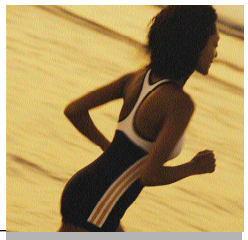

LIFESOFT

Immunity and the Athlete

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To realise potential, it is vital that an athlete has the ability to train consistently. Successful training, over time, builds a stronger, faster, more efficient body which will hopefully go on to produce optimum athletic performances. Time lost due to ill health, is time that a competitive athlete cannot afford to lose. In the long term the athlete and his/her coach needs to be conscientious about their own 'care' and acknowledge that they have a responsibility for the training and nutrition factors within their control, both of which can influence success or failure.

Illness can have profound effects on an athletes mental perspective, causing loss of rythym and habit. Once recovered the athlete may need to mentally regain focus. Maintaining a healthy immune system is therefore a considerable factor in the athletes pursuit of success.

Moderate exercise has been demonstrated to have beneficial effects on the immune system, reducing the risk of colds and chest infections. However for the competitive athlete who trains at a greater intensity and for longer durations, intensive exercise has the potential to cause immune suppression, with a recognised window of lowered post exercise immunity existing where the athletes system is vulnerable to infection (Nieman 2003).

Post-exercise immune suppression is thought to be partly due to the increase in production of stress hormones such as cortisol and adrenaline. Athletes training or competing in a carbohydrate-depleted state, will experience a greater increase in these hormones. It is therefore suggested that the ingestion of 30-60g carbohydrate per hour by athletes, during intensive exercise can create a reduction in stress and immune markers. (Gleeson et al 2004)

Reduction in immune status also occurs when an athlete has compromised glycogen and fat stores. This can be caused by the ineffective replacement of calories after exercise, or a conscious avoidance of fat. Calorific expenditure should therefore be balanced by an equivalent intake of calories, and the consumption of essential fats become more commonplace. When the diet shows signs of nutrient deficiencies, supplementation should be utilised to provide protection. However care should be taken not to overcompensate and the diet should always be viewed as the main provider of nutrients. (Venkatraman et al 2002)

Training alone is not responsible for the suppression of the immune system. Neiman identifies many factors that can contribute and should be considered. "*The infection risk is amplified when other factors related to immune function are present, including exposure to novel pathogens during travel, lack of sleep, severe mental stress, malnutrition, or weight loss.*". To enable an athlete to compete and train effectively throughout the year areas which must be acknowledged are:

- Diet
- Training and competition
- Family/relationships
- Work
- Travel
- Rest

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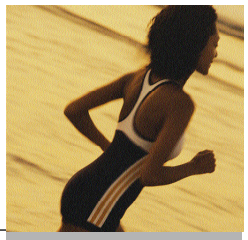

LIFESTYLE

Boost immunity and train consistently

Optimum nutrition, should be the fundamental consistent factor for any athlete. When training schedules are planned, time should always be taken to plan an appropriate dietary programme. This should be specific to the individuals training and competition requirements. Revisions in training intensity, increases or decreases, should always merit revisions to the diet.

DIETARY RULES

Fats

Saturated fats and trans/hydrogenated fats are not essential to the body and should be avoided as they suppress immunity and inhibit the function of essential fats. However the essential fats Omega 3, 6 and 9 are vital for the athlete as they enhance cell membrane integrity, increasing metabolism and immunity.

AVOID: Margarine (hydrogenated fats)
Processed foods and foods high in saturated fats

INCREASE: Nuts - brazil, almond, walnut
Seeds and their oils - pumpkin, sunflower, sesame, hemp, flax
Oily fish - Mackerel, herring etc

Carbohydrates

Refined carbohydrates (white rice and bread) should be substituted for whole grains ie. wholemeal bread and brown rice, both for their nutrient and fibre content. Large amounts of refined sugar should be avoided due to its immune suppression potential.

Fruit and vegetable intake should be around 7-10 portions per day. Organic produce is preferable and when possible vegetables should be consumed raw to increase vitamin., phyto-chemicals and enzyme content.

Protein

Vegetarian athletes should ensure they are consistently taking in high quality protein (see below). When the athlete is not vegetarian, the increase/inclusion of vegetarian protein would be beneficial.

INCLUDE MORE: Beans, pulses, tofu and quinoa, cheese (goats), eggs (with 3's)

AVOID: Proteins high in saturated fats, red meats and processed meats ie. burgers and sausages

GENERAL RULES

Stress

Athletes need to acknowledge stress and the role it can play in performance and immunity. Priorities must to be identified, taking into consideration all other life factors (see previous page). Realistic, attainable goals can then be created, enabling the athlete to train and compete whilst keeping stress levels to a minimum.

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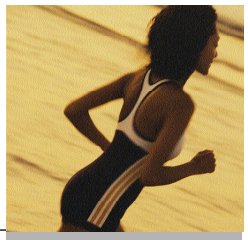

LIFESTYLE

Pulse test

To check for over training/infection – this should be done every morning before rising.

Take the pulse. A rise of 8 beats or above from the average for the preceding week, would signal that athlete should reduce training.

Sleep

Quality sleep is essential. HGH (Human Growth Hormone) is produced during sleep, which aids repair. If training is intense it may be beneficial for the athlete to take an afternoon nap

Factors which suppress or inhibit immunity

- High intake of dietary fats (saturated and trans fats)
- Intake of excess refined carbohydrates (including sugar)
- Compromised glycogen and fuel depletion (test glycogen capacity)
- Training >90 minutes
- Over training
- Weight loss
- Stress
- Lack of sleep
- Deficiency of dietary protein
- Deficiency of vitamins A, C, E, B6 and B12 and the minerals iron, zinc, selenium and copper

Reading

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Patricia trained as a Clinical Nutritionist at the acclaimed Institute For Optimum Nutrition in London. Her main clinic is now in Southport, Merseyside where she consults with individuals regarding their health and wellbeing. Her other clinics are across the North West of England, situated in Liverpool, Merseyside and Blackburn, Lancashire. She also works alongside companies dealing with employee health and regularly gives talks to organisations about health and nutrition.

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