CAFFEINE

What is caffeine?

Caffeine is a stimulant that is commonly used by athletes due to its effects on improving performance. Positive effects have been well documented in endurance events, intermittent sport events and sports that require a sustained high intensity effort for 1 – 60 minutes e.g. swimming, running. It is commonly found in tea, coffee, colas and chocolate.

How does caffeine work?

Caffeine is thought to have a number of different effects within the body:

1. Reduction in fatigue and perception of effort
2. Reduction in pain perception
3. Increased force output for a given neural stimulation – i.e. more power for less work
4. Increased muscle contractility
5. May have a positive effect on mental focus, concentration, and recalling information

Potential performance benefits

Caffeine has been shown to have a performance enhancing effect in endurance exercise, high intensity exercise and skill based sports. The direct effect of caffeine on single events involving strength and power (e.g. lifts, throws and sprints) are unclear. Caffeine will enhance performance by

1. Improving reaction time, alertness, visual information processing
2. Improving focus and recalling technical skills
3. Recuing Rate of Perceived Exertion i.e. How difficult an athlete finds an effort

How do I take caffeine?

Carbonated caffeine drinks are not ideal sources of caffeine for use as ergogenic aids due to the variability and unpredictability of their caffeine content. A pure caffeine source is the best option (e.g. caffeine tablet, gel or gum) where the supplier is reputable and guarantees certain caffeine content. If a tested source is not available to you, an espresso shot is an option. A single espresso shot contains approximately 60 - 80mg of caffeine.

Caffeine doses are dependant on individual sensitivity, habitual intake, and body weight. It is very important to trial caffeine numerous times before using it for competition in order to perfect the individual dose:

• The performance effects of caffeine are apparent at 1-4mgs of caffeine per kg body mass starting at the lowest end of the range for the initial trial
• This dose should be taken at least 45 minutes prior to the first trial as it takes this long to work its way into the bloodstream
• After this you may reduce/increase the dose depending on how you reacted to the caffeine. It is advisable to consult your UBC Sport Dietitian for further guidance

Once perfected, this dose can then be used for competition – not routinely in training. For those competing in multiple heats in a day, it is advisable to consult your UBC Sport Dietitian for further guidance.

Note: The effects of caffeine will generally last for 3-5 hours after ingestion – please consider the effect of this on sleep if you choose to take caffeine
Are there any side effects or health risks?

Small doses of caffeine are generally safe for healthy adults to consume, hence the widespread social use of caffeine. However excessively high doses (>9mg/kg) can have negative side effects including: increased heart rate, insomnia, headaches, impairments to fine motor control alertness and reaction time, muscle tremors and gastrointestinal irritation.

Individual response

Those who already take a lot of caffeine may not benefit from caffeine supplementation or may require doses towards the higher end of the range. This is because frequent high-dose caffeine intake is thought to reduce sensitivity to caffeine. Caffeine may also not be suitable for some athletes due to certain side effects, for example, if it makes you feel sick or shaky, or interferes significantly with sleep.

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