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Generative AI Series  
Research Assistant



Evidence-Based  
Answers, Faster



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Generative AI Series:

Research Assistant by  consensus



Consensus เป็น Generative AI ประเภท Research Assistant ที่จะเป็นผู้ช่วยค้นหาผลงานวิจัย จากการตั้งคำถาม ผ่านการเขียนคำสั่ง (Prompt) และหาข้อสรุปรวมถึงวิเคราะห์ผลจากการสืบค้น ซึ่งให้ข้อมูลงานวิจัยมากกว่า 200 ล้านรายการ โดยจะครอบคลุมเนื้อหาทางวิชาการตั้งแต่ผลงานวิจัยทางการแพทย์ วิทยาศาสตร์ สังคมและเศรษฐศาสตร์

Prompt คือ การเขียนข้อความหรือประโยคอธิบายสิ่งที่เราต้องการให้กับ AI algorithms เพื่อสร้างสิ่งนั้นขึ้นมา ยิ่งเขียนละเอียดเท่าไรก็ยิ่งออกมาชัดเจนใกล้เคียงกับสิ่งที่เราต้องการมากยิ่งขึ้น



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# How to search? consensus

Consensus uses AI to find answers in research papers. The best way to search is to ask a question.



## Ask about the relationship between concepts

Does spanking impact childhood development?

What predicts success as a startup founder?

Does creatine improve cognition?



## Ask a simple yes/no question

Can zinc supplementation treat depression?

Does morning sunlight improve mood?

Do home crowds impact referee bias?



## Ask about the effects of a concept

What are the effects of gratitude practice?

What are the mental health benefits of psychedelics?

What are the effects of drug decriminalization?

# What topics I can search for?



Focus on questions that researchers may have studied. Topics range from biology to social sciences!



## Supplements

Does NO3 improve exercise performance?

Is ashwagandha good for anxiety?

Is fish oil good for heart health?



## Social Policy

Does intergroup contact reduce prejudice?

How to increase voter turnout

Effect of ability grouping on academic performance

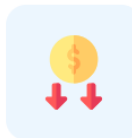


## Medicine

What is the best treatment for restless leg syndrome?

Are covid vaccines safe for pregnant women?

Does visceral fat increase the risk of cancer?



## Economics

Does raising the minimum wage increase unemployment?

Immigration effects on the economy

What is the impact of climate change on GDP?



## Mental Health

Do relationships make people happy?

Does physical exercise improve cognition?

Can CBT treat fear?



## Sleep

Does magnesium improve sleep?

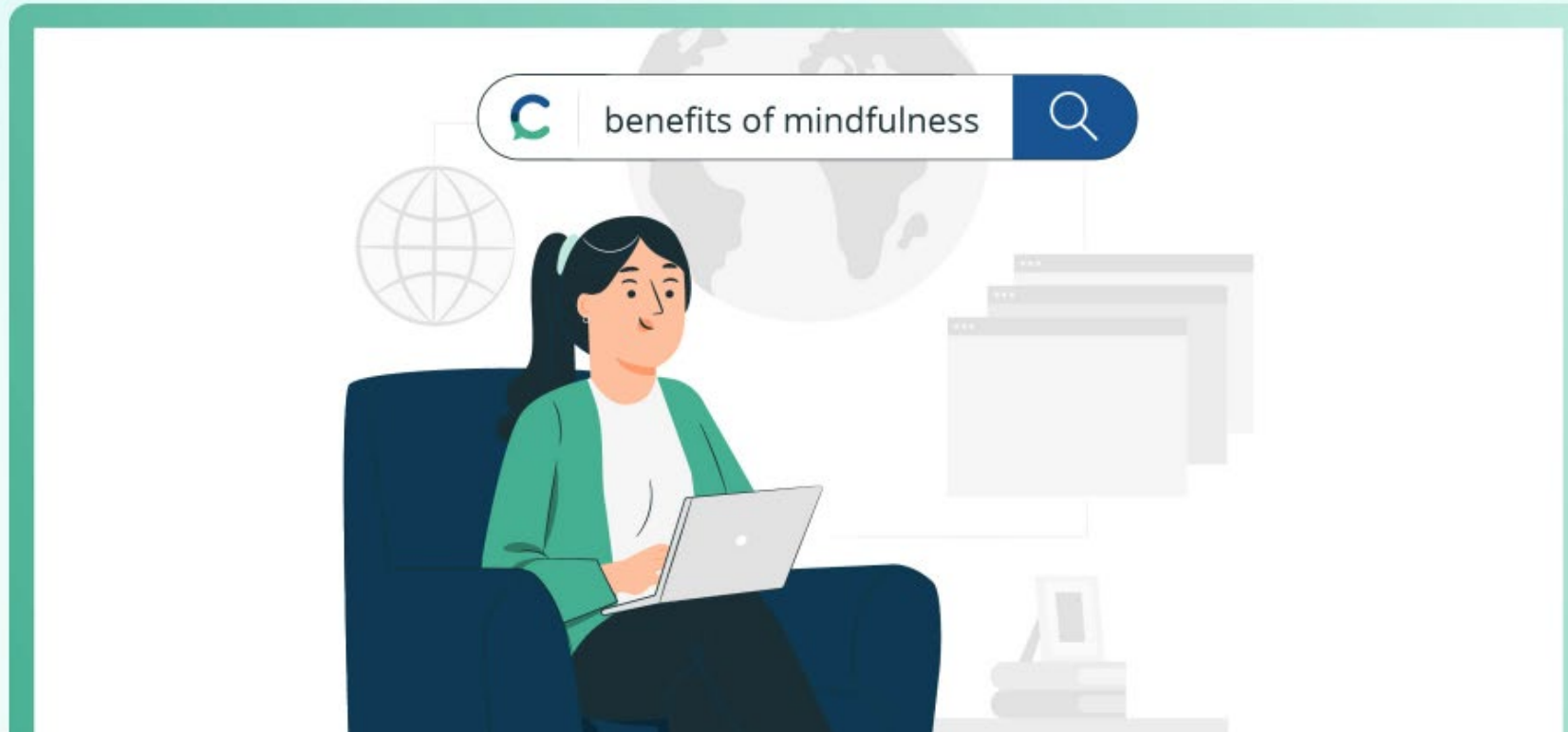
Can mindfulness help sleep?

Is social media bad for sleep?

# Maximize Your Consensus Experience With These Best Practices

July 13, 2022 • By [Consensus](#)

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## Evidence-Based Answers, **Faster**

Consensus is a search engine that uses AI to find insights in research papers



Does creatine help build muscle?

Can mindfulness improve sleep?

Do direct cash transfers reduce poverty?

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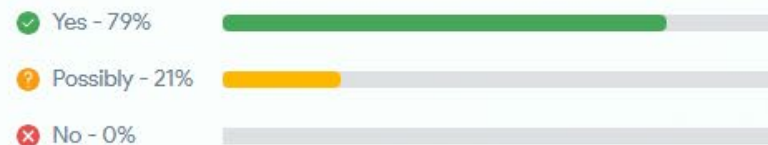
### Summary

Top 10 papers analyzed

These studies suggest that creatine supplementation, combined with resistance training, is effective in increasing muscle size, strength, and performance, although the exact mechanisms remain unclear.

### Consensus Meter

14 papers analyzed



16 highly relevant results

In summary, the predominance of research indicates that creatine supplementation represents a safe, effective, and legal method to enhance muscle size and strength responses to resistance training.

Yes

Scientific basis and practical aspects of creatine supplementation for athletes.

Nutrition | J. Volek et al. | 2004

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/ ชื่อ ของผู้ใช้งาน



Ask a question, get conclusions from research papers

Ask a research question



Try Searching:

does creatine help build muscle?

what are benefits of mindfulness?

do direct cash transfers reduce poverty?



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Consensus is a search engine that uses language models to surface & synthesize answers from research papers. Our mission is to make expert knowledge accessible for everyone.

To learn more, check out our [best practices](#) and [how a search works](#).

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- [Does creatine improve cognition?](#)
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To get unlimited access to the Consensus product & all of the new features we will be releasing this year, [sign-up for Premium today!](#)

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Scientific basis and practical aspects of cr

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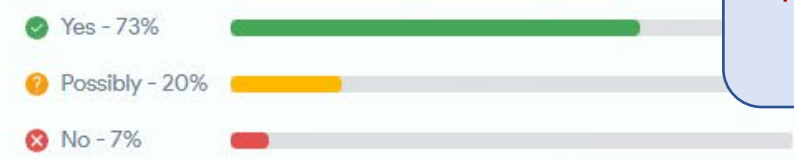
### Summary

Top 10 papers analyzed

These studies suggest that creatine supplementation, especially when combined with resistance training, is a safe and effective method to increase muscle size, strength, and performance, although the exact mechanisms remain unclear.

### Consensus Meter

15 papers analyzed



สรุปโดยสังเขป  
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ผลงานวิจัย 10 อันดับแรก

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เป็นจำนวนร้อยละ

Highly relevant results

In summary, the predominance of research indicates that creatine supplementation represents a safe, effective, and legal method to enhance muscle size and strength responses to resistance training.

Yes

Scientific basis and practical aspects of creatine supplementation for athletes.

Nutrition | J. Volek et al. | 2004

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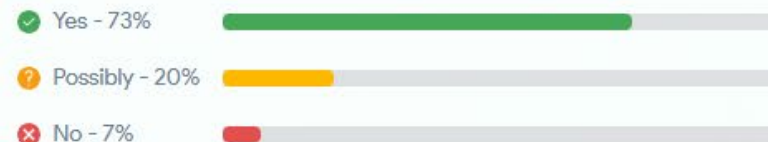
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## Summary

### Beta Feature

The Summary feature attempts to synthesize the most relevant findings in Consensus into a single sentence that answers your question. We can only analyze up to 10 papers at a time, so we may be missing important research.

### Info

This feature is powered by a generative AI model, and may generate incorrect information.

Please read the papers, consult additional trusted sources, and do not use the summary to make big life decisions.

## Consensus Meter

### Beta Feature

The Consensus Meter attempts to classify the most relevant findings based on how they would answer your question. The maximum # of papers we can analyze is 20, so we may be missing important research.

### Info

Our current model is only 90% accurate and may miss important context.

Please read the papers, consult additional trusted sources, and do not use the meter to make big life decisions.





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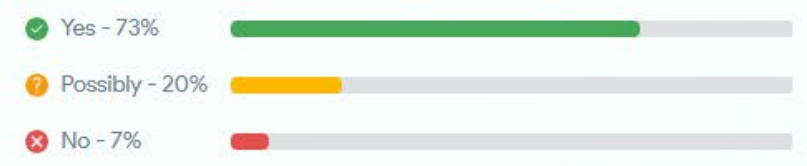
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Nutrition | J. Volek et al. | 2004

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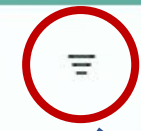
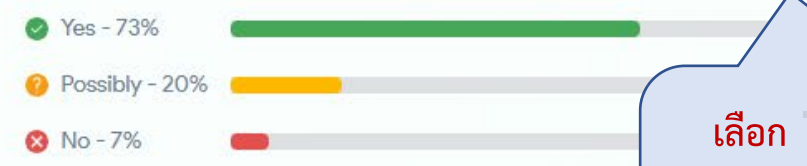
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### Consensus Meter

15 papers analyzed



เลือก ≡ เพื่อกรองหรือเลือก  
ศึกษาผลการสืบค้นที่เป็น Yes,  
Possibly, No

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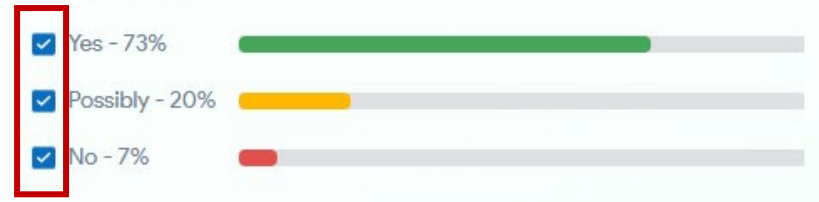
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### Consensus Meter

15 papers analyzed



# Symbols and Meanings

Thus there is substantial evidence to indicate that creatine supplementation during resistance training is more effective at increasing muscle strength and weightlifting performance than resistance training alone, although the response is highly variable.

• Yes

Effects of creatine supplementation and resistance training on muscle strength and weightlifting performance.

Journal of strength and conditioning research | E. Rawson et al. | 2003

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This study concluded that creatine supplementation combined with complex training improved maximal muscular strength and reduced muscle damage during training.

• Yes

Effects of 4-Week Creatine Supplementation Combined with Complex Training on Muscle Damage and Sport Performance

Nutrients | Chia-Chi Wang et al. | 2018

🔍 Very Rigorous Journal ⓘ

🔄 RCT ⓘ

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In conclusion, the present study demonstrates for the first time that creatine supplementation in combination with strength training amplifies the training-induced increase in satellite cell number and myonuclei concentration in human skeletal muscle fibres, thereby allowing an enhanced muscle fibre growth in response to strength training.

• Yes

Creatine supplementation augments the increase in satellite cell and myonuclei number in human skeletal muscle induced by strength training

The Journal of Physiology | S. Olsen et al. | 2006

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# Symbols and Meanings



## Systematic Review

A systematic review is a summary of the scientific literature related to a question. Findings from systematic reviews may be useful as authors synthesize results from many different papers.



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From a paper in the top 5% of most cited papers in our database. Having lots of citations does not necessarily mean the finding is more valid, but it is an indicator of a paper's influence.



## Very Rigorous Journal

This issue ranked in the **top 10%** of journals measured by SciScore. The **SciScore Rigor and Transparency Index** scores thousands of journals on specific scientific rigor criteria, such as randomization, blinding, and statistical power.



## Rigorous Journal

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## Meta-analysis

A meta-analysis is a statistical analysis that combines data from many studies in order to reduce the error of any one study. While often considered high quality evidence, it is still subject to the quality of the underlying studies.



## RCT

A randomized controlled trial is a study where participants are randomly assigned to the control or the experimental group. RCTs are considered the gold-standard for experimental design.



## Case Report

A case report is a paper that describes an individual case or subject ( $n = 1$ ). While case reports can be useful anecdotes to justify further research, findings should not be generalized.

# Symbols and Meanings

Thus there is substantial evidence to indicate that creatine supplementation during resistance training is more effective at increasing muscle strength and weightlifting performance than resistance training alone, although the response is highly variable.

• Yes

Effects of creatine supplementation and resistance training on muscle strength and weightlifting performance.

Journal of strength and conditioning research | E. Rawson et al. | 2003

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This study concluded that creatine supplementation improved muscular strength and reduced muscle damage.

Effects of 4-Week Creatine Supplementation on Muscle Strength and Damage

Nutrients | Chia-Chi Wang et al. | 2018

Very Rigorous Journal

RCT

In conclusion, the present study shows that creatine supplementation in combination with strength training increases myonuclei concentration in human skeletal muscle, suggesting muscle growth in response to strength training.

Creatine supplementation augments the increase in myonuclei concentration in human skeletal muscle in response to strength training.

The Journal of Physiology | S. Olsen et al. | 2011

Rigorous Journal

RCT

## Cite this finding

APA

MLA

Chicago

BibTeX

Tipton, K., & Ferrando, A. (2008). Improving muscle mass: response of muscle metabolism to exercise, nutrition and anabolic agents.. *Essays in biochemistry*. <https://doi.org/10.1042/BSE0440085>.

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Compared with resistance training alone, creatine supplementation improves muscle strength, with greater gains in lean tissue mass resulting from post-exercise creatine supplementation.

Published in Applied physiology, nutrition, and metabolism = Physiologie appliquee, nutrition et metabolisme | D. Candow | 2015

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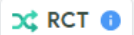
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does creatine help build muscle?



Paper

## Long-term creatine intake is beneficial to muscle performance during resistance training.



Journal of applied physiology | Citations: 452 | 1997



Full text

Abstract

The effects of oral creatine supplementation on muscle strength, muscle power, and body composition were investigated in young female volunteers. High-dose creatine supplementation (20 g/day) increased (P < 0.05) muscle strength and power compared with low-dose creatine intake (5 g/day). Muscle strength and power were maintained during 10 wk of training associated with low-dose creatine intake. Muscle strength and power were maintained during 10 wk of training associated with low-dose creatine intake. Muscle PCr and strength, intermittent exercise capacity, and fat-free mass subsequently remained at a higher level in the creatine group than in the placebo group during 10 wk of detraining while low-dose creatine was continued. Finally, on cessation of creatine intake, muscle PCr in the creatine group returned to normal within 4 wk. It is concluded that long-term creatine supplementation enhances the progress of muscle strength during resistance training in sedentary females.

Authors

K. Vandenberghe, M. Goris, P. van Hecke + 3 more authors





Journal

Journal of applied physiology

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K. Vandenberghe, M. Goris, +3 authors P. Hespel • Published 1 December 1997 • Medicine • Journal of applied physiology

The effects of oral creatine supplementation on muscle phosphocreatine (PCr) concentration, muscle strength, and body composition were investigated in young female volunteers (n = 19) during 10 wk of resistance training (3 h/wk). Compared with placebo, 4 days of high-dose creatine intake (20 g/day) increased (P < 0.05) muscle PCr concentration by 6%. Thereafter, this increase was maintained during 10 wk of training associated with low-dose creatine intake (5 g/day). Compared with placebo... Expand

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Clinical Trial > J Appl Physiol (1985). 1997 Dec;83(6):2055-63. doi: 10.1152/jappl.1997.83.6.2055.

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## Long-term creatine intake is beneficial to muscle performance during resistance training

K Vandenberghe<sup>1</sup>, M Goris, P Van Hecke, M Van Leemputte, L Vangerven, P Hespel

Affiliations + expand

PMID: 9390981 DOI: 10.1152/jappl.1997.83.6.2055

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### Abstract

The effects of oral creatine supplementation on muscle phosphocreatine (PCr) concentration, muscle strength, and body composition were investigated in young female volunteers (n = 19) during 10 wk of resistance training (3 h/wk). Compared with placebo, 4 days of high-dose creatine intake (20 g/day) increased (P < 0.05) muscle PCr concentration by 6%. Thereafter, this increase was maintained during 10 wk of training associated with low-dose creatine intake (5 g/day). Compared with placebo, maximal strength of the muscle groups trained, maximal intermittent exercise capacity of the arm flexors, and fat-free mass were increased 20-25, 10-25, and 60% more (P < 0.05), respectively, during creatine supplementation. Muscle PCr and strength, intermittent exercise capacity, and fat-free mass

### Figures and Tables from this paper

	Pre	High Dose		Training + Low Dose	
		4 days	5 wk	5 wk	10 wk
ATP, mmol/kg wet wt					
Placebo group	5.5 ± 0.2	5.6 ± 0.2	5.7 ± 0.3	5.4 ± 0.3	
Creatine group	5.6 ± 0.2	5.4 ± 0.2	5.4 ± 0.2	5.4 ± 0.2	
PCr, mmol/kg wet wt					
Placebo group	22.5 ± 0.7	22.2 ± 1.1	22.4 ± 1.1	22.5 ± 1.3	
Creatine group	23.0 ± 0.5	24.2 ± 0.8*	24.5 ± 1.2*	24.2 ± 1.1*	
PCr/ATP					
Placebo group	4.1 ± 0.1	4.0 ± 0.1	3.9 ± 0.1	4.2 ± 0.1	
Creatine group	4.1 ± 0.1	4.5 ± 0.2*	4.5 ± 0.2*	4.5 ± 0.1*	

Values are means ± SE of 9 subjects in placebo group and 10 subjects in creatine group. Saturation-corrected phosphocreatine (PCr)/ATP ratio was calculated from individual spectra before (Pre) and after 4 days of high-dose placebo and creatine (20 g/day) administration and after 5 and 10 wk of low-dose placebo and creatine administration (5 g/day) in combination with resistance training (3 times/week). ATP and PCr concentrations were calculated assuming creatine D-ATP peak areas to correspond to ATP concentration of 0.5 mmol/kg wet muscle. See METHODS for further details. \*Significant treatment effect compared with placebo, P < 0.05.

Table 1

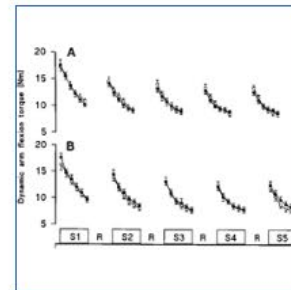


Figure 1

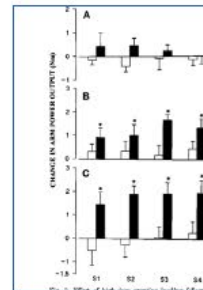


Figure 2

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## Details



Journal of Applied Physiology  
Volume 83, Issue 6  
Dec 1997  
Pages 1783-1a

### ARTICLE

Long-term creatine intake is beneficial to muscle performance during resistance training

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K. Vandenberghe, M. Goris, P. Van Hecke, M. Van Leemputte, L. Vangerven and P. Hespel

CITE

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Publisher American Physiological Society  
ISSN 8750-7587  
eISSN 1522-1601  
Print December 1, 1997  
Accepted July 30, 1997  
Received March 13, 1997  
Pages 2055 - 2063



## Long-term creatine intake is beneficial to muscle performance during resistance training

K. VANDENBERGHE,<sup>1</sup> M. GORIS,<sup>1</sup> P. VAN HECKE,<sup>2</sup>  
M. VAN LEEMPUTTE,<sup>1</sup> L. VANGERVEN,<sup>3</sup> AND P. HESPEL<sup>1</sup>

<sup>1</sup>Department of Kinesiology, Faculty of Physical Education and Physiotherapy, and <sup>2</sup>Biomedical Nuclear Magnetic Resonance Unit, Department of Radiology, Faculty of Medicine, Katholieke Universiteit Leuven; and <sup>3</sup>Department Rega School, Katholieke Hogeschool Leuven, B-3001 Leuven, Belgium

Vandenberghe, K., M. Goris, P. Van Hecke, M. Van Leemputte, L. Vangerven, and P. Hespel. Long-term creatine intake is beneficial to muscle performance during resistance training. *J. Appl. Physiol.* 83(6): 2055–2063, 1997.—The effects of oral creatine supplementation on muscle phosphocreatine (PCr) concentration, muscle strength, and body composition were investigated in young female volunteers ( $n = 19$ ) during 10 wk of resistance training (3 h/wk). Compared with placebo, 4 days of high-dose creatine intake (20 g/day) increased ( $P < 0.05$ ) muscle PCr concentration by 6%. Thereafter, this increase was maintained during 10 wk of training associated with low-dose creatine intake (5 g/day). Compared with placebo, maximal strength of the muscle groups trained, maximal intermittent exercise capacity of the arm flexors, and fat-free mass were increased 20–25, 10–25, and 60% more ( $P < 0.05$ ), respectively, during creatine supplementation. Muscle PCr and strength, intermittent exercise capacity, and fat-free mass subsequently remained at a higher level in the creatine group than in the placebo group during 10 wk of detraining while low-dose creatine was continued. Finally, on cessation of creatine intake, muscle PCr in the creatine group returned to normal within 4 wk. It is concluded that long-term creatine supplementation enhances the progress of muscle strength during resistance training in sedentary females.

phosphorus-31-nuclear magnetic resonance; ergogenics; diet; intermittent exercise

may be conserved for a period of 4 wk by continued creatine ingestion in a dosage equaling daily body creatine loss. On the other hand, fragmentary in vivo and in vitro evidence in literature suggest that creatine probably is needed for additional cellular functions than just phosphocreatine (PCr) production. Animals in which muscle creatine depletion was induced by feeding of creatine analogs have been shown to exhibit growth retardation and general weakness and at the same time to develop muscle ultrastructural abnormalities, including disruption of thin myofilaments, dilation of mitochondria, and disruption of Z bands (17, 20, 25, 28). Interestingly, such ultrastructural abnormalities resulting from abnormalities in creatine metabolism also have been associated with the incidence of muscular dystrophy or myopathy (27). Furthermore, on one hand, prolonged oral creatine supplementation has been shown to increase type II muscle fiber diameter (17) in patients with eye muscle atrophy. On the other hand, Earnest et al. (9) have reported that short-term creatine intake increases fat-free mass in strength-trained athletes. Accordingly, some (4, 16) but not all (10) in vitro findings indicate creatine stimulates the biosynthesis of muscle myosin. Given these earlier in vivo and in vitro findings, it is reasonable to speculate that oral creatine supplementation may exert an anabolic action in humans and thereby is likely to enhance the effects of resistance training on muscle mass and strength.

THE EFFECTS of oral creatine supplementation on contrac-

