



GLUTAMINE

What is it?

Glutamine is a non-essential amino acid found abundantly in the muscle cells and blood. It can be made in the muscle cells from other amino acids (glutamic acid, valine and isoleucine).

What does it do?

Glutamine is needed for cell growth, as well as serving as a fuel for the immune system. During periods of heavy training or stress, blood levels of glutamine fall, weakening your immune system and putting you at risk of infection. Muscle levels of glutamine also fall, which result in a loss of muscle tissue, despite continued training.

Do you need it?

Manufacturers claim that glutamine has a protein-sparing effect during intense training. But the evidence for glutamine is divided. Some studies have shown that taking supplements of glutamine immediately after heavy training or a competitive event, such as a marathon, can help you recover more quickly, reduce muscle soreness, and cut your risk of catching colds and

other infections. Others have failed to show any benefits. Canadian researchers found glutamine produced no increase in strength or muscle mass compared with a placebo. Studies have used doses of around 100 mg glutamine per kg of body weight during the 2 hours following a strenuous workout or competition. That's equivalent to a 7 g dose in a 70 kg athlete. But that doesn't mean you will get any benefit. Many protein and meal replacement supplements contain glutamine.

Are there any side effects?

No side effects have been found so far.

More about glutamine

The interest in glutamine stems from the observation that after intense prolonged exercise or during periods of heavy training, blood and muscle glutamine levels tend to fall quite dramatically. There is also a drop in the activity of immune cells, making athletes more susceptible to infection during this time. In other words, without adequate fuel (glutamine), immune cell activity is impaired.

The idea behind glutamine supplementation is that it will prevent the post-exercise drop in glutamine levels and maintain the immune system. Theoretically, glutamine may also prevent the muscle breakdown normally associated with hard training. That's because it helps draw water into the muscle cells, increasing the cell volume. This inhibits enzymes from breaking down muscle proteins and also counteracts the effects of stress hormones, such as cortisol, which are increased after intense exercise.

Studies at Oxford University with marathon runners and ultra-marathon runners have shown that glutamine supplements taken immediately after running and again 2 hours later appeared to