Sport and Nutrition
Enhancing Performance

The professional athlete would not step out in the field without first taking care of himself. Athletes know that **eliminating** negative lifestyle choices, **nourishing** the body with healthy foods and vital nutrients, and **replenishing** the body with water and health supplements, can lead to better performance during training and competition.

In order to feed athletes properly, it is necessary to plan ahead and learn about the benefits of eating the right kind of foods. I know that this is always easier said than done. There are many people who do not like to eat healthily and some who simply don't have the time to eat what they should be eating.

I shall endeavour to give you the outlines of the ultimate diet to enhance performance and well-being but I am fully aware of the obstacles that most people face when orchestrating the task. With the latter in mind, I shall give you useful tips and choices, which should not compromise the goal at hand.

For a Healthy Body we need:

Healthy Cells and Healthy Blood

pH of the Blood

0 7 7.35 -7.45 14

Blood carries nutrients to all our cells. Life and health is the balanced interaction of all body cells. Cells group together to form tissues, organs, bone, systems, etc. Cells consume fuel, produce energy, eliminate waste. They are made up of water, electrolytes, protein, lipids and carbohydrates.

Food and drink leaves and acid/alkaline ash or residue on your blood. Stress secretes an acid ash on the pH of the blood. Disease thrives in an acid-ash environment.
The pH of our blood is alkaline and a 75% alkaline forming diet will greatly contribute to overall better health.

Given the necessary components our body in the totality of its cells can maintain a balance of life and health. **Your DAILY FOOD INTAKE should be 75% alkaline forming and 25% acid forming.**

Use AIM's pH Test Kit to test your pH. You can check your saliva pH, or urine pH, by using Litmus paper to find out if your food selection is providing the desired balance. Check urine pH 3 times a day. A urine pH of between 6.2 in the morning and 7.4 in the afternoon is ideal. This will vary throughout the day depending on the foods you eat, allergic reactions and stress factors.

Acid Forming Foods	Alkaline Forming Foods
• All animal products • Vinegar • Heated fats and Heated fruits • All processed juices, teas, coffee, cocoa & alcohol • Sugar • Most nuts • Most grains	• All raw foods • Sprouts • Almonds • Raw and cooked vegetables • Potatoes • Millet • Dried fruit (sulphur free) • Freshly squeezed fruit & vegetable juices

Energy Requirements

This is the most important and fundamental factor in all diets – sport related or otherwise. Unfortunately, this is also the nutrient that is the most misunderstood. All athletes need extra energy to sustain his/her performance. Most people have a misguided idea that sugar is an energy food and as such they can have it ad lib as it will improve their energy levels. Nothing could be further from the truth. Refined sugars and foods containing refined sugars are termed 'empty calories' because the only thing they supply is glucose which is rapidly taken up into the blood stream at a rate that is too high for the body to cope with and this has disastrous consequences.

It also does not come with any accompanying nutrients such as vitamin B's or vitamin C or any minerals, so it has to draw on the body's supply of these essential nutrients in order for it to be metabolized. It's a bit like living off your savings account without replenishing it – the result is that eventually you will have no reserves of these essential nutrients left. The high blood sugar levels that result from eating foods that have excess refined sugars in them, causes the body to release a hormone called insulin, which is needed to take the sugar out of the blood and into the tissues. Unfortunately, such high blood sugar levels initiate a very rapid insulin response with the result that all the blood sugar is taken out of the blood leaving the individual very 'low'. The consequences of this are vast and complex and without going into too much detail, you are exposing yourself to a variety of degenerative conditions such as overweight, diabetes, high blood pressure, etc. etc.

Fruit contains sugar, mostly in the form of fructose, which does not initially spark an insulin response and is very easily and quickly assimilated into the blood stream. However, because fruit contains other elements such as vitamins and minerals and of course roughage in the form of cellulose, the blood sugar levels do not rise too rapidly and the person gets a constant supply of glucose without the over stimulation of insulin. Fruit is therefore the athletics best friend. In particular fruits such as bananas, oranges and pineapples, which are very high in potassium, have added advantages, because the potassium will prevent dehydration as it balances sodium levels within the body.

The other **carbohydrate rich foods such as vegetables** (and certain grains) should make up the bulk of the diet. These foods, with their complex carbohydrates, keep the blood sugar levels not only stable but constant, as they take a longer time to digest and so there is a constant but not excessive amount of glucose released into the blood throughout the day. The quantities you eat of these foods must be determined by your body fat percentage and how active you are during the day.

Carbohydrate stores - Glycogen

- Carbohydrates stores (glycogen) in the body are limited - must replenish carbohydrate stores every day.
- ***Optimize Muscle Recovery - Help your muscles recover fast - eat and/or drink a high carbohydrate snack within 30 minutes after exercise***
- ***Eat a high carbohydrate, moderate protein meal 1-2 hours later to continue with muscle recovery.***

I feel it is prudent at this point to talk of the role of glycogen in the body. As I've mentioned earlier, whenever exercise is performed, energy will be required and therefore some carbohydrate must be available. The longer or harder the exercise, the greater the demands placed upon carbohydrate stores in the body. The energy stores in the body provide the link between diet and performance, especially with regard to endurance sports. Glycogen is the only form of stored carbohydrate in the body. Fat also is energy storage, but it has to be metabolised in order for the free fatty acids to become available to burn as energy. Glycogen stores are therefore the first and foremost source of energy to the muscles. Unfortunately, the body's stores of glycogen are not that great (about 600-800 Calories or 2500 – 3400 KJ). When stores of muscle glycogen are depleted, the ability to perform exercise is severely limited. Since these stores are so limited, they must be adequately repleted or the next training session/competition will be started with lower than normal glycogen reserves and performance will obviously then be compromised. Complete repletion of muscle glycogen reserves after prolonged exercise may take up to 48 hours. The cellular damage inflicted on the muscle by extreme effort also appears to impair the process of glycogen re-synthesis and in the case of marathon events, it may take up to 7 days or more to fully replenish glycogen reserves. Obviously, glycogen stores will remain low unless carbohydrate is consumed. Studies have shown that after exercise-induced glycogen depletion, a diet high in carbohydrates will increase the rate of re-fuelling. It is also important to note that re-fuelling the glycogen stores should start immediately after the exercise as this is when glycogen re-synthesis is at its optimal level. Many athletes are familiar with that 'end of the week' feeling' and opt for vitamin and mineral supplements to prevent and/or fix this condition. However, these supplements will not help at all because the problem is depletion of glycogen stores and not depletion of nutrients. A rest day in between the training days is vital as well as eating the correct foods. Simply eating junk foods, which also have a high percentage of fats, many of which are extremely bad for you, is not the answer. You must eat high carbohydrate foods such as whole grains, pulses, fruits and vegetables in order to completely and adequately replenish muscle glycogen stores.

The Concept of Carbohydrate Loading

Once again, this is only really appropriate for endurance sports such as running and cycling. The whole idea behind carbo-loading is to maximize your glycogen stores at least 3-5 days before an endurance event. In traditional carbo-loading regimes, it was necessary to restrict carbohydrates for a certain period and then carbo-load as it was thought that this would further glycogen uptake. However, I don't think that this philosophy is followed any more and I certainly think that it could be more harmful than beneficial. Essentially, carbo-loading means adhering to a diet that provides approximately 80% of the energy intake in the form of carbohydrates. This is not as easy as it sounds, because, in order for 80% of energy intake to come from carbohydrates, you effectively have to cut down fat intake as this will slow down the glycogen absorption process. All athletes will benefit simply from a diet that is high in unrefined carbohydrates.

Protein's – the building blocks

Protein is needed for cell growth and repair and is an essential component of each and every cell in the body and makes up 20% of overall body mass. In addition, it is necessary for the development of muscle and internal bone structure.

Protein plays a role in building muscle, fighting infection, and provides signals and controls for tissue growth and maintenance.

While protein is important, a high-protein diet is not recommended for athletes and replacing carbohydrates with protein can actually impair athletic performance. Without adequate unrefined carbs an athlete will tire quickly and won't have the energy to train or compete.

Protein rich foods include animal proteins such as meat, chicken, fish, eggs and dairy and plant protein foods such as soy, legumes, raw nuts and seeds. Obviously, advancements in nutritional science have deemed some protein sources to be more beneficial than others. References to work done by Dr Campbell in the China Study and Dr Dean Ornish in reversing heart disease, have shown that plant proteins are superior when it comes to enhancing long term health benefits. Eating plant proteins such as those mentioned above will not only provide the body with the necessary amino acids but also will provide that ever essential factor – energy in the form of complex carbohydrates.

It was once believed, and I think, still is, that athletes need large amounts of protein in order to sustain their performance. Research has taught us that this is definitely not true. In my experience **I have found that athletes, who are very active, do need slightly more protein than sedentary individuals, simply because they need amino acids for build up and repair of muscle tissue**. However, this does not mean that athletes must take high-protein supplements. To the contrary, high protein diets have been found to decrease performance and endanger health and the very slightly increased requirements can easily be met by increasing the quantities of plant protein foods. One of the most dangerous side effects of high protein diets with athletes is that the excess protein overburdens the kidneys. Also in sports in which the athlete can rapidly dehydrate, such as cycling or running, the heart muscles may be affected because of excessive losses of potassium through sweat and the excess urine that the kidneys have to produce to get rid of the products of protein metabolism such as creatinine, uric acid, etc. If the latter is not sufficiently flushed out, renal stones can develop.

Barleylife

Barleylife is the richest most balanced source of nutrients in a single food on the face of the earth.

- Barleylife is a 100% natural dried juice. A Complete Protein.
- Contains Natural Chlorophyll
- Barleylife contains an abundance of vitamins, minerals, amino acids, numerous usable live enzymes
- Alkaline pH factor
- Barleylife builds and strengthens the immune system
- Anti-tumor promoters and prevents ageing
- Barleylife helps stabilize blood-sugar levels
- Helps normalize high-blood pressure and low-blood pressure
- Barleylife is anti-inflammatory
- Promotes restoration of damaged DNA in the cell nucleus and restores biochemistry of each organ in the body

- Barleylife gets absorbed through the mucous membranes directly into the bloodstream

Fats

Fats are absolutely essential in the athlete's diet. There are certain vitamins such as A, D, E and K that are fat-soluble and therefore can only be absorbed in the presence of fat in the diet. Also, there are essential fatty acids that cannot be manufactured by the body and are essential for every cell in the body to maintain normal function. Fat free diets are extremely dangerous and will have a disastrous consequence on an athlete's performance and health. However, there are good fats and bad fats. The bad fats are in all processed foods such as chips, biscuits, chips, ice-cream, coffee creamers, etc. These fats are also usually accompanied by refined carbohydrates such as sugar and white flour, so if you avoid fast foods and commercial snacks you will benefit by not only avoiding bad sugars but also dangerous fats as well.

It is vital that the active person gets sufficient essential nutrients in order to, not only optimize his or her performance but also maintain health. It is a well-known fact that many marathon runners and cyclists often get sick, frequently before a main event. One of the primary reasons for this is their generally low-fat percentage. Yes, its true, a certain amount of fat on an individual is desirable.

The good fats must be included in the diet and quantities again can be determined by individual energy needs and body fat percentage. A food containing good fats are avocados, raw nuts and seeds, olives, yellow sweetcorn, oily fish and supplements such as **AlMega** (balanced ratio of Omega 3, 6 and 9). They can be eaten liberally throughout the day for the best results. Foods like avocados, raw nuts and seeds have added benefits because they also contain excellent proteins as well as vital minerals such as calcium and magnesium. I cannot emphasize these foods enough as they are vital for the overall functioning of the entire hormonal system as well as essential factors in the metabolism of nerves and muscles.

The best balance for active people: 50-55% of calories from carbohydrates, such whole grains, cereal (millet or quinoa), rice (brown rice or basmati etc) and pasta; 10-15% from protein food like meat (hormone free), poultry, fish, dry beans and nuts; and 25-30% from fats such as oils, avo, nuts and seeds etc.

Water

As far as I'm concerned, this is another area of great misunderstanding with regard to athletes and performance. Although fluids are usually made available during sport, they are often in the form of juices and 'special' sport drinks which are supposed to enhance performance. All athletes, regardless of the age of the athlete or the type of sport in which they are participating, need water more than they need the salts, sugars and other components that are put into sport drinks. Basically, whenever your body is short of water, your performance bombs. The three biggest factors which cause lack of performance are: overheating, disruption of chemical balances and dehydration. The biggest one of these is actually overheating. Exercise increases the body temperature in direct proportion to the exercise load. Your body will attempt to maintain its temperature of 37 deg C by moving the extra heat to the skin via the blood. There it dissipates into the air, mainly by evaporation of sweat. However, your blood must also carry oxygen and nutrients to the muscles and remove the waste products of muscle metabolism. The higher your core temperature rises; the more blood is used for cooling and the less is available for the muscles. So the cooler you stay during exercise (not being too cold), the better your muscle

function. In order to keep your body temperature stable, it is advised that you drink the liquids as cold as possible as this expedites the movement of water out of the stomach and into the tissues. It is also advised to drink during training and competition.

The best way of combating dehydration during training and competition is to ***pre-hydrate.*** Numerous studies at sport clinics have shown that if an athlete has effectively pre-hydrated, then this minimizes the chances of dehydrating during competition and therefore maximizes performance. The general rule for this is to drink extra water for 2 days prior to an event. Then, between 4 hours and 1 hour before the event commences, drink 250 ml glass every 15 minutes. Obviously, this amount refers specifically to endurance sports but can be applied to a lesser degree to other sports such as tennis and cricket. Make sure that you drink nothing for at least 20 minutes before the beginning of an event as you cannot be active with a stomach that is full of water. In order to stay hydrated, an athlete should drink at least every ½ hour. Water absorption can also be maximized if you sip the water and don't gulp it. The latter causes you to swallow air which will impede emptying of the stomach. The same applies to carbonated beverages. The other disadvantage of carbonated drinks is that the carbon will carry oxidants and other cell damaging compounds much more quickly to the tissues than if there was no carbon present. Anything added to water slows down its absorption and since most of the sport drinks available contain loads of simple sugars, salts as well as flavourants, colourants and preservatives. Research has shown that simple sugars like glucose and in particular fructose (refer to notes on carbohydrates above), can enhance performance as they do give a boost to energy levels.

Once you have finished training/competition it is vital that you don't sit down. This is when you must **re-hydrate with Peak Endurance** and continue to keep the muscles moving by walking slowly. Muscle cramps and post-event injuries often occur because insufficient blood gets to fatigued muscles to remove waste materials. If you have participated in an endurance event, continue extra drinking for at least 12 hours.
Use AIM **Peak Endurance** to prevent muscle cramps and stiffness.

Muscle Damage During Exercise

All Athletes should have a serious look at the various supplements they are taking to improve their performance. Just because a supplement promises to improve your stamina and/or actual performance, it does not mean that it comes with accompanying health benefits. On the contrary, many performance-enhancing supplements have serious side effects, which are frequently ignored in the pursuit of that ever-elusive gold medal!!!!

Muscle power is generated by a conversion of the chemical energy of a compound in the muscle cells called ***adenosine triphosphate (ATP),*** to the mechanical force of muscle contraction. ATP is called the 'energy currency' of the body. That is, it is the primary source of energy for the cells. Without ATP, there is no life. For cells to function properly, they need an adequate amount of ATP. ATP production peaks at age 20 then begins to diminish to the point where, at age 70, it is one-half of what it used to be. Because it is essential an energy booster, **Peak Endurance** is great for those working out!

As the store of ATP in the body is very limited, during exercise the body burns glycogen and fat stores to provide ATP. In order to explain this further, it is necessary to cover some biochemistry. The majority of energy production from fats

and glycogen is clean and does not produce many damaging compounds like free radicals. However, at least 5% of your oxygen use is through another pathway that produces many free radicals. These compounds are like shrapnel and damage muscle tissue. This damage is felt by the sore muscles and weakness an athlete may feel for days after heavy exercise. When an athlete increases the intensity of the training program then at least 12-20 times more oxygen is burned through this alternate pathway, thereby creating many more free radicals. Researchers at sports institutes have been investigating this problem for years as it clearly hampers performance long term. Studies have come up with a variety of supplements to prevent muscle damage. The most important of these is a group of compounds collectively known as anti-oxidants. These compounds can immobilize free radicals by binding with them and thereby impairing their ability to enter cells and cause damage. A number of vitamins and nutrients fall under this classification. Vitamins C and E are powerful anti-oxidants. All coloured fruits and vegetables contain pigments (hence the colour) which have powerful anti-oxidant activity - another reason why athletes must have a diet based on fruits and vegetables. In cases where athletes are subjected to hours of training, I recommend supplementing with anti-oxidants such as Barleylife and Proancynol 2000, which contains Co-enzyme Q10. The latter is directly indicated within the actual breakdown of ATP and certainly has value for athletes who train for a couple of hours every day.
Use AIM Peak Endurance to provide ATP, Electrolytes and B vitamins.

Optimize Muscle Recovery

- Help muscles recover fast - eat and/or drink a high carbohydrate snack within 30 minutes after exercise
- Eat a high carbohydrate, moderate protein meal 1-2 hours later to continue with muscle recovery.
- Use Peak Endurance.

Beat Fatigue with *Red Rush*

For performance, stamina and recovery, the body craves an infusion of **nitric oxide** through whole-food, natural sources. **Increase your intake of vegetables** with a high dietary nitrate content, such as **green leafy vegetables or beetroot.** Beet is full of beet nitrates.

a University of Exeter (u-E) led study shows for the first time how healthy nitrate in beetroot juice leads to a reduction in oxygen uptake, therefore making exercise less tiring. The Journal of Applied Physiology study suggests the effect is greater than that which can be achieved by regular training!

Nitric **O**xide significantly impacts **blood flow** and **oxygenation**, two keys to improving athletic and physical performance. Beetroot has the power to cleanse your system and increase haemoglobin, along with purifying your blood. Beetroot also contains silica, vital for healthy skin, fingernails, **ligaments, tendons and bones.** Beetroot increases haemoglobin (corrects anaemia) has liver, spleen, gall bladder and kidney cleansing properties. Iron in beetroot - organic and non-irritating and will not cause constipation. Anti-carcinogenic Colour: The deep red colour of beetroot comes from betacyanin an anthocyanidin a group of powerful antioxidants which protects against colon cancer and helps aching muscles. Beetroot is also useful in acidosis due to being **rich in alkaline elements.** Nitric Oxide goes into cells (the Mitochondria) to create Energy!

Also, more than 25% of adults are hypertensive. This figure will increase to 29% by 2025. Hypertension causes 50% of coronary heart disease, and 75% of strokes.

Cardiovascular disease kills over 110,000 people in England every year. Drinking beetroot juice, or consuming other nitrate- rich vegetables, a simple way to maintain a healthy cardiovascular system.

Red Rush is a natural concentrated Beetroot drink, which concerts nitrates into nitrites in the body:

- Decreases fatigue by reducing lactic acid build-up
- Promotes fast, full recovery
- Increases stamina naturally
- Enhances muscle performance
- Converts fat to fuel at a higher rate
- Magnifies oxygen utilization
- Elevates physical performance
- Boosts circulation

Recommended Supplements/Wholefoods for Athletes

1.A **whole food supplement** like **Barleylife (or the Garden Trio)** which supplies concentrated nutrition in an easily assimilated form.
Take 2 tsp – 4 tsp daily on an empty stomach.

2. **AIM Peak Endurance**. This product provides 125 mg Peak ATP, which is the only known patented ATP product that has been shown in clinical studies to elevate the extra cellular ATP levels in the human body.
Peak Endurance also provides Electrolytes which are necessary for conducting nerve impulses in our bodies. A typical sports drink contains three electrolytes and as much as 10-35g of sugar; AIM Peak Endurance has five electrolytes – sodium, potassium, chloride, magnesium and calcium – and only 1g of sugar.
Peak Endurance contains six B vitamins (B1, B2, B3, B5, B6 and B12) – B vitamins are necessary for extracting energy from carbohydrates, building muscle and synthesizing DNA.
Dosages can be modified according to requirements. Generally, for isotonic purposes, take 1 scoop or 1 sachet in 200 ml water twice daily. Peak Endurance can be taken before, during or after exercise.

3. **AIMega**
AIMega contains omega 3, 6 and 9 essential fatty acids in the correct ratio.
Take 3 -6 capsules daily with food – this will supply all the essential fatty acids as well as facilitate the use of free fatty acids for energy production.

4. **ProPeas**
ProPeas is an all-natural vegetarian protein source made from field peas.
Unlike whey and soy protein, pea protein is not a major allergen and provides an alternative to most mainstream animal protein sources that are high in fats and bad cholesterol. The peas found in ProPeas are grown in Canada, the world's largest producer of non-genetically modified pea crops. Peas are naturally gluten-free and allergen-free, and they require no chemical fertilizers or chemical filters.
ProPeas

- Contains 2.595g of BCAA (Branch Chain Amino Acid) per serving
- Helps build and maintain healthy muscle

- Improves circulation and calcium absorption
- Increases energy and endurance
- Regulates blood sugar and brain function

5. **Red Rush**
Red Rush is a concentrated Beetroot drink, which concerts nitrates into nitrites in the body. Nitric oxide significantly impacts blood flow and oxygenation, two keys to improving athletic and physical performance. Beet is full of beet nitrates.
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- Converts fat to fuel at a higher rate
- Magnifies oxygen utilization
- Elevates physical performance
- Boosts circulation

6. A good fibre supplement especially if an athlete suffers from digestive ailments like **constipation**. **Herbal FiberBlend** contains 19 cleansing herbs and fibre which heals and cleanse the colon and digestive tract. Herbal FiberBlend is well tolerated and helps to keep blood sugar levels stable by slowing down the release of sugars into the blood stream.
Herbal FiberBlend is Excellent for Diarrhoea and IBS symptoms!

7. **Florafood** – Balances our intestinal pH, help manufacture vitamins B1, B2, B3, B5, B6, B12, A & K as well as the essential fatty acids, enhance calcium absorption. Florafood aids in the digestive process by helping digest lactose (milk sugar) and protein. It helps control CANDIDA ALBICANS overgrowth, decrease flatulence, abdominal digestion, gas and bloating. Florafood helps normalize bowel function by correcting both constipation and diarrhoea.

8. **Frame Essentials**
To maintain joint health, rebuild damage cartilage and avoid pain.
Frame Essentials contains:

- Glucosamine –proven in many studies to rebuild damaged cartilage - contributed to less pain and a greater degree of movement
- MSM – biologically active form of the mineral sulphur - maintains joint mobility
- Boswellin - (Indian Frankincense) help maintain healthy joints. Improves blood supply to the joints and maintains the integrity of the blood vessels

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