NUTRITION IN THE MARTIAL ARTS

“When you are a Martial Artist you only eat what you require and do not get carried away with foods that do not benefit you as a Martial Artist”.-----Bruce Lee

It’s amazing how many Martial Arts students (and Instructors) fail to stress the importance of correct diet as part of their Martial Arts training.

For a student to realize their full potential this aspect of any Martial Arts (or indeed any sports) schedule or program is vital if you want to get maximum benefit and performance from your training.

Putting the “correct fuel into your tank” is very important. You wouldn’t put an inferior petrol into a formula 1 racing car and still expect top results, it wouldn’t happen.

Generally a well prepared and balanced diet allows for:

- Better performance
- Improved strength, speed and stamina
- Shorter recovery time after a workout or injury.

SPORTS NUTRITION, COMPONENTS AND THEIR BENEFITS

CALORIES

We can measure our body’s energy requirements in calories. Calories can only be obtained from the 3 macro-nutrients; Carbohydrates, Protein and Fat;

- 1 gram (0.035 oz) Carbohydrates or Proteins = 4 Calories
- 1 gram (0.035 oz) Fat = 9 Calories.

Most Martial Artists underestimate their calorie needs. We must ensure we have enough energy to fuel our body to enable us to train at our full potential.

Competitive Martial Artists (which train in high aerobic and anaerobic conditions) have increased Calorie needs. Female Martial Artists of this kind may require up to 4000 calories a day and Males up to 6000 Calories a day.
Let's look at the various components that give us these Calories:

**CARBOHYDRATES (CHO)**

These are the basic energy source for our body at rest times and more importantly during training. Our body breaks down Carbohydrates to smaller sugar particles, which in turn produce the body's energy coin. To put it simply—if the body is the car the Carbohydrates is the fuel. A balanced diet regardless of the level of sports activity consists of 55%-60% calories from Carbohydrates.

So if we have general training needs and weigh a healthy 80kg we should be eating 400-560 grams of Carbohydrates a day.

Our body can only store small amounts of CHO, especially in our muscles and Liver, therefore we should consume Carbohydrates with every meal we eat, before, after and sometimes during training. Allowing for 2/3 of our meals Calories to come from Carbohydrates.

**Foods that are abundant with Carbohydrates are:**

Grain products: Wheat, Rye, Oatmeal, Rice, Pasta, Corn.

Roots: Potatoes, Yams.

Pastries: Bread products, Crackers.

Fruits: Fruit juice, Vegetables.

Pulses: Dried Beans and Peas.

Excessive intake of Carbohydrates will result in an increase of body fat, but otherwise is "risk free".
PROTEINS

Our muscle tissue is made up of Proteins, and so are our Blood cells and the majority of our functioning organs.

Proper Protein intake is highly important for Martial Artists to build muscle and allow cell repair and can also be used for energy when our CHO levels are low.

As a “rule of thumb”, Protein intake should amount to approximately 20% of our daily Calorie intake.

Excess Protein is burned for energy or stored as fat by our body.

Although Protein needs are higher for Professional Martial Artists than those of the general population, normally both can reach them through a well balanced and calculated diet, and if not then Protein supplements are available.

Foods that are abundant with Proteins are:

Meats
Poultry
Fish
Eggs
Dairy products
Nuts
Soy beans and products such as Tofu
Dried beans

Proteins are made up of Amino Acids, and we now know that Amino Acid balance and Protein quality are just as important as the total amount of Protein consumed.

Meaning that its not only important the amount of Protein we intake, but rather the quality of it.

The common method to assess Protein quality is the BV method (Biologic value) which is determined by the Amino Acid composition in the food.
For example; with 100 being the highest score, here are the top Protein foods excluding supplements:

**Biologic Value:**

Whole bean: 96  
Whole Soya bean: 96  
Chicken egg: 94  
Soybean milk: 91  
Cows milk: 90  
Cheese: 84  
Rice: 83  
Fish: 76  
Beef: 74

**Fats.**

Body fat is vitally important for sustaining prolonged training, and is the biggest storage component in our body.

If during low level aerobic activity such as Tai Chi our body is low on energy (not enough Carbohydrates) it will use our body fat as energy.

If however during high level aerobic or anaerobic training our body is low on energy it will begin to burn muscle.

Fat should not exceed 20%-25% of our daily Calorie intake, and unsaturated fats are a healthier source for fat in our diet, such as:

Olive and Canola oil  
Olives  
Nuts  
Avocado  
Seeds  
Fish oil.
MINERALS IN SPORTS NUTRITION.

Our bodies are made up of minerals. They are its building blocks. We need a daily supply of them in changing amounts for our bodily mechanism to function well.

The two most important minerals are Calcium and Iron.

**Calcium rich foods are:**

- Dairy products
- Beans.
- Eggs
- Green vegetables
- Fruits
- Dried fruits
- Seeds
- Nuts

**Iron rich foods are:**

- Meats
- Beans and lentils
- Spinach
- Liver
- Shellfish
- Chocolate (honestly)
FLUID INTAKE IN SPORTS NUTRITION

Adequate fluid intake maintains blood volume, regulates body temperature, aids co-ordination, concentration and endurance in the Martial Artist. During strenuous training Martial Artists must drink enough water to maintain their pre-exercise weight. If we don’t we will hurt our performance and any gains we may get from the training session.

During exercise the body regulates its temperature by sweating. Heat is removed from the body when beads of sweat on the skin evaporate resulting in a loss of body fluid.

During a strenuous session it is possible to lose an average of 1kg of water (4 cup fulls) that should be replaced. It is important to remember that thirst is not always a dependable indicator of the need for fluids and Martial Artists should make it a habit to drink water frequently before, during and after their work out.

However it is also possible to over-drink during exercise, get to know your bodies needs as everyone is different. Over hydration can cause a dilution of blood sodium levels. Symptoms include headaches, disorientation, coma, even death although this is extremely rare.

It is important to mention the fact that caffeine and carbonated drinks cause a loss of fluids and therefore should be consumed moderately, especially before training.

Alcoholic drinks should be avoided at all cost during exercise.

Dehydration during performance.

As dehydration increases there is a gradual reduction in physical and mental performance.

This can be dangerous as a fluid loss equal to or greater than 2% of your body weight increases the risk of nausea, vomiting, diarrhoea and other gastro-intestinal problems during exercise. You may end up feeling bloated or sick if you delay fluid replacement.
Vitamins in Sports Nutrition.

Vitamins are compounds which are essential to our metabolism. Our body cannot produce vitamins therefore we must consume them as part of our diet.

Martial Artists, naturally have a higher need for vitamins because of their increased metabolism (especially B vitamins).

The rule of thumb for consuming vitamins is; the least processed the better. Some Martial Artists will need to complete their vitamin intake through vitamin supplements.

However vitamins do have an upper limit restriction which can be reached through misuse of supplements.

What each Vitamin does and its benefits is a nightmare to try to categorize however below is a general rule of thumb for the benefits of the more well known vitamins:

**Vitamin A**

- keeps your eyes healthy
- helps to strengthen your immune system
- aids in battling infections of your respiratory system
- protects the outer lining of your tissues and organs
- encourages healthy bone growth
- advances healthy gums and teeth
- essential for normal reproduction
- aids cells in dividing the way they should
- fosters healthy skin and hair
**Vitamin D**

- called the "Sunshine Vitamin"
- your body can produce Vitamin D after exposure to the sun
- necessary for the processing of calcium and phosphorus in the body
- critical for the absorption of calcium in the small intestine
- vital for preventing bone loss
- helps prevent softening of the bones
- promotes regular muscle function
- minimize symptoms of arthritis by helping to keep joint cartilage healthy
- decrease risk of atherosclerosis or calcium building up in your arteries

**Vitamin E**

- powerful antioxidant that neutralizes or destroys free radicals that damage cell membranes
- associated with decreased risk of heart attack
- may help keep plaque from sticking to arterial walls
- linked to higher scores on cognitive tests
- associated with the slowing of Alzheimer's and other forms of dementia

**Vitamin K**

- aids the body in clotting blood when bleeding
- necessary in helping your bones use calcium
- helps lessen bone fractures
- might minimize the formation of kidney stones
**Vitamin B1 (Thiamine)**

- aids the body in converting carbohydrates into glucose - necessary for energy
- required for the metabolism of protein and fats
- sustains muscle tone of the digestive tract
- necessary for healthy eyes, hair, skin, liver and nervous system
- helpful in reducing stress
- supports a healthy immune system
- insufficient levels may advance congestive heart failure

**Vitamin B2 (Riboflavin)**

- aids the body in converting carbohydrates into glucose - necessary for energy
- required for the metabolism of protein and fats
- known as an antioxidant - neutralizes free radicals in the body that can damage cell walls
- helps in maintaining good vision

**Vitamin B3 (Niacin)**

- aids the body in converting carbohydrates into glucose - necessary for energy
- sustains muscle tone of the digestive tract
- necessary for healthy eyes, hair, skin, liver and nervous system
- helpful in reducing stress
- helps in maintaining good vision
- may boost circulation
- might help to whittle down your cholesterol number
**Vitamin B5 (Pantothenic Acid)**

- aids the body in converting carbohydrates and fats into glucose - necessary for energy
- sustains muscle tone of the digestive tract
- necessary for healthy eyes
- hair, skin, liver and nervous system
- helpful in reducing stress
- crucial to the production of red blood cells
- assists your body in utilizing other vitamins more efficiently

**Vitamin B6 (Pyridoxine)**

- aids the body in converting carbohydrates into glucose - necessary for energy
- required for the breakdown of protein and fats
- necessary for a healthy brain
- keeps muscle and nerve cells in good health
- assists your body in the manufacture of RNA and DNA
- boosts the immune system and the production of stress fighting hormones
- crucial to the production of red blood cells
- one of the vitamins necessary in lowering levels of homocysteine in the blood - high levels of homocysteine is thought to be related to heart disease and stroke
Vitamin B9 (Folic Acid)

- aids the body in converting carbohydrates into glucose - necessary for energy
- required for the metabolism of protein and fats
- sustains muscle tone of the digestive tract - necessary for healthy eyes, hair, skin, liver and nervous system
- helps your brain function properly
- assists your body in the manufacture of genetic material - RNA and DNA
- crucial to the production of red blood cells
- helps your body utilize iron more effectively
- decreases the risk of neural tube defects for your baby during pregnancy
- may cut your risk for heart disease and high cholesterol levels
- along with other B vitamins - necessary in lowering levels of homocysteine in the blood - high levels of homocysteine is thought to be related to heart disease and stroke.

Vitamin B12 (Cobalamin)

- aids the body in converting carbohydrates into glucose - necessary for energy
- assists your body in the manufacture of genetic material - RNA and DNA
- boosts the immune system and the production of stress fighting hormones
- crucial to the production of red blood cells, helps your body utilize iron more effectively
- helps to regulate your mood
- along with other B vitamins - necessary in lowering levels of homocysteine in the blood - high levels of homocysteine is thought to be related to heart disease and stroke.

Before starting out on a supplement program of any sort it's always best to consult a qualified Sports Dietician or Medical Professional.
Vitamin C

- vital to enable your tissues to grow and repair
- crucial in your body's production of collagen
- critical in the healing of injuries
- known as an antioxidant - neutralizes free radicals in the body that can damage cell walls and genetic material
- may help to lower high blood pressure
- insufficient levels have been linked to high blood pressure, atherosclerosis and heart disease
- along with other antioxidants, thought to guard your eyes against macular degeneration.

Before starting out on a serious supplement program of any sort its always best to consult a qualified Sports Dietician or Medical Professional.

The old sayings “moderation in everything” and “you are what you eat” have a lot going for them. It can be easy to get carried away when taking substances to enhance your training.

**On that note i would NEVER recommend taking ANY kind of banned or illegal substances, in my opinion its just a form of cheating and also extremely dangerous.**

Any change in your diet that can increase your health and aid in your fitness has to be a good thing. It can be very beneficial to look carefully at what you are eating and remember Bruce Lee’s words at the start of this chapter.

To finish i would like to wish you every success in your Martial Arts training and hope that you found this thesis as enjoyable to read as i did to write.

Remember the views expressed are 100% my own and i respect that not everyone will agree with me and will maybe have a different opinion. I’m totally OK with that and should anyone want to discuss any points in this thesis please feel free to get in touch.

Life is a learning curve for us all.

With respect,

Master Clive Harrison, 7th Degree