

## ***GNYACSM Original Research Abstract***

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### **Jumping for Joy... or Not? Examining the Effects of NCAA-Regulated Caffeine Dose on Vertical Jump Performance**

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#### **ABSTRACT**

Caffeine is a popular ergogenic aid, potentially enhancing performance in high-intensity power movements like jumping. The World Anti-Doping Agency (WADA) removed caffeine from its banned list, but the National Collegiate Athletic Association (NCAA) restricts caffeine intake (5 mg/kg). Past research has examined the effects of caffeine supplementation on vertical jumping performance, which comprises a reliable physical fitness test. Studies, however, have reported mixed results. **PURPOSE:** This study examined the effects of caffeine at the NCAA limit on vertical jump performance in real-world training conditions. **METHODS:** Forty collegiate Division II athletes (Male = 22) from sports like basketball, volleyball, soccer, tennis, cross country, and softball during real-life training conditions participated in a single-blind, randomized, crossover design. They consumed either caffeine (5 mg/kg) or placebo, followed by 60-minute waiting period and a standardized warm-up. Three squat (SJ) and 3 countermovement jumps (CMJ) were performed on a Noraxon AMTI force platform. Jump height (m) was calculated using the flight time method. The average of the 3 respective jumps was used for statistical analysis. Normality of the data was evaluated by Kolmogorov-Smirnov and a paired t-test in Jamovi vs 2.4.14 ( $p < .05$ ) was used to compare the differences in SJ and CMJ between placebo and caffeine conditions. **RESULTS:** In comparison with placebo ( $\mu_{\text{placebo}} - \mu_{\text{caffeine}} \neq 0$ ), caffeine consumption did not improve SJ ( $t_{39} = -.32$ ,  $p = .75$ ,  $\mu_{\text{diff}} = -.01$  95%CI [-.01, .01],  $d = -.05$ , 95%CI [-.36, .26]) nor CMJ ( $t_{39} = -1.32$ ,  $p = .20$ ,  $\mu_{\text{diff}} = -.01$  95%CI [-.02, .00],  $d = -.21$ , 95%CI [-.52, .11]) vertical jump performance. **CONCLUSION:** Consuming caffeine at the NCAA limit did not enhance vertical jump performance in a large sample of Division II athletes during real-life training. These findings may inform the NCAA to consider revising its caffeine regulations to align with evidence-based WADA guidelines.