BRANCHED CHAIN AMINO ACIDS

What are Branched Chain Amino Acids?
Protein is comprised of 20 building blocks known as amino acids. 9 of these building blocks are essential amino acids meaning that we cannot make them in our body and we must consume them through the diet. Of these 9 essential amino acids, leucine, isoleucine and valine are known collectively as Branched Chain Amino Acids (BCAAs). They are called such due to a branch on their carbon side chain. They make-up about 1/3 of the protein content in muscles and in periods of energy deprivation, can act as fuel for the muscles.

How do BCAAs work?
As a component of protein, BCAAs have been associated with improvements in performance in many ways including
- Simulating muscle protein synthesis
- Preventing muscle protein breakdown
- Acting as a fuel source during exercise
- Reducing feelings of fatigue
It is unlikely that these improvements will be seen in individuals who are consuming adequate protein and adequate calories in the diet.

Potential performance benefits?
As mentioned above, BCAAs are a component of protein. In instances where athletes are sufficiently meeting their protein requirements, there is little evidence to support benefits of additional BCAA supplementation. There are a number of instances where BCAA supplementation may be beneficial:
- To reduce loss of muscle protein during injury or where an athlete is eating less protein overall therefore not meeting BCAA requirements
- Similarly, when an athlete is undergoing a period of caloric restriction, BCAA supplementation may be used to support muscle protein synthesis and reduction in breakdown where overall protein intake is insufficient
- Where an athlete cannot tolerate / get access to protein foods or drinks in recovery from training
- Where an athlete is following a vegetarian / vegan diet which restricts the intake of BCAAs, supplementary BCAAs can be used to improve the amino acids profile of plant based proteins

How do I take BCAAs?
Athletes should only invest in BCAAs under direction from a sport dietitian or physician. Should you be advised to take BCAAs, evidence is emerging to support specific intakes of one particular BCAA, leucine. The BCAA supplement should be taken to allow the intake of 2.5 – 3g of leucine to mimic protein feeding throughout the day. BCAAs are an expensive supplement and if you are consuming sufficient protein, it is most likely that your body will break down BCAAs and excrete them from the body.

Are there any side effects or health risks?
There are currently no known side effects or health risks when taking BCAAs

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