THE TASTE OF TECHNOLOGY

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RECOVERY DRINK

Key Ingredients

Hydrolysed wheat protein containing high levels of peptide bound glutamine. Hydrolysed whey protein containing high levels of the branched chain amino acids l-leucine, l-isoleucine and l-valine.

Main Benefits

- Stimulation of glycogen recovery.
- Reduces fatigue.
- Improved functioning of the immune system.

How Does it Work?

Fatigue

The amino acid tryptophan is used by the brain as a starting point for the synthesises of a neurotransmitter called 5-hydroxytryptamine (5-HT). An increase in the level of 5-HT in the brain is known to cause tiredness, improve the quality of sleep and to decrease aggression. Both tryptophan and branched chain amino acids (BCAA'S) enter the brain through the same carrier system and so may compete with one another.

In prolonged exercise the level of BCAA in the blood may fall since they are taken up by muscle as fuel. In addition, increased fatty acid production will lead to an increase in the plasma level of free tryptophan. Hence the ratio free tryptophan/BCAA may increase leading to a higher level of tryptophan and therefore a higher level of 5-HT in the brain. The tiredness associated with this may effect athletes undertaking prolonged forms of exercise such as cycling, soccer, football, tennis, squash, boxing, distance running etc.

Consumption of drinks rich in BCAA'S should restore vigour to athletes whose performance is being depressed by an excess of cerebral 5-HT.

Improved Functioning of the Immune System

Glutamine is an amino acid that is normally considered as non-essential, meaning that it can be synthesised according to body requirements. The muscle is the major source of glutamine. Lung and brain cells are regular glutamine producers, whereas cells from the gut, kidney and immune system are regular consumers. During stress the muscle concentration decreases sharply, with the immune and gut cells using more glutamine. Plasma glutamine levels may drop below critical levels, resulting in a situation of imbalance and increased vulnerability to infections. In this condition extra glutamine is required and is why glutamine is

called a conditionally essential amino acid.

Stimulation of Glycogen Recovery

Endurance exercise decreases plasma glutamine levels, suggesting that the muscle cannot provide enough glutamine. Glycogen storage occurs considerably faster when athletes consume protein together with carbohydrates as compared with carbohydrates alone. The responsible agent for this faster glycogen recovery may be glutamine, as can be inferred from a trial comparing the muscle glycogen stores of three different cycling groups receiving either glutamine, alanine + glycine, or saline after depletion of muscle glycogen stores during exercise. Two hours after exercise the increase in muscle glycogen levels were about three times higher in the glutamine group as compared to the other two test groups.

Benefits of Using Protein in the Hydrolysed Form

There are three forms of protein: intact protein, hydrolysed, and free form amino acids. Hydrolysed are the most effective because the gut cell preferentially absorbs amino acids in the peptide bonded form(present at high levels in hydrolysed protein), rather than free form amino acids.