

## Big Bodybuilders - Are they Strong as much as they look?

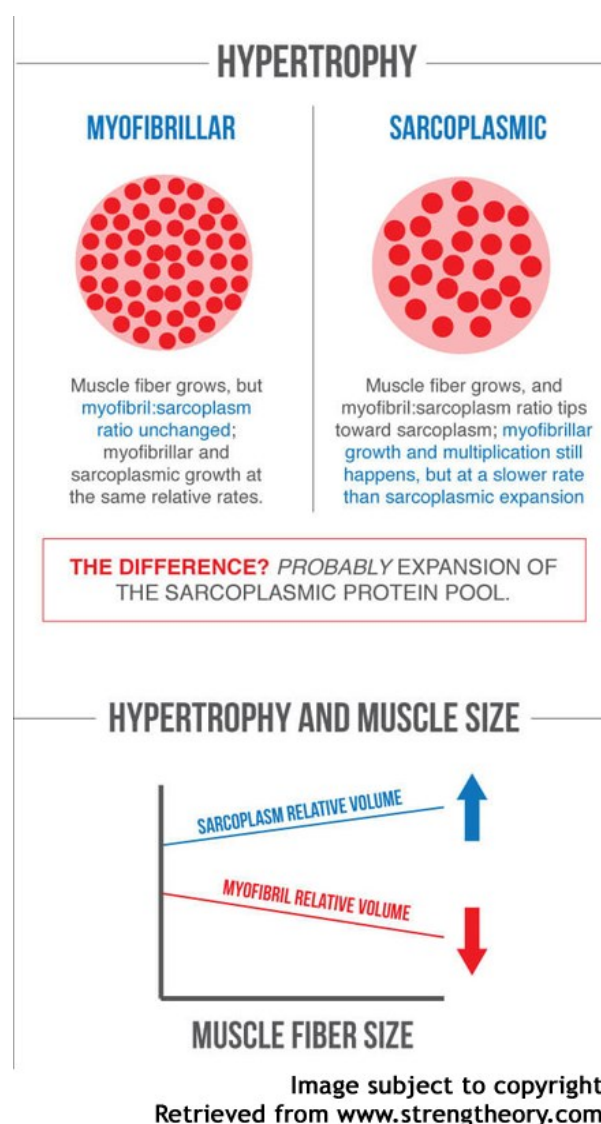
You all must have seen big muscular giants on the banners and advertisements of gyms and training joints didn't you. Have you ever wondered that an average looking man with enough guts might knock them down? If no, then now is a good time to learn one or two things about **muscle hypertrophy**. While you might be aware of the fact that lifting heavy weights will get your muscles all swollen up, it heavily depends on how you train.

Our muscle fibres, popularly known as **Myofibrils**, usually break when we lift a heavy weight. Consequently, your body starts to repair and replace them with more and more new, fresh fibres. Meanwhile it also fills a fluid, technically called **Sarcoplasmic Fluid (SFL)**, around the broken fibres for cushioning.

Well, here comes the difference- If your training method results in more and more FLUID to fill up rather than formation of myofibrils in the muscular space then you won't be left with much strength, as it is rather obvious that you don't expect a water filled balloon to do something, right! This in medical terms is called **Sarcoplasmic Hypertrophy (SH)**.

While if your training causes the fibres to be substituted by newer myofibrils, your muscle strength INCREASES as these are basically the unit of your motor coordination, which in turn is called **Myofibrillar Hypertrophy (MH)**.

**Here comes the twist-** The infamous steroid injections acting like testosterone produced naturally in males, increase the **sarcoplasmic protein content** and hence, SFL in the muscle increases, in turn tipping the balance to SH rather than MH, thereby leaving the bodybuilder with swollen muscles and probably much less strength!



### THANK YOU

Our most sincere gratitude rests with our driven and visionary sponsor for this issue-

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### Doping in sports:

Recently wrestler **Narsingh Yadav** was in the news for being banned from contesting in Rio Olympics over doping charges. Since 2009, 687 athletes have been banned for doping related offences in India. However little do we know as what doping is exactly or what are its side effects. **Doping** is the use of **performance-enhancing drugs** by athletic competitors. It gives a competitive edge over other players, and thus considered unethical and is prohibited by most sports organizations. Drugs used for doping can be:

- ♦ **Anabolic Steroids:** Promote the growth of muscles. They help in faster recovery and often used in Bodybuilding, weightlifting, wrestling, etc.
- ♦ **Diuretics:** When you take steroids or drug they inevitably leave a trail that can easily be found while testing. This is generally avoided by taking Diuretics, which increases the urine output that excretes out traces of the drug.
- ♦ **Beta blockers:** These are used to treat heart diseases and problems of blood pressure. They act by substantially slowing down the heart rate, and is thus often used by archers, shooters, and billiard players.
- ♦ **Cannabinoids:** It is well known for producing a feeling of euphoria and a state of happiness, and thus keeps athletes going on for hours.
- ♦ **Narcotics:** They act as analgesics i.e. they reduce the sensation of pain, thus allowing athletes to train for a longer period.

The severe side effects include:

**In Men:** Impotency, Gynaecomastia (breast formation), erectile dysfunction, impaired liver function, baldness.

**In women:** Hair loss, masculine body, irregular menstrual cycle, deepening of voice.

### BEWARE!

*Drugs will turn  
your fondest  
memories into  
nightmares.*

### DISCLAIMER

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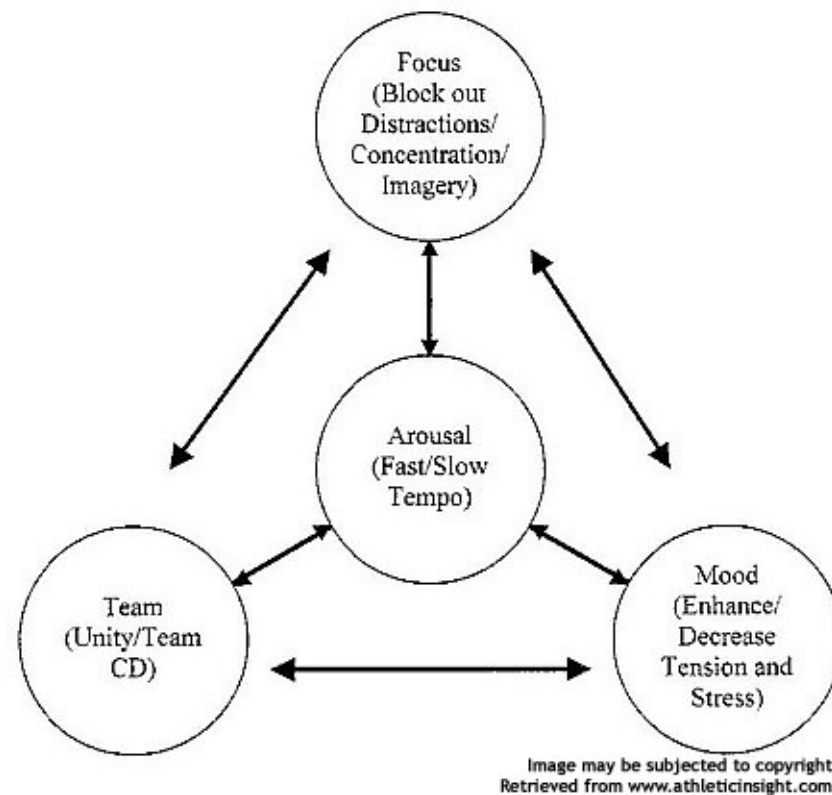
## Emotional Health:

Emotional health means the overall psychological well-being of a person. It includes the way we feel about ourselves and other fellow people in the society, the ability to manage our feelings and deal with our difficulties at the same time, and how much meaning and joy we take out from the life we live.

It is easy to acknowledge the many egregious benefits to participating in sports. But there is also a dark side of the spectrum that shouldn't be neglected. The physical strain athletes undergo is well-known and commonly discussed. Yet what about the mental struggles they face, not just at professional levels but at all levels.

Physical strains endured by athletes are common and significant. Yet, psychological strain comes not just from physical injury, but can also rise from the immense pressures of competition, performance, and failure.

Negative external or internal psychological factors can lead to repression, causing breaks in focus and preparation, poor performance and, at times, injuries to the athlete. They can produce physical interruptions such as muscles tightening, shaking and increased hidrosis. If not dealt with, these factors may not only affect the athlete but the team as a whole. To combat these effects, coaches and athletes can focus their efforts on tactics such as goal setting, routines, visualization, and confidence.



## Sprain: What happens exactly?

**SPRAIN:** After playing Football, have you ever noticed a swelling or a pain in your foot? You might be having what is called a sprain. Scientifically speaking, sprain is your body's reaction towards tearing of the ligament, a tissue that connects to bones causing pain, bruising, swelling and decreased ability to move the limb.

**SYMPTOMS:** Use the **RICE** formula instantly after the injury :

- ♦ **Rest:** Limit the amount of physical work you do. Try to avoid putting weight on your



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sprained area.

- ♦ **Ice:** Use an ice bag or a cold compress to help reduce swelling for the first 48 hours after the injury. This should be done every 3 to 4 hours for 20 to 30 minutes until the swelling is gone.
- ♦ **Compression,** or wrapping the sprained area with a splint, like an air splint, or an elastic wrap will help decrease swelling.
- ♦ **Elevate:** The sore area with the help of pillows while applying ice and always when you are sitting or lying down.

## Building Muscular Body on a VEG Diet:

Building a muscular body requires a lot of dedication and unshakable faith, and none of it lacks in a student. Being a vegetarian is considered a hindrance so let us get it out of the way. Vegetarians can build muscle and strength just like meat-eaters.

To gain muscle mass, it is required to consume 1.2-2g protein per pound of body weight. To take such a high amount of protein isn't easy but it is required to help you bulk up.

A 30:30:40 ratio of Protein, Fat and Carbohydrate is a decent starting point and will help you achieve your bodybuilding goal. And remember, if you are taking a greater caloric intake, it is important to maintain a regular exercising and strength training routine. Vegetarians can get the required nutrients from:

### Nuts

These crispy and delicious snacks are loaded with protein and calories which make them one of the best body building foods. Nuts such as almonds and cashews are packed with protein, fats and fibres, which help you in getting those extra calories even after sweating it out in the gym.

### Beans

Beans such as chickpeas are some of the most effective protein-rich foods that can be included in the diet for building muscle. Beans not only improve bowel movement but also boost up insulin response, that is essential for proper growth.

### Fruits

Fruits are often avoided by fitness freaks because of their high fructose content that causes fat gain. But certain fruits such as bananas and apples are extremely beneficial for muscle building. These fruits are loaded with nutrients which are vital for increasing lean muscle mass.

### Fermented Dairy Products

Fermented dairy products such as buttermilk and yoghurt work as magic foods for muscle building. Fermented dairy products work better than regular milk because they have high calories content, and the presence of probiotics in these foods improve digestion of other foods and their maximum absorption.

### Leafy Greens

Leafy green vegetables such as spinach along with beet and avocado are rich in calcium, folic acid, vitamins A, B, C, D and E – all of which are vital for improving muscle movement, reducing inflammation and neutralizing the harmful effects of oxidative stress. The antioxidants and nutrients present in vegetables speed up muscle and tissue recovery, which is an inherent part of bodybuilding.

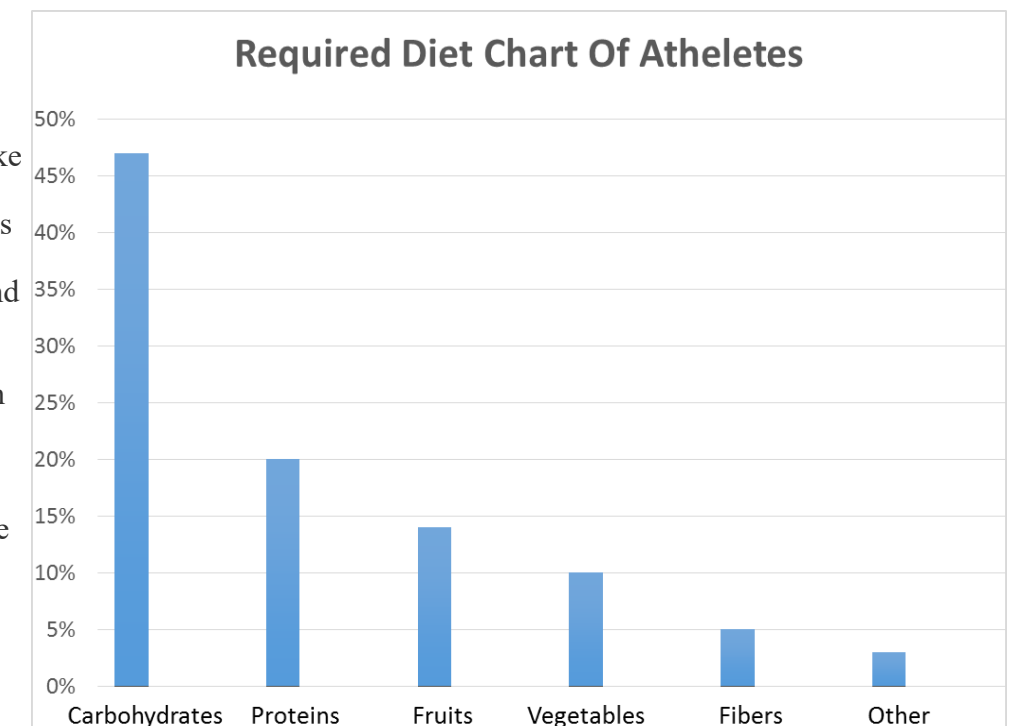


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