L-Glutamine
L-Glutamine acts as an inter-organ nitrogen and carbon transporter essential for the maintenance of intestinal function, immune response and amino acid homeostasis under severe stress. It is also an important metabolic fuel for lymphocytes, macrophages, fibroblasts and small intestine enterocytes. It is a precursor of other amino acids and promotes carbohydrate storage after exhaustive exercise. Biochemically, it plays a major role in protein synthesis, regulates the acid-base balance in the kidney by producing ammonium(1), it acts as a cellular energy source with glucose(2), it is a nitrogen donor for many anabolic processes(3) and is a source of carbon, refilling the citric acid cycle.(4)

Research has shown that L-Glutamine may be indicated for a number of conditions including mental disorders, gastrointestinal disorders, enhancing exercise performance and for HIV patients with regard to wasting and abnormal intestinal permeability. It has also shown to be effective for sickle cell anemia, bone marrow transplant, alcohol withdrawal support and chemotherapy induced mucositis.

L-Arginine
Arginine is an essential amino acid with a number of functions. It stimulates the release of growth hormone and prolactin; stimulates the release of glucagon and insulin; increases gastrin concentration and inhibits tubular reabsorption of protein(5). L-Arginine is the precursor for the production of nitric oxide, the body's natural vasodilator (6), Biochemically, it plays a major role in protein synthesis, regulates the acid-base balance in the kidney by producing ammonium(7), it acts as a cellular energy source with glucose(8), it is a nitrogen donor for many anabolic processes(9) and is a source of carbon, refilling the citric acid cycle.(10)

L-Arginine has been indicated for interstitial cystitis, healing. As an aid for athletic performance, it stimulates the release of growth hormone and increases muscle mass.(11) L-Arginine has been indicated for interstitial cystitis, reduces body fat, improves insulin sensitivity and decreases blood pressure(12). It is indicated as an aid to reproduction because it improves sperm production and motility and increases blood circulation throughout the body, including the sex organs.

DL-Phenylalanine (DLPA)
DL-Phenylalanine (DLPA) has demonstrated analgesic and antidepressant activities. The analgesic activity of DLPA may be explained by D-Phenylalanine's possible blockade of enkephalin degradation by the enzyme carboxypeptidase A.(13) The mechanism of DLPA’s antidepressant activity may be attributed to its role as a precursor of L-phenylalanine in the synthesis of the neurotransmitters, norepinephrine and dopamine. Elevated brain levels of norepinephrine and dopamine are thought to have an antidepressant effect.

DLPA has also been used to treat vitiligo when combined with UV exposure and has also been used to lower the severity of Tay Sachs disease.

L-Lysine
L-Lysine has been used for the prevention and treatment of herpes simplex infections(14,15). Required for collagen synthesis, L-Lysine may also be effective for bone health and athletic performance.

L-Carnitine HCl
L-Carnitine is a vitamin-like compound critical to the transport of fatty acids into the mitochondria for energy production. The majority of research has concentrated on its uses for various cardiovascular diseases, enhancing physical performance, kidney disease and Alzheimer’s disease and age-related senility. Carnitine is available in several forms but L-Carnitine (base) is the best-studied form of this compound. Its effects on bone mass have been studied with favourable results. Carnitine concentration in cells diminishes with age and affects fatty acid metabolism in various tissues. Particularly affected (adversely) are bones which require the continuous reconstructive and metabolic functions of osteoblasts for maintenance of bone mass. There is a close correlation between osteoblast activity and osteocalcin plasma levels. Carnitine has been shown to increase serum osteocalcin concentrations and thereby osteoblast activity.(16)

Also L-Carnitine exerts a substantial antioxidant action and provides a protective effect against lipid peroxidation of phospholipid membranes and against oxidative stress induced at the myocardial and endothelial cell level.(17)

For diabetes, one study showed L-Carnitine improved glucose disposal among 15 patients with type II diabetes and 20 healthy volunteers. Glucose storage increased between both groups, but glucose oxidation increased only in the diabetic group. Finally, glucose uptake increased about 8% for both.

L-Tyrosine
L-Tyrosine is an important amino acid for general metabolism and is a precursor for and increases the neurotransmitter levels of the catecholamines dopamine, epinephrine, and norepinephrine. L-Tyrosine and iodine combine to form thyroid hormones.

A number of studies have found tyrosine to be useful during conditions of stress, cold, fatigue,(18) prolonged work and sleep deprivation,(19) with reductions in stress hormone levels,(20) reductions in stress-induced weight loss seen in animal trials,(21) and improvements in cognitive and physical performance seen in human trials. (22)
Amino Acids

L-Taurine
L-Taurine is an amino acid essential to cardiac and eye function. It is reported to modulate cardiac activity, possibly by stabilizing the cell membrane through negative ion transport. It has also been shown to have an inotropic effect on the heart. Studies suggest that taurine is needed for proper maintenance and functioning of skeletal muscles. Additionally, it has been shown to be effective in removing fatty liver deposits, preventing liver disease, and reducing cirrhosis. There is also evidence that taurine is beneficial for blood pressure and possibly, the alleviation of other cardiovascular ailments (for hypertension, taurine supplementation resulted in measurable decreases in blood pressure).

References
22. McCall, Becky. The ultimate hangover cure?. 2005-12-28

Our Company
Integra Nutrition Inc. is the exclusive distributor of Alpha Science products. We have been servicing the health care professional since 1997. Our mission is to provide products of uncompromising quality with unquestionable integrity.

Alpha Science is a pharmaceutical licensed manufacturer and is an NHPD (National Health Products Directorate) site licensed facility and as such has to meet the highest standards set out by governmental health agencies. This includes meeting the requirements of Good Manufacturing Practices (GMP).

Further, Alpha Science also meets the highest standards set out by our natural health care clientele. All our products are 100% natural and contain no additives. Our products are regularly assayed for heavy metal contamination and a complete certificate of analysis verifies the purity and content of each ingredient.