Creatine From a Medical Point of View

Creatine From a Medical Point of View! My name is Naomi Albertson, M.D. I'm a sports medicine and family medicine physician and today I'm going to be talking about creatine from a medical point of view. Information provided in this presentation is intended for your general knowledge only and does not constitute medical advice. I am a medical physician at the Reno Orthopaedic Clinic and the owner and developer of Dr. Ni's OC2. OC2 is a combination of vitamin d3, calcium citrate magnesium and creatine monohydrate for total frame support.

In today's talk we're going to discuss creatine, talk about what it can do for you, whether it's safe and how it should be used. So let's start with some myths.

Myth number one: creatine is a steroid.

Number two: creatine isn't natural.

Three creatine is only for body builders.

And four, creatine will make me look like a bodybuilder.

So what is creatine really?

Well creatine is not a steroid it's produced by the human body from amino acids glycine and arginine, and its main role is to facilitate recycling of ATP—the energy currency of the cell; primarily in muscle and brain tissue.

Creatine is still the most widely used performance-enhancing supplement by athletes, men and women of all ages. When used in moderate amounts and with normal exercise, creatine does not cause muscle bulking but does increase strength and recovery.

So what can creatine do for you?

Well, supplementing with creatine can increase storage of creatine in the muscles, providing more available energy, and allowing you to exercise longer, more easily and more effectively. Some research suggests that creatine in combination with exercise may increase bone density.

Other research shows that when combined with 30 grams of whey protein twice daily, creatine may increase strength in adults older than 70 years of age even without exercise. Additionally, creatine is supported by research for use in patients with chronic heart failure to improve heart pumping function.

And finally, it's supported in patients with neurologic conditions such as Parkinson's disease to slow down the deterioration of brain function. Creatine can help fight against sarcopenia. Sarcopenia is the normal loss of muscle mass and strength as we age, and can begin as early as age 35. We see strength losses between ages 50 and 60 of about one and a half percent per year, and those losses will increase after the age of 60 by up to three percent per year. So creatine supplementation can actually help you to maintain strength and stay active.

Is creatine safe?

Well, it's been studied over about 40 years with multiple randomized studies and there's very little downside to its use. Some people who take more than 5 grams daily may develop an upset stomach or even small amounts of water retention.

Additionally, people who are on protein restricted diets should be especially careful and consult their doctor before starting supplementation with creatine to ensure their total protein intake isn't too high.

So how should I take creatine if I decide it's something I

want to try?

Current recommendations suggest that taking creatine every day and in low amounts is effective in improving muscular strength and recovery. Taking creatine with a small amount of carbohydrates is also likely to increase absorption for greater benefit.

If you're sensitive to creatine and you do develop some stomach upset, splitting the amount you take each day into two servings may help you tolerate it better.

And finally, creatine's best effects will be achieved in conjunction with regular exercise.

So what happens if you stop taking creatine?

Well there's good news and there's some bad news. The bad news is that as we age we lose muscle strength and muscle cells. The good news is that creatine provides raw material for energy creation in your muscle cells and helps to maintain the strength that's achievable with the cells remaining. So since aging still causes cell loss, using creatine regularly can help to offset the strength declines seen with aging.

So if you take creatine regularly, you will increase muscle strength but if you stop taking creatine you not only won't see continued improvements in strength but the natural process of aging and muscle cell loss will not be offset by the gains in strength and you will overall see declines in strength.

So, if you're interested in maintaining muscle strength as you age, ongoing creatine supplementation can play an important role.

You should note that a small percentage of people will not benefit from creatine, so if you're not seeing some improvements in strength and endurance within a month it's recommended you discontinue taking it.

So you may have seen these other myths about creatine.

One: creatine causes weight gain. This is false. However, as I mentioned some individuals may experience a small amount of water retention in muscles.

Two: you don’t need to exercise to see the benefits. Unfortunately, this isn’t the case. You do need to exercise to make the most of creatine.

Three: normal use of creatine can cause damage to the kidneys. Unfortunately, this myth came about from a case report of an athlete who was trying to cut weight and dehydrate while taking high amounts of creatine. Unfortunately, in that individual renal failure did occur. It has not been documented otherwise in the literature.

Four: you need to front-load it in large amounts for it to be effective. High amounts do allow for faster saturation and storage of creatine within muscle cells, however, lower amounts on a regular basis achieve the same benefit also over fairly short periods of time (approximately two to three weeks). For that reason, there’s no need to front-load it and it’s much better tolerated in smaller amounts.

Five: heating creatine is a good way to dissolve it. Creatine does not completely dissolve in water. However, heating it may actually denature it, as it is a combination of amino acids. For that reason it is not recommended that it be heated for dissolution.

Thank you for watching this presentation: Creatine From a Medical Point of View. You can find more presentations on my website at bone and muscle dot com. I recommend Dr. Ni’s OC2 for total frame support.* It includes calcium citrate, magnesium, and vitamin d3 for bone density and creatine monohydrate for muscle support. Please read more and see the research at bone and muscle dot com.

* 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.

Creatine: How to Best Use It for Muscle Growth (Avoid Side Effects)!

Creatine is one of the few supplements out there that is actually well-backed by research in terms of its effectiveness.

However, there's a lot of confusion out there as to how to take creatine and how creatine works. In terms of "what does creatine do", it simply allows a faster regeneration of ATP in our muscles.

Since ATP is the main form of energy for our muscles, this enables us to perform an extra rep or two during our training. As for the best creatine to take and how to use creatine effectively, stick to creatine monohydrate and take your creatine with your post-workout meal.

There seems to be a slight benefit to taking creatine post-workout, and it actually drastically improves its effectiveness by taking creatine with carbohydrates and protein. Now as for whether creatine causes hair loss or other side effects, research is inconclusive at the moment. Long-term creatine supplementation does not cause any adverse health effects but may increase DHT which is a hormone that accelerates male pattern baldness in those who are susceptible or have it in their family history. Thus, those who are

susceptible may want to consider that. But more research is definitely needed – the findings aren't as serious as many people make it out to be.

Creatine Article (BUILTWITHSCIENCE.COM):

> *Creatine 101: How to Best Use Creatine for Muscle Growth (12 Studies)*

You can browse around my website and read the articles I do have up (I'll be adding more articles on a regular basis). Also, give me a follow on my social media platforms if you haven't already, as I post informative content there on a more regular basis (links below). Thanks again! Cheers!

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STUDIES:
Creatine Benefits:
https://www.ncbi.nlm.nih.gov/pubmed/12945830
https://www.ncbi.nlm.nih.gov/pubmed/14685870
https://www.ncbi.nlm.nih.gov/pubmed/10410846?dopt=Abstract
https://www.ncbi.nlm.nih.gov/pubmed/20181066?dopt=Abstract
Creatine Responders/Non-responders:
https://www.ncbi.nlm.nih.gov/pubmed/15320650/
Best type of creatine:

https://www.ncbi.nlm.nih.gov/pubmed/19387397
What to take it with:
https://www.asep.org/asep/asep/kreider2.pdf
http://www.physiology.org/doi/abs/10.1152/jappl.2000.89.3.1165
When to take it:
https://jissn.biomedcentral.com/articles/10.1186/1550-2783-10-36
https://www.researchgate.net/publication/266138342_Creatine_timing_on_muscle_mass_and_strength_Appetizer_or_Dessert
Loading vs non-loading:
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Cycling not needed:
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Creatine no side effects:
https://jissn.biomedcentral.com/articles/10.1186/s12970-017-0173-z#CR8
Creatine hair loss study:
https://www.ncbi.nlm.nih.gov/pubmed/19741313

Music:
Soundcloud.com/lakeyinspired