



TAKE TEN

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SHAREABLE RESOURCE

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Ten Common Questions and Misconceptions About Creatine, Caffeine, and Protein

1 CREATINE IS NOT AN ANABOLIC STEROID. Creatine and anabolic steroids are about as similar as an apple to a steak. Creatine is converted to phosphocreatine in muscles, boosting adenosine triphosphate production and enhancing performance during anaerobic exercise. Anabolic steroids are controlled substances, whereas creatine is regulated as a dietary supplement under the Dietary Supplement Health and Education Act of 1994.

2 CREATINE SUPPLEMENTATION DOES NOT CAUSE DEHYDRATION OR MUSCLE CRAMPING. Speculation has suggested that creatine supplementation may cause dehydration and muscle cramping, based on the idea that creatine, being osmotically active, increases intracellular water retention, potentially disrupting whole-body fluid balance. Studies, such as one involving National Collegiate Athletic Association football players, found that creatine users had significantly fewer cases of cramping, dehydration, and other injuries compared to nonusers.

3 CREATINE SUPPLEMENTATION APPEARS TO BE GENERALLY SAFE AND POTENTIALLY BENEFICIAL FOR CHILDREN AND ADOLESCENTS. Data on teenage athletes show a benefit from creatine supplementation. Clinical trials also have shown benefits, such as improved outcomes in pediatric patients with systemic lupus erythematosus and Duchenne muscular dystrophy, without negatively impacting kidney function, inflammation, or liver health. The US Food and Drug Administration's 2020 classification of creatine as "generally recognized as safe" reinforces its safety for older children and adolescents.

4 CREATINE IS BENEFICIAL FOR OLDER ADULTS. Creatine supplementation can improve strength and daily functionality and delay fatigue in older adults, but it is unlikely to significantly increase muscle strength or performance without resistance training. Studies show that creatine alone, without exercise, has minimal impact on lean mass and muscle strength, although it may reduce muscle fatigue.

5 CAFFEINE DOES NOT DEHYDRATE YOU DURING EXERCISE. Factors such as sweat rate, fluid replacement, and genetics have a more significant impact on one's hydration level compared to moderate caffeine consumption alone. Recent studies that account for various influencing factors have shown that moderate daily caffeine intake (around 3 mg·kg⁻¹ or 250–300 mg), which is above the US average, does not increase urine output in habitual drinkers.

6 WAITING AFTER WAKING TO CONSUME CAFFEINE DOES NOT HELP YOU AVOID THE AFTERNOON "CRASH." There has been a trend on social media recommending delaying coffee intake by 30 to 120 minutes after waking to avoid prolonging the cortisol peak,

preventing afternoon crashes, and allowing adenosine levels to drop. However, these claims are fabricated mainly because no randomized controlled trials indicate that this occurs. A significant flaw in the argument for delaying caffeine intake to avoid extending the cortisol peak is that high-intensity exercise performed soon after waking triggers the same cortisol response. Following this reasoning, one also would need to avoid morning exercise, which makes no sense.

7 DIETARY PROTEIN DOES NOT HARM YOUR KIDNEYS. Research shows athletes who consume high amounts of protein, often up to 1.9 g·kg⁻¹·day⁻¹, do not experience impaired kidney function. Studies also have demonstrated that even significantly higher protein intakes (3.2–4.4 g·kg⁻¹·day⁻¹) are well tolerated, with no adverse effects on kidney markers or overall health. Body composition improvements are primarily the result of caloric restriction coupled with a higher protein intake.

8 CONSUMING "EXCESS" PROTEIN DOES NOT NECESSARILY INCREASE BODY FAT MASS. Research shows that higher protein intake promotes favorable body composition changes, especially by preserving lean mass and increasing fat loss during calorie restriction. Studies on resistance-trained individuals consuming high protein levels (up to 4.4 g·kg⁻¹·day⁻¹) indicate no significant fat mass increase despite higher energy intake.

9 DIETARY PROTEIN IS NOT HARMFUL TO YOUR BONES. There is a misconception that high protein intakes negatively affect bone health, largely based on the acid-ash hypothesis. This theory suggests that a protein-rich diet leads to an acidic dietary load, increasing calcium excretion and potentially contributing to bone loss and osteoporosis. On the contrary, research shows that high-protein diets can benefit bone health by stimulating bone formation, improving muscle mass, and promoting stronger bones.

10 PEANUT BUTTER IS NOT A GOOD PROTEIN SOURCE. Many energy-dense foods, like cheese and peanut butter, are marketed incorrectly as good protein sources. Peanut butter is primarily comprised of fat calories. Peanut butter provides 7 g of protein per two-tablespoon serving, which may help your pet hamster, but not a human.

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