

# Creatine monohydrate powder to support athletic performance\*

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## WHAT IS CREATINE MONOHYDRATE?

Creatine monohydrate is a popular and extensively studied ergogenic supplement to help promote sports performance and muscle growth in athletes.\* Human physiology has a limited capacity for producing creatine on its own from the amino acids arginine, glycine, and methionine, making it important to obtain adequate amounts from food or supplementation. Dietary creatine can be found primarily in red meat and seafood. Additionally, between 1% and 2% of creatine in the muscle is metabolized and excreted through the urine. Therefore, the body requires between 1 and 3 grams of creatine per day to maintain normal creatine stores, dependent on an individual's muscle mass, and even more for muscle growth.<sup>1</sup> As a result, those who do not routinely consume creatine-rich foods have been shown to have lower serum creatine status.<sup>2</sup> Supplementation of creatine is an ideal choice for athletes, active older individuals, and vegans and vegetarians who do not consume adequate amounts of amino acids precursors or creatine-rich foods.\*

## FORMULA HIGHLIGHTS

- Offers 5 grams of micronized creatine per serving for improved digestibility and enhanced bioavailability to targeted muscle tissue
- Unflavored, unsweetened, and rapidly dissolving
- Convenient powder delivery for serving size flexibility
- Gluten-free, dairy-free, soy-free, vegan; non-GMO
- NSF Certified for Sport®

## CLINICAL EVIDENCE

### Creatine Supports Skeletal Muscle Strength\*

Creatine is one of the few ergogenic aids that effectively supports muscular adaptations to resistance training.<sup>3-5</sup> It has shown to be beneficial for promoting high-intensity exercise capacity and lean body mass during training.<sup>6</sup>

In a review of 16 randomized trials, creatine supplementation was shown in young, healthy adults to support muscle mass, strength, and sports performance.<sup>4</sup> While creatine loading is a method that is utilized to more effectively increase saturation in the muscles, it has been shown that muscle growth can still occur without this phase.<sup>4</sup> A meta-

analysis of 10 controlled studies concluded that individuals who combined creatine with resistance training exhibited a small, but significant, increase in both upper and lower body muscle mass compared to a placebo.<sup>3</sup> The effects appear to be more pronounced in younger adults (aged 21 to 26) compared to older adults (aged 59 to 72).<sup>3</sup> However, this is not to say that older adults may not benefit from creatine.\* For instance, a randomized controlled trial (RCT) study on 20 healthy men over the age of 59 found that just seven days of 0.3 g/kg/day of creatine supplementation led subjects to experience favorable effects on several measures of muscular performance, including maximum dynamic strength and muscle power, compared to the placebo group.<sup>5</sup>

In conjunction with a resistance training program, 28 days of creatine supplementation resulted in greater lean muscle mass, training volume, and sprint performance for NCAA Division I collegiate football players.<sup>6</sup> Several other studies in collegiate football players demonstrated significant improvements in bench press, squat scores, and overall strength gains, power, and anaerobic capacity compared to the placebo groups.<sup>6</sup> Evidence also shows that creatine supplementation can help enhance recovery and may help reduce muscle damage caused by intense exercise, supporting overall training performance.<sup>7</sup>



### Creatine Supports Power Output\*

Creatine is a compound that stores high-energy phosphate groups in the form of phosphocreatine, which provides a rapid energy source for adenosine triphosphate (ATP)

production in cells. This quick energy release supports athletic exertion by allowing muscles to generate more energy at one time, leading to increased power output.<sup>8-10</sup> An RCT involving 19 rugby players found that after supplementing with 0.1 g/kg/day of creatine monohydrate for eight weeks, those players exhibited notably improved bench press and leg press performance, along with a greater increase in repetition max (+5.8 reps) compared to the placebo group (+0.9 repetitions).<sup>9</sup> Additionally, an analysis of nine randomized, double blinded studies on female and male soccer players showed that subjects who were administered 20 to 30 g/day, ingested for six to seven days, and followed by 5 g/day for nine weeks or with a low dose of 3 mg/kg/day for 14 days of creatine supplementation displayed a positive effect on anaerobic performance, particularly in power output.<sup>10</sup>

### Creatine May Support Mental Acuity\*

Creatine is not only utilized in muscles but also plays a role in brain health.\* Sleep deprivation can negatively impact performance and cognition the following day, potentially due to reduced levels of creatine status that may affect ATP metabolism in the brain.<sup>11</sup> Supplementing with creatine may potentially help counteract this decline in cognitive function following substantial sleep deprivation.<sup>11</sup> Beyond sleep deprivation, creatine has been shown to help mitigate mental fatigue in healthy individuals tasked with repeated

calculations, possibly by supporting ATP production and helping reduce lactate buildup in the brain.<sup>12</sup>

### What is Micronized Creatine Monohydrate?

Micronized creatine is a powdered form of creatine monohydrate that utilizes a micronizing technology that reduces the particle size by 20 times. This process increases the surface area of the creatine for improved absorption and digestibility and enhanced bioavailability to targeted muscle tissue. Micronized creatine rapidly dissolves in liquid, and, due to its increased water solubility and digestibility, micronized creatine does not contribute to common undesirable side effects often associated with large doses of creatine monohydrate intake.<sup>13</sup>

### BENEFITS\*

- Supports healthy body composition and lean muscle mass<sup>3-5</sup>
- May support skeletal muscle growth and strength<sup>3-5</sup>
- May promote power output<sup>8-10</sup>
- May help support mental acuity and brain health<sup>11,12</sup>
- May support athletic performance and recovery<sup>6</sup>

### HOW TO TAKE

Mix one scoop (5 grams) in 8 to 10 ounces of water per day, or as directed by your health-care practitioner.



## Supplement Facts

Serving Size 5 grams (approx. one scoop)  
Servings Per Container 90

Amount Per Serving	% Daily Value
Creatine Monohydrate	5 g *

\*Daily Value not established.

**5 G CREATINE PER SCOOP**

**90 SERVINGS PER JAR**

**THIRD-PARTY TESTED**




 SOY-FREE

 GLUTEN-FREE

 DAIRY-FREE

 0 GRAMS SUGAR

 NON-GMO

 HIGHLY ABSORBABLE\*

\*These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent any disease.

# References

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