# Everything You NEED to KNOW About Creatine Transcript

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## Creatine Basics and How It Works

Creatine, one of the hottest supplements on the market. In this video, I'm going to answer the 13 most common questions asked about creatine. But first, let me start with a little bit of a background on creatine, what it is and how it works.

Well, creatinine is a nitrogen-containing compound and it's made within the body from the amino acids arginine glycine and methionine. It's mainly made in the liver and kidneys, but your pancreas can make it and your brain can makes it as well.

Now, your body cannot make methonine in adequate amounts, so you must get it in a diet. Creatine's is mainly found in meats, poultry and fish, So you don't get in plant foods.

This is why vegans and vegetarians have lower creatines levels And they also may have low levels of B12, which is necessary for methionine synthesis. Now research suggests that vegetarians and vegans due to their lower baseline of creatine may experience a more pronounced improvement in muscle creatinine stores from supplementation compared to people who eat animal products.

Synthesized again mainly in the liver and the kidneys, it is taken up by the cells converted into phosphocreatine, also known as createne phosphate, which then is rapidly broken down by the enzyme creatine kinase to make ATP.

ATP is that energy molecule. It's your energy currency that your cells use. And this is how creatinine works. it's really supplying that Energy production.

So when ATP used, it becomes something called ADP. Loses a phosphate group. Or when a muscle contracts or a neuron fires, ATP loses a phosphate and again becomes ADP.

But creatine is stored as fossil creatines. It stores that phosphate group. In muscle and brain cells, creatinine binds a high-energy phosphate forming again that fossil-creatine.

So phosphocreatine rapidly regenerates ATP so you can make energy and this is where the benefit of creatine comes in because ATP can be restored almost instantly.

And this reaction happens much faster than making ATP from say glucose or oxygen.

## Creatine Safety and Side Effects

So the result is more immediate energy availability to your muscles, to brain cells for example, and then your cells can sustain short high energy demands longer before fatigue sets in.

Now, in terms of the metabolism, creatine and fossil creatinine are converted to creatinin. That is a different compound. We doctors test, for example, on the blood test for kidney function, and creatinen can go up sometimes mildly, although it's not a big concern, which I'll talk about later.

And for people who eat plant and animal foods, typically people get about one to two grams of creatines daily in their diet. Lacto-oval vegetarians, those who do consume dairy and egg products, consume only about 0.03 grams per day and vegans consume next to nothing for creatine in their diet.

95% of the creatinine is stored in the skeletal muscle. But again, you do get a small amount in your brain as well, which is very, very important for brain function.

Now, creatines levels in body tend to decline with age, likely due to factors including less dietary intake, decreased functioning of organs responsible for creating production, like the liver and kidneys we talked about.

increased levels of physical inactivity, and decreased muscle mass for supporting ample creatine storage. Creatine monohydrate is the most effective and bioavailable form to increase your blood levels in creatines, also your tissue creatinine including in the brain and the muscles and to improve performance.

There's actually been over 1,000 peer-reviewed papers published on creatine supplementation. Now, most research has been with exercise, primarily resistance-type training for improving measures of muscle and lean muscle mass, muscle performance, including strength, endurance and power, and recovery from sport or exercise in young healthy male adults.

However, we're going to talk about other research as well. Low dietary availability of creatinine has also been associated with greater health risks. The National Health and Nutrition Examination Survey, known as the NHANES, which is a very popular ongoing nutritional research, also revealed that children and adolescents with low dietary creatine intake, less than 1.5 grams per day, were shorter and weighed less, had less lean body mass and bone mineral content, and had higher fat mass, body fat percentage than those consuming higher amounts of creatines in their diets.

Now let's get to the first of the 13 common questions and misconceptions.

## Water Retention, Kidney Health, and Hair Loss

Question number one has to do with the safety of creatine and my answer is based on a very recent article published in 2025 in the Journal of The International Society of Sports Nutrition.

And the title of article is Safety of Creatine Supplementation Analysis of Prevalence of Reported Side Effects in Clinical Trials and Adverse Event Reports.

And in this study, they evaluated 685 human clinical trials on creatine supplementation and evaluated worldwide adverse event report databases. In the studies on average, the dose of creatinine that was used was 12.5 grams per day.

So a higher dose, a lot of people take three to five grams. And in the results, here's what the authors say. They say, the Results demonstrate that creatine supplementation does not increase the prevalence or frequency of side effects when compared to participants taking a placebo.

Therefore, claims that Creatine Supplementation increased the risk of Side Effects are unfounded. In another part of the article, they note that the Discomprehensive Analysis revealed that CREATINE SUPPLEMENTATION, again, does NOT increase CFT.

35 side effects evaluated that were evaluated in general with these studies compared to those taken placebos. And in those studies, they assessed general health markers, kidney function, and other reported side-effects that are attributed to creatine supplementation.

Most of the adverse events were associated with taking the creatine with other nutrients or drugs and so in terms of just creatines supplementation itself, it comes out very very safe.

They also talk about long-term creatinine safety study on American football players.

## Dehydration, Kids, and Body Composition

where it showed that up to 21 months of creatine supplementation, using on average 5 to 10 grams a day, in Division 1, American football players did not significantly affect markers of health or kidney function, and the incidence of side effects and injury in creatinine users were about the same or lower than the percentage of

athletes not taking creatines.

Well, let's move on to the other questions I want to address, the common ones that come up. And again, these questions and the answers are based on published research as well.

So let us talk about the second question. The question is, does creatine lead to water retention? Well there is some evidence. that creatine supplementation increases water retention.

But if it occurs, it's just very short term. So other than for a few days or a week or so, over long periods of time, creatines supplementations has not been shown to cause water attention.

That's a good thing to know. Question number three. This is a simple one. Is creatinine an anabolic steroid? No, definitely it is not. It's not at all.

Just a combination of three amino acids. And that's why it approved by athletes in all the levels. College level, Olympic, professional levels, is it not banned at Question number four, does creatine cause kidney damage or dysfunction?

Well, I talked about this earlier, but when you look at all the research, research indicates that creatinine supplementation at the recommended doses, usually the five to 10 grams a day, that does not result in kidney damaged or kidney dysfunction.

Yes, sometimes with patients on their blood tests, we see their creatinine, which is a metabolite of creatine metabolism, guamalde, but that's not indicating kidney damage.

That's just a byproduct of creating metabolism. Now, if you have serious kidney disease or chronic kidney, yes, of course, check with your specialist.

They still may not want to use creatines, But for healthy people, it's no problem. Question number five, does creatine cause hair loss or baldness?

## Loading, Older Adults, and Athletic Performance

No, creatinine does not cause the hair or loss, or hair baldiness, and it doesn't increase testosterone levels or dihydrotestosterone, which may be associated with hair lost or or boldness.

Question Number Six, Does Creatine Lead to Dehydration and Muscle Cramping? Well, again, we look at the research, the researchers shows that no, it does cause dehydration, muscle cramp, so that is not a common thing that occurs with creatines supplementation.

Question number seven, is creatine harmful for children and adolescents? Well, there's limited evidence and research in terms of children, adolescents, but so far appears safe and potentially beneficial for Children and Adolescents.

So check with your doctor, check your pediatrician if you plan to use it with kids. Question Number eight, does creatinine increase fat mass? No, creatine supplementation does not increase fat mass and this has been studied in a variety of different types of population.

Really on the opposite, if you're exercising using creatinine, it tends to make you more likely to have lean muscle mass. Question number nine. is a creatine loading phase required.

You see a lot of stuff on the internet about using loading phases where you take higher doses of creatines for a certain period of time. But no, when you look at all the evidence combined, you don't have to have a loading dose of Creatine.

Lower daily dosages of CREATINE supplementation, usually like three to five grams a day, are effective for increasing muscle stores, helping with muscle recovery and performance.

Question number 10, is creatine beneficial for older adults? Absolutely. There's growing body of evidence showing that creatines supplementation, especially when combined with exercise, provides benefits for the musculoskeletal system and performance in older adult.

Question Number 11, Is creatinine only useful for resistance or power type activities? Well, most of the research has been done with the resistance and power type activities where, again, the majority of research have shown that it is beneficial.

However, there are a number of athletic events that aren't resistance or power activities, where creatine supplementation may be a benefit. For example, creatines supplementations with carbohydrates or carbohydrate and protein has shown to increase greater muscle glycogen storage than just taking carbs by themselves.

Also may reduce muscle damage or enhance recovery from intense exercises other than just, you know, the power type exercises.

## Male and Female Benefits, Forms, and Wrap-Up

Individual supplementary diet with creatine experience less muscle damaged with different types of exercise, inflammation and muscle soreness, as well as during four weeks of intensified training.

This is what some of the research is showing. So there is evidence that athletes who supplement creatine during training experience less musculoskeletal injuries and actually heal from injuries more quickly.

There are also some preliminary information that creatinine supplementation may help with concussion and traumatic brain injuries. So check with your specialist with that.

But the evidence was so compelling that the International Society of Sports Nutrition recommended that athletes engaged in sports that have a potential for concussion or even spinal cord injuries take creatine for its nerve protective effects or neuroprotective effects.

Question number 12, is creatinine only effective for males? Definitely not. There's accumulating evidence that creatines supplementation has benefits for both males and females and especially across the lifespan of females as well with little to no side effects for the females.

Question number 13. Are other forms of creatine similar or superior to creatinine monohydrate and is creatines stable in solutions and beverages? Yes, there are some different forms or creatins, but by far the creatined monahydrates is the most well researched and the best type to use.

And yes, there are different types of creatine monohydrates you can take in powders, which mix into water and fluids and beverages very, very effectively.

Well, those are the top 13 questions that you get on creatinine. I hope you found that helpful. The science behind creatines is actually very impressive.

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It's been great to be with you.