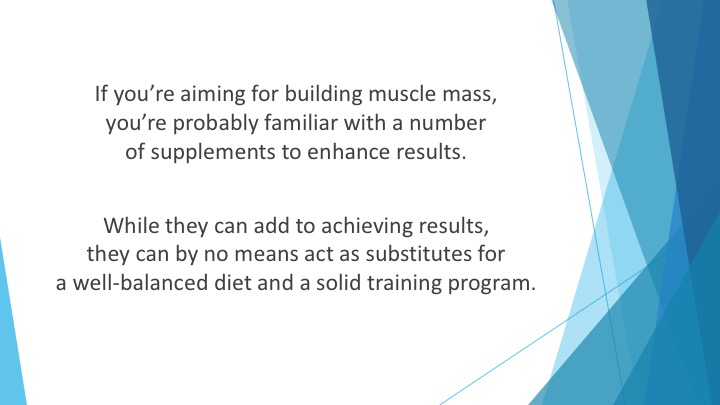
**Chapter 5: Supplement for Muscle Mass**

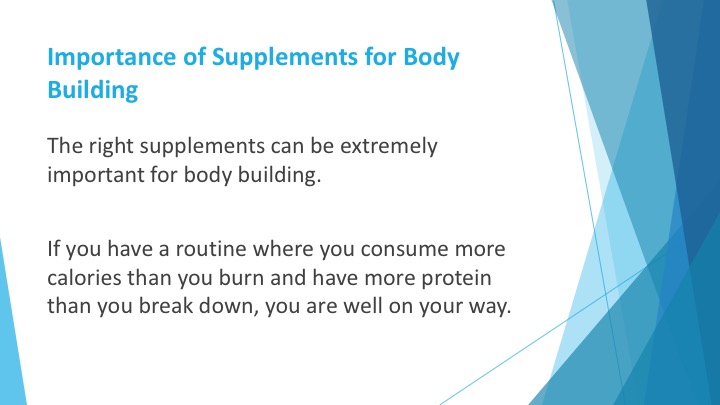
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**S1** : In this video, we’ll talk about “Supplement for Muscle Mass”



**S2** : If you’re aiming for building muscle mass, you’re probably familiar with a number of supplements to enhance results. However, you have to remember that “supplements” are exactly just that- supplements that are meant to supplement you diet and not replace it.

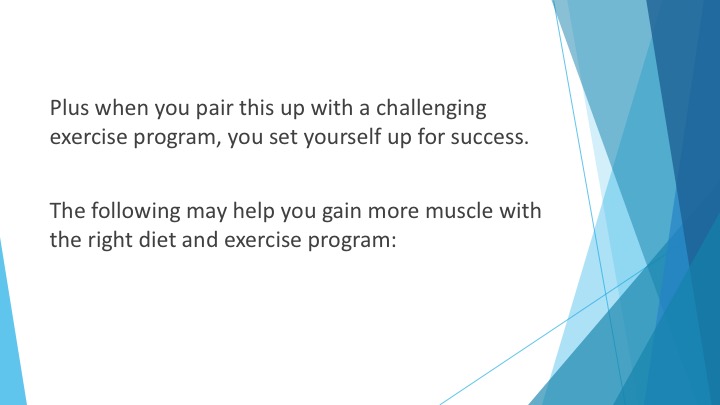
While they can add to achieving results, they can by no means act as substitutes for a well-balanced diet and a solid training program.



**S3 :** **Importance of Supplements for Body Building**

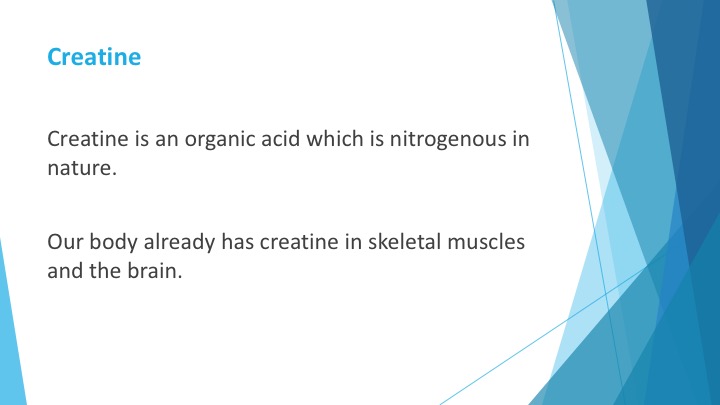
The right supplements can be extremely important for body building. These are compounds that aren’t naturally present in your body or aren’t present in sufficient amounts which makes it essential to take them from the outside.

If you have a routine where you consume more calories than you burn and have more protein than you break down, you are well on your way.



**S4** : Plus when you pair this up with a challenging exercise program, you set yourself up for success. Adding in certain supplements that cater to muscle gain needs specifically can help you go a long way.

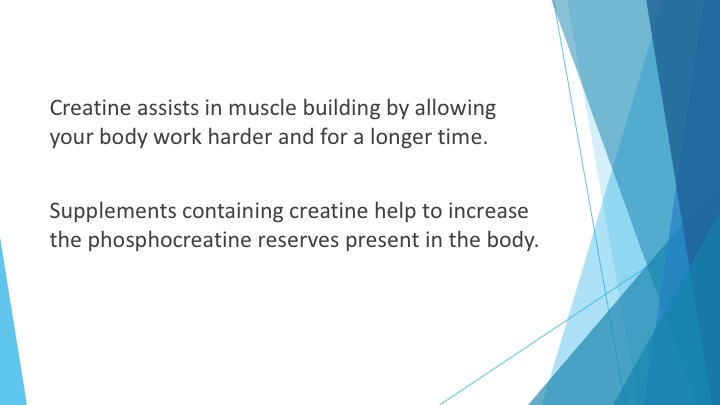
The following may help you gain more muscle with the right diet and exercise program:



**S5 : Creatine**

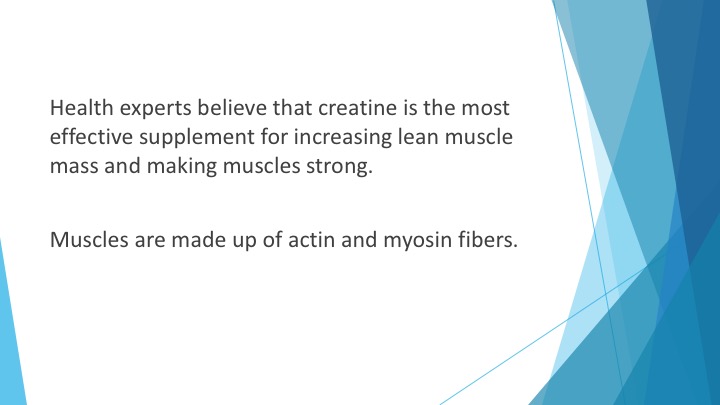
Creatine is an organic acid which is nitrogenous in nature. It contains amino acids like glycine, methionine and arginine. These amino acids play a role in increasing muscle mass by repairing any damaged muscle tissue and forming new muscle cells.

Our body already has creatine in skeletal muscles and the brain.



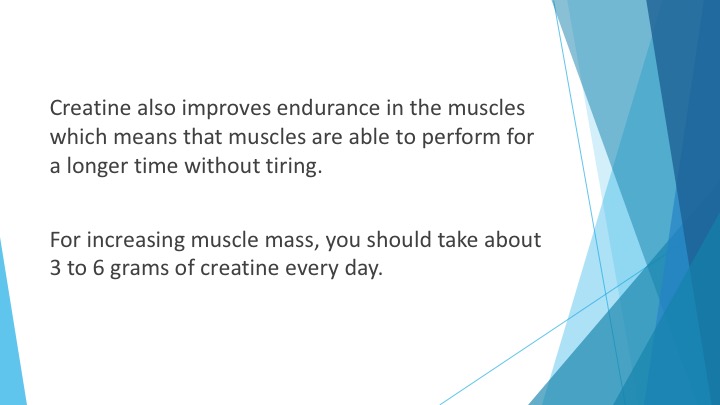
**S6 :** Creatine assists in muscle building by allowing your body work harder and for a longer time. It lets you do more sets and reps.

Supplements containing creatine help to increase the phosphocreatine reserves present in the body. When needed for energy, these reserves are broken down and the energy can be used in intense workout sessions.



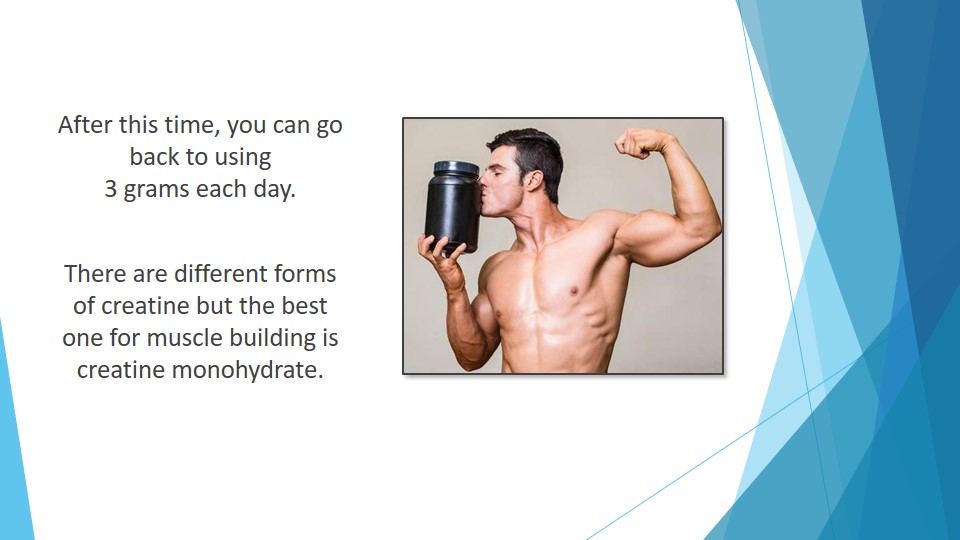
**S7 :** Health experts believe that creatine is the most effective supplement for increasing lean muscle mass and making muscles strong. It enhances performance in anaerobic exercises and increases the fiber size in the muscles.

Muscles are made up of actin and myosin fibers. When the fiber size is increased, muscles grow and that increases muscle mass as a whole.



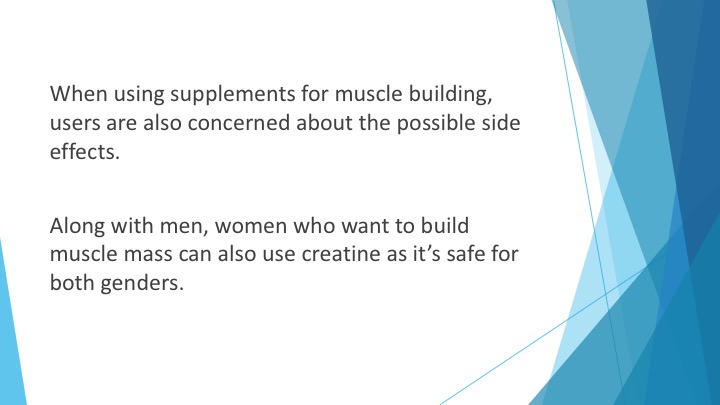
**S8 :** Creatine also improves endurance in the muscles which means that muscles are able to perform for a longer time without tiring.

For increasing muscle mass, you should take about 3 to 6 grams of creatine every day. There is a process called ‘creatine loading’ in which the user takes 10 to 20 grams of the supplement for about 2 weeks.



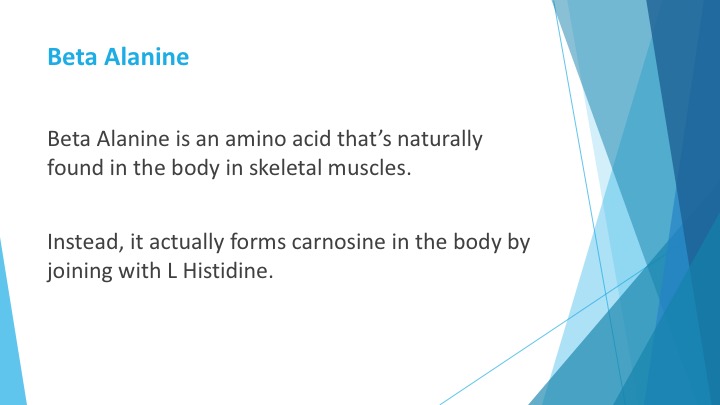
**S9 :** This reduces the time that you need for seeing the results of this supplement. After this time, you can go back to using 3 grams each day.

There are different forms of creatine but the best one for muscle building is creatine monohydrate. This form is cheaper than others and has better bioavailability.



**S10 :** When using supplements for muscle building, users are also concerned about the possible side effects. Creatine, being the most studied supplement for muscle building, hasn’t shown any side effects so far.

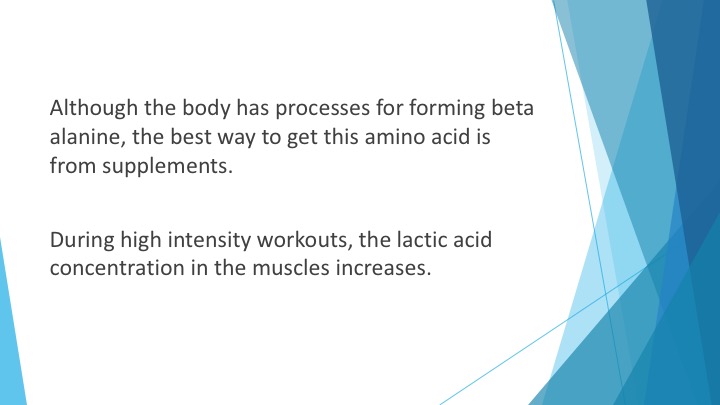
It doesn’t tear out the muscle cells or harm the kidneys, as some people speculate. Along with men, women who want to build muscle mass can also use creatine as it’s safe for both genders.

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**S11 :** **Beta Alanine**

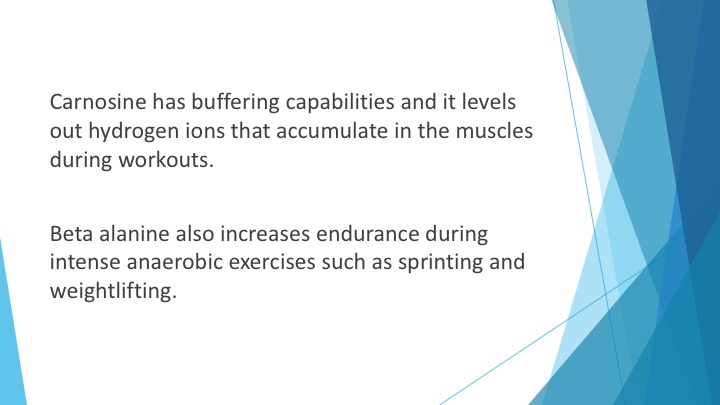
Beta Alanine is an amino acid that’s naturally found in the body in skeletal muscles. This amino acid isn’t directly involved in forming muscle cells or even proteins.

Instead, it actually forms carnosine in the body by joining with L Histidine. The amount of carnosine your body can make doesn’t depend on the amount of histidine present but on the amount of beta alanine.



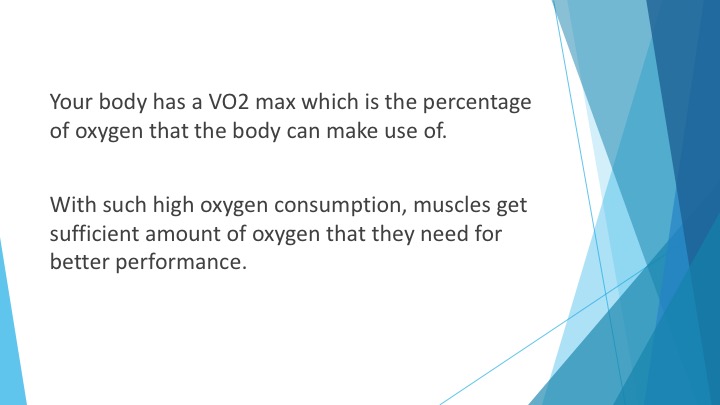
**S12 :** Although the body has processes for forming beta alanine, the best way to get this amino acid is from supplements. It helps form carnosine, which then plays a role in increasing muscle performance for intense workouts.

During high intensity workouts, the lactic acid concentration in the muscles increases. This increases acidity in the muscles and causes fatigue. Carnosine assists in reducing this acidity so that you don’t tire quickly.



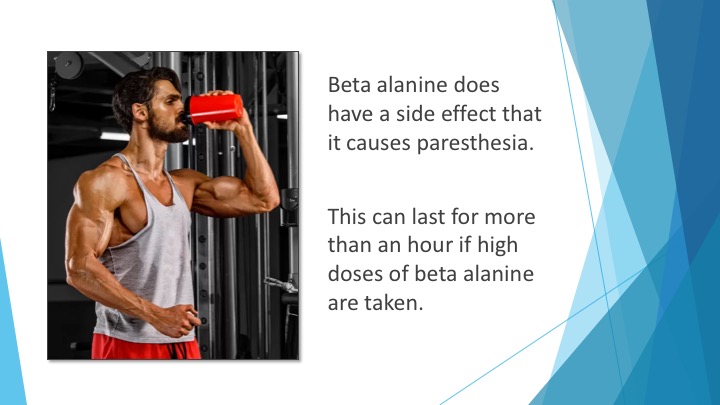
**S13 :** Carnosine has buffering capabilities and it levels out hydrogen ions that accumulate in the muscles during workouts. Most supplement plans include taking beta alanine for 28 days so that the carnosine levels in the body are maximized.

Beta alanine also increases endurance during intense anaerobic exercises such as sprinting and weightlifting.



**S14 :** Your body has a VO2 max which is the percentage of oxygen that the body can make use of. In the presence of beta alanine, your body’s VO2 max increases from 90 to 115%.

With such high oxygen consumption, muscles get sufficient amount of oxygen that they need for better performance.

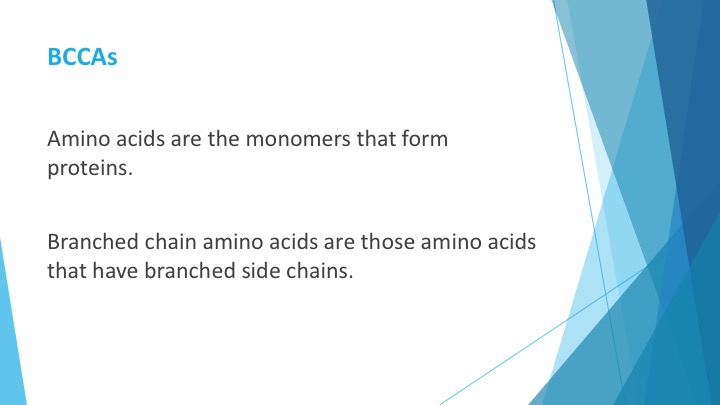


**S15 :** Beta alanine does have a side effect that it causes paresthesia. This is a condition in which the user feels a prickly sensation on the hands and face.

This can last for more than an hour if high doses of beta alanine are taken. Despite that, beta alanine helps boost muscle building by forming carnosine which increases fatigue threshold and buffers muscle acidity.



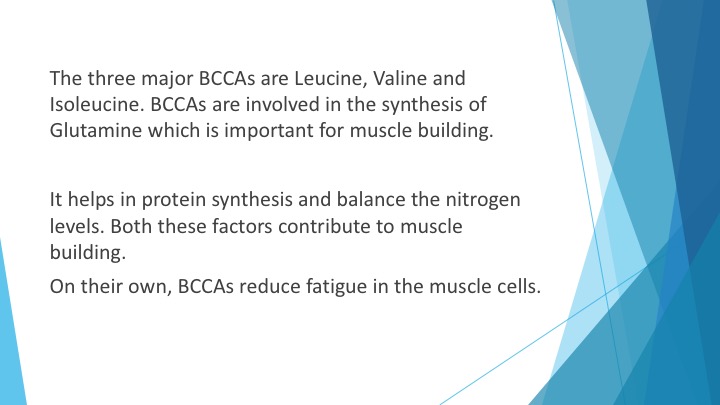
**S16 :** A study published by International Journal of Sports Nutrition and Exercise Metabolism showed that beta alanine actually helped enhance the effect of creatine when taken in conjunction.



**S17 : BCCAs**

Amino acids are the monomers that form proteins. Since muscles are made up of proteins, any supplement that contains amino acids is good for muscle building.

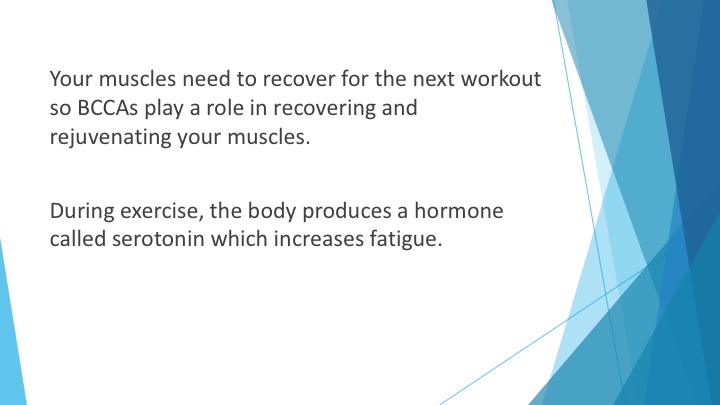
Branched chain amino acids are those amino acids that have branched side chains.



**S18 :** The three major BCCAs are Leucine, Valine and Isoleucine. BCCAs are involved in the synthesis of Glutamine which is important for muscle building.

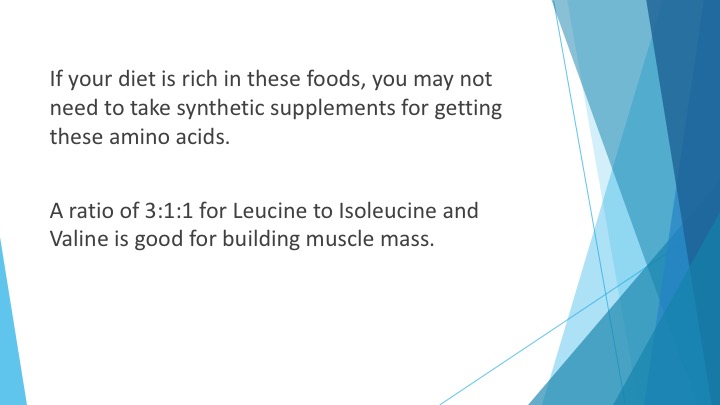
It helps in protein synthesis and balance the nitrogen levels. Both these factors contribute to muscle building.

On their own, BCCAs reduce fatigue in the muscle cells. When the body needs extra energy during workouts, it breaks down these amino acids for energy. So, you can work out for a longer time. Also, these amino acids accelerate recovery time.



**S19 :** Your muscles need to recover for the next workout so BCCAs play a role in recovering and rejuvenating your muscles. BCCAs are also involved in enhancing protein absorption in the body so that these nutrients are not lost and can be put to good use in the muscles.

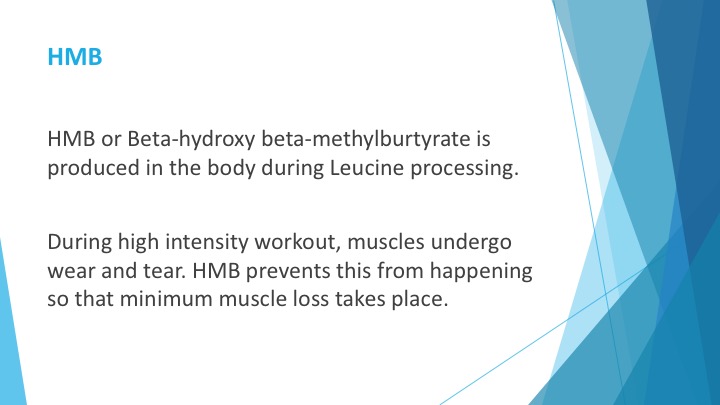
During exercise, the body produces a hormone called serotonin which increases fatigue. Branched chain amino acids lower the levels of this hormone to reduce fatigue.



**S20 :** These amino acids are present in legumes, meat and dairy products. If your diet is rich in these foods, you may not need to take synthetic supplements for getting these amino acids.

All three branch chain amino acids are equally important.

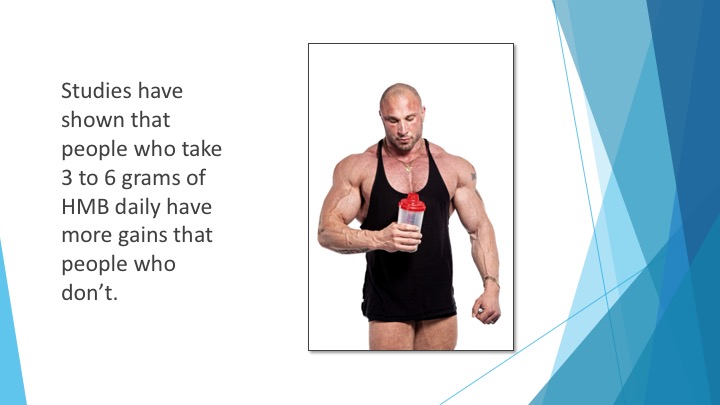
A ratio of 3:1:1 for Leucine to Isoleucine and Valine is good for building muscle mass.

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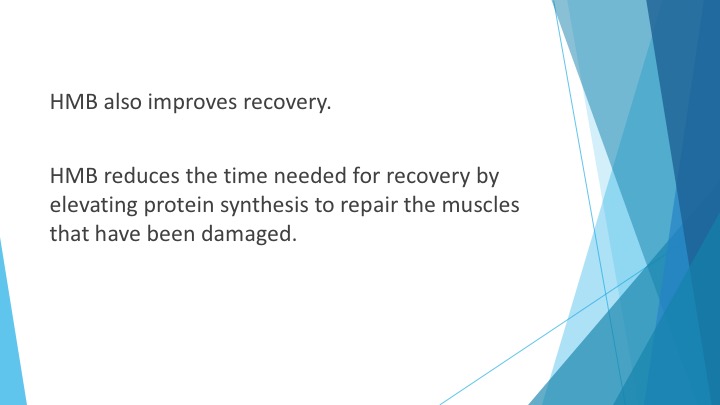
**S21 : HMB**

HMB or Beta-hydroxy beta-methylburtyrate is produced in the body during Leucine processing. It’s helpful in preventing muscle breakdown.

During high intensity workout, muscles undergo wear and tear. HMB prevents this from happening so that minimum muscle loss takes place. It also increases the levels of protein synthesis which is a great way for increasing muscle mass.

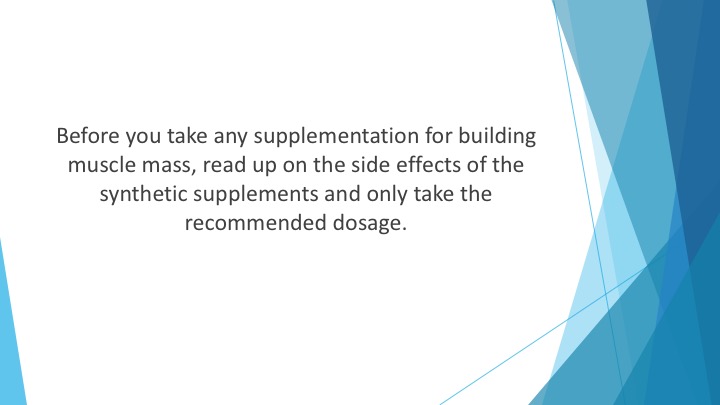


**S22 :** Studies have shown that people who take 3 to 6 grams of HMB daily have more gains that people who don’t.



**S23 :** HMB also improves recovery. During exercise, your muscles undergo micro-tear and get sore due to a buildup of hydrogen ions.

HMB reduces the time needed for recovery by elevating protein synthesis to repair the muscles that have been damaged. Being able to exercise harder and longer, you will experience an increase in muscle mass.

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**S24 :** Before you take any supplementation for building muscle mass, read up on the side effects of the synthetic supplements and only take the recommended dosage.