Caffeine & Performance in the Operational Environment

Did You Know?

- Caffeine is the most widely used psychoactive substance in the world.
- 82% of active-duty U.S. Army Soldiers use caffeine daily.
- Caffeine can improve vigilance by 20-35%, reaction time by up to 70%, marksmanship by 25-30%, and other aspects of performance when used at appropriate dosages.
- The source of caffeine can impact performance. For example, caffeine gum improves performance faster during sleep loss than a caffeinated beverage due to its faster absorption rate.

Taking caffeine in the right amount at the right time enhances warfighter performance.

Caffeine Dosing Guidance

- Some benefits will occur at low doses (LOW: 50 MG)
- Effective dose for non-habitual users for performance (200 MG)
- Higher doses may be required in habitual users for performance (300-400 MG)
- Negative physical, cognitive, and emotional effects are observed (600 MG)
- Very high doses of caffeine are lethal (> 5000 MG)

Caffeine effects may vary based on individual sensitivity, level of sleep, and level of use for both caffeine and substances that interact with caffeine. Chronic caffeine use can lead to increased tolerance and reduced effectiveness.

How much caffeine do you consume?

- 5-hour Energy Shot: 200mg/2oz
- Strong Brewed Coffee: 175mg/8oz
- Monster Energy Drink: 160mg/16oz
- Espresso: 150mg/2oz
- Military Energy Gum: 100mg/piece
- Rip It Energy Shot: 100mg/2oz
- Weak Brewed Coffee: 100mg/8oz
- Black Tea: 53mg/8oz
- Soft Drink: 37mg/8oz
- Green Tea: 28mg/8oz
Sleep & Performance

- To derive maximum benefits while avoiding side effects of caffeine, take 200mg of caffeine every 6 hours upon waking/start of shift.
- When possible, avoid using caffeine 6 hours prior to bedtime.
- Save caffeine use for during operations to reach full effectiveness.

2B-Alert Algorithm

The 2B-Alert algorithm predicts performance based on sleep-wake patterns, time-of-day, and dose and source of caffeine. The tool also can provide caffeine dosing recommendations to optimize performance during a pre-specified time period in the future.

https://2b-alert-web.bhsai.org