BETA ALANINE

What is Beta Alanine?

Beta-alanine (β-Alanine) is a water-soluble non-essential amino acid. It is found in high levels in animal protein rich foods, such as beef, pork or fish. A small amount is also synthesized in the liver.

How does Beta Alanine work?

β-Alanine is transported into muscle cells where it combines with histidine to form carnosine. Carnosine acts as an intracellular buffer and helps to maintain the optimal pH of working muscles by preventing acidosis resulting from H+ buildup. Carnosine content in muscles is influenced by β-Alanine availability and will increase with chronic supplementation. Increases in muscle carnosine content will increase the buffering capacity of muscles.

Potential performance benefits?

Multiple studies have shown supplementing with β-Alanine can improve performance; particularly those performances which rely on the anaerobic energy system. β-Alanine has been associated with:

- Increased peak power
- Increased time to exhaustion through buffering excess H+ produced during high intensity exercise
- Improved performance in repeated bouts of high intensity exercise

The impact of β-Alanine on team sport performances is less clear.

How do I take Beta Alanine?

As with any supplement, you must first ensure you are using a tested source of β-alanine. It must be taken for a minimum of 6-8 weeks. Studies have shown that supplementation with β-alanine will increase muscle carnosine content by ~60% after 4 weeks and ~80% after 8 - 10 weeks of supplementation.

Phase 1: Loading. Take 1.6g of β-Alanine **twice** per day with food, initially leaving a gap between each dose. After a few days, you may be able to combine these doses to take only once per day, but some individuals find this enhances the tingling (see below). Continue to do this each day for 4 weeks.

Phase 2: Maintenance: Take 1.6g of β-Alanine **once** per day. Continue this for the remaining 4 weeks.

β-alanine is not generally a year-round supplement. It is most commonly used strategically 8 weeks out from competition. Once β-alanine supplementation is stopped, levels will return to baseline.

Are there any side effects or health risks?

The main side effect seen with β-alanine supplementation is paresethia, a temporary tingling sensation under the skin resulting from excess β-alanine binding to nerve cells. β-alanine supplementation may also cause flushing of the skin. These side effects can be minimized by following the loading phase protocol of dividing the dosage throughout the day and by taking the supplement with food. The tingling generally stops shortly after taking the supplement and is not considered to be harmful to health.

**Please speak with your Sports Dietitian for further information**