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**100% Effective Natural Hormone Treatment**  
**Menopause, Andropause And Other Hormone Imbalances**  
**Impair Healthy Healing In People Over The Age Of 30!**

## Benefits of Supplementing With Creatine

By Chester Ku-Lea

What is creatine?

Creatine is an amino acid (amino acids are the building blocks of protein) which is made in the body by the liver and kidneys, and is derived from the diet through meat and animal products. Creatine (creatine monohydrate) is a colorless, crystalline substance used in muscle tissue for the production of phosphocreatine, an important factor in the formation of adenosine triphosphate (ATP), the source of energy for muscle contraction and many other functions in the body.

What does creatine normally do in the body?

In the body, creatine is changed into a molecule called "phosphocreatine" which serves as a storage reservoir for quick energy. Phosphocreatine is especially important in tissues such as the voluntary muscles and the nervous system which periodically require large amounts of energy.

Why do athletes take creatine?

Studies have shown that creatine can increase the performance of athletes in activities that require quick bursts of energy, such as sprinting, and can help athletes to recover faster after expending bursts of energy. Creatine is best for the serious bodybuilder. It helps increase muscle mass, rather than muscle endurance, so it's not well suited for athletes participating in endurance activities. However, the increase in muscle mass may be due to water retention and not an increase in muscle tissue.

Why have I been hearing so much about creatine and neuromuscular disorders?

Two scientific studies have indicated that creatine may be beneficial for neuromuscular disorders. First, a study by MDA-funded researcher M. Flint Beal of Cornell University Medical Center demonstrated that creatine was twice as effective as the prescription drug riluzole in extending the lives of mice with the degenerative neural disease amyotrophic lateral sclerosis (ALS, or Lou Gehrig's disease). Second, a study by Canadian researchers Mark Tarnopolsky and Joan Martin of McMaster University Medical Center in Ontario found that creatine can cause modest increases in strength in people with a variety of neuromuscular disorders. Beal's work was published in the March 1999 issue of Nature Neuroscience and the second paper was published in the March 1999 issue of Neurology.

I want to start taking creatine -- is it safe?

For the most part, athletes haven't experienced adverse side-effects from taking creatine, although

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recently there have been a few reports of kidney damage linked to creatine usage. No consistent toxicity has been reported in studies of creatine supplementation. Dehydration has also been reported to be a problem while taking creatine.

Athletes generally take a "loading dose" of 20 grams of creatine a day for five or six days, then continue with a "maintenance dose" of 2 to 5 grams of creatine a day thereafter.

What are the side effects?

Little is known about long-term side effects of creatine, but no consistent toxicity has been reported in studies of creatine supplementation. In a study of side effects of creatine, diarrhea was the most commonly reported adverse effect of creatine supplementation, followed by muscle cramping.<sup>18</sup> Some reports showed that kidney, liver, and blood functions were not affected by short-term higher amounts

or long-term lower amounts of creatine supplementation in healthy young adults. In a small study of people taking 5-30 grams per day, no change in kidney function appeared after up to five years of supplementation. Muscle cramping after creatine supplementation has been anecdotally reported in some studies.

Benefits

- increases athletic performance
- increases muscle mass
- beneficial for muscular disorders

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### **The Importance Of Creatine In Building Lean Muscle**

**By Rick Mitchell**

#### **The Importance Of Creatine In Building Lean Muscle by Rick Mitchell**

Creatine monohydrate can rightly lay claim to being the most popular and arguably most effective bodybuilding supplement currently available. The beauty of creatine is that it is 100% natural and occurs in many foods so it's unlikely to be banned from any sports or competitions.

Let's first establish what creatine actually is. In brief, creatine is produced naturally in our bodies to help supply energy to the muscles. It is produced in the liver, pancreas and kidneys before being transported in the blood to our muscles. It is then converted into phosphocreatine which is a powerful

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metabolite used to regenerate the muscles' ATP source of energy.

From a bodybuilder's perspective, creatine can significantly increase lean muscle mass quickly, improve performance in high intensity exercise, raise energy levels and speed up recovery rates. Creatine's ability to raise energy in muscles is due to its muscle protein synthesizing action whilst reducing the breakdown of protein. This happens because creatine has the effect of super-hydrating muscle cells with water. It also improves muscle growth adding size and strength to muscle fibers.

Creatine is normally taken in two ways. The first involves loading the muscles with 20 to 30 grams of creatine per day for four to seven days. At the end of this phase maintenance involves a regular intake of 5 to 15 grams per day. The other method is more gradual in that it skips out the loading phase and simply involves supplementing with 5 to 15 grams per day for an extended period.

Two questions remain to be answered – does it work and is it safe? Creatine has undoubtedly been proven effective in recent years – over twenty scientific studies have concluded that creatine can increase energy levels and result in enhanced strength, endurance levels and recovery rates. As a training aid it therefore has many merits. In terms of safety, no study to date has shown creatine to be anything other than safe, provided manufacturers' instructions are followed.

There is a bewildering range of creatine supplements on the market so subsequent articles in this series will examine the relative merits of the most popular and effective forms. In the meantime, you can find out more by visiting the site listed below.

Rick Mitchell is the creator of the

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bodybuilders of all levels.



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