine is involved in a variety of functions including the process of

the heart rate, fat metabolism, and thyroid functioning. It can elevate moods, decrease pain, aid in memory and learning, and promote alertness. Nutritional sources are cottage cheese, fish, meat, poultry, almonds, pecans, brazil nuts, sesame seeds, chickpeas and lentils.

We often take for granted the vast and wonderful supply of nutrition that is provided through nature itself and is the best way to nourish and feed the body holistically. However, sometimes that is not possible especially if you are a vegetarian and do not eat meat or dairy, so taking a supplement to get all the essential amino acids in your diet can be considered. Always

check with a qualified nutritionist, naturopath or doctor before taking amino acids to make sure that there are no contraindications for taking them.

For every age, every condition, no matter what your profession is, the right amino acids increase endurance, create a stronger and more efficient immune system, increase cellular respiration, and much more, and are worth looking into.

*If you would like to know more about amino acids, please contact Yvonne Horvat, a Registered Holistic Nutritionist working for Nature's Source.*

## SPORTS ZONE

### Cardio & Fat Burning - Is morning cardio really better?

You climb on your exercise bike or treadmill at 6 a.m. because for years the exercise gurus have been claiming that doing cardio first thing in the morning is best. For those trying to lose body fat, morning cardio has remained a ritual. Albeit there are some benefits to doing morning cardio, the question at hand remains - Does it help with fat loss over the long term?

The following points have been the basis for doing cardio first thing in the morning:

- First thing in the morning you have less glycogen (stored sugar) in the liver and muscle and the body will use fat predominantly as a source of fuel.
- When you wake up in the morning, you have less circulating glucose, so you'll get to the fat faster as a reserve for oxidation.
- If you do your cardio first thing in the morning, your metabolism will be elevated for the rest of the day.

#### Does this timing really matter?

There are a plethora of studies in the Journal of Applied Physiology to show that fat burning is more effective in the morning. However, since you can basically find anything in the literature if you look long enough, I'm not ready to buy into this argument.

Other exercise physiologists suggest that there is a "pool of calories" and it really does not matter that you may be using a little more fat as part of the fuel mix in the long term. So, if you do cardio first thing in the morning and burn more fat you are using less stored sugar from your liver and muscle. The benefit of using glycogen (stored sugar in liver and muscle) is that when you do eat your body will fill up glycogen storage first before turning calories into fat. Therefore, if you do cardio later in the afternoon or early evening and burn some glycogen, the calories you consume thereafter may be less likely to be converted into fat. Overall, it will work out about the same if you do cardio in the



morning or later in the day. The key is consistency - do the exercise morning, afternoon or evening (just do it!).

The other hypothesis that has been put forth is to stick within your "target heart rate" to burn more fat. This idea stems from the ideology that anaerobic activity does not burn fat as fuel so if your heart rate gets elevated too high, you'll stop burning fat. Well, that topic will be the focus of the next article "**Duration of Cardio vs. Intensity**".

So, for the time being it's more important that you do cardio consistently and don't worry about getting up at 6 a.m.; the extra sleep may do you some good.

*George Tardik B.Sc.(Hon), RHN, RNCP, (ND Candidate).*

## New Product MUCOLYXIR – For Respiratory Health

Mucolyxir is an interesting product that uses micro-dose DNA derived from wild Pacific salmon to support respiratory health. You may ask 'How does salmon DNA promote respiratory health?' Dr. Albert Dahlberg has stated that natural microdose DNA is different than other DNA-based therapies in that it does not affect gene transfer; it relies on the physical molecule itself to place into motion a series of events at the cellular level. How does this relate to Mucolyxir and its effect on respiratory health?

When the airways become congested, the immune system compensates by causing expectoration. It is thought that viscous sputum that builds up in your respiratory tract may be partially the result of accumulated DNA. This excess DNA gathers in part from the activity of the immune system as it tries to remove bacteria from the lungs. The excessive DNA is a result of lysed white blood cells from the body's failed attempt to eliminate foreign material. The DNA in bacteria can induce IL-8 (interleukin-8), which in turn causes the release of phagocytic cells that can destroy bacteria. As the phagocytes continue to work, phagocytic DNA is added to that from the bacteria. As a result, the combined accumulation of DNA causes the immune system to become increasingly sensitized to the DNA build-up and creates a situation for immune response. Mucolyxir may balance mucous levels via a feedback mechanism; it may interrupt DNA build-up by helping to reduce the excessive production of IL-8, causing decreased white blood cell activity while increasing their effectiveness.

Mucolyxir has also shown that it may increase the strength and frequency of the beat of cilia. Cilia are tiny hairlike projections on epithelial cells that line the bronchial tract. Research has shown that phosphorylated nucleotides (small pieces of DNA containing phosphate) can bind to receptors on the cells, and the cilia seem to respond to this stimulation by beating faster and stronger. As a result, this causes the mucous to be expelled more efficiently.

Taking Mucolyxir may result in decreased mucous viscosity, enhanced expectoration, increased aeration, and healthy bronchial function. The suggested use is 1 or 2 drops placed in the mouth slowly, then swallowed, one to four times daily. Do not eat or drink for 5 minutes after taking.

*Nadeem Aslam researches and recommends new products; he has extensive interest in this area. He can be contacted at Nature's Source.*

## LETTER FROM THE EDITOR Sports Nutrition

Are you an athlete? Whether or not you are an athlete, we are all active to some degree. Some are body builders, joggers, cyclists, swimmers, or work out regularly in a fitness centre. Some avidly play competitive sports, and are seeking optimum performance at all times. Others may choose a different pace, enjoying a regular evening walk – perhaps with a pet dog. In a recent study, the biggest difference in general long-term health was seen between those who were essentially inactive and those who had even a moderate level of activity. So find some activity that appeals to you – and stay with it for your long-term health.

In this newsletter we address issues that can pertain to the

active person – including you. Everyone needs nourishment for their body to function, repair, and build. Some forms of supplementation are designed to help those working at high physical levels, and some (but not all) of these can also have value to those who may not be so physically active. As you read the articles on Sports and Sports Nutrition, you may find answers to some of your questions on what is right for you.

We have a new column this month – **SPORTS ZONE**. George Tardik will be writing this column regularly. Often our newsletter discusses what supplements and what foods are good for you, but George will go beyond this and also talk about what you do – your activity – and how it

affects your health. You can read about George in another new feature for the newsletter – **Meet the Nature's Source Staff**. Periodically we will introduce our staff members through a column such as this. You may already be familiar with our staff members from our stores, and here is a chance to learn more about them and the expertise they share with you when you come to Nature's Source.

*Heather Allsop, Editor*



## Meet the Nature's Source Staff

### George Tardik B.Sc.(Hon), RHN, RNCP, (ND candidate)

With a true passion for healthy living, George Tardik, Registered Nutritional Consultant, has spent years researching nutrition and human sciences. An industry expert studying physiology at University of Toronto then graduating from biological sciences from York University,



George has appeared on CBC Sports Journal, News World, and Marketplace. He has counseled a

wide variety of athletes ranging from Olympic runners to NFL and NHL athletes. George was also part of Mojo 640AM radio's "2BFIT" health and fitness show.

*"George gives clients the support they need to achieve their health objectives."*

With proficient knowledge in weight loss, obesity, immunity, arthritis, performance nutrition,

and diabetes, George creates individualized programs for successes. Using the client's profile as an indication of health, George helps each individual to navigate through the complex arena of biochemistry, pointing out markers that could indicate problems related to fatigue, lethargy, insomnia etc. A detailed-driven consultant, George helps to build stronger, healthier people from the inside out. He continues his studies at the Canadian College of Naturopathic Medicine completing the Doctor of Naturopathic Medicine program.

## WE APPRECIATE YOUR FEEDBACK

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