TRANSFORMATION GUIDE

One step ahead and a giant leap to mankind
Congratulations on taking the first step towards your transformation journey.

We are here to provide you the best guidance around Nutrition, Training and Supplementation.
However, nothing works if you do not put study into implementation.

Remember we are just navigators while the journey is yours

- **Himanshu Arora**

Certified Nutrition & Fitness Consultant, Founder at FAT2FITPRO

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Introduction

Fat2Fitpro is here to help you lose fats, gain muscles and stay healthier. Fat2Fit works with every type of client, from a person with sedentary lifestyle, looking to lose weight, build muscle mass or stay a healthier, like never. We have transformed innumerous people over years.

About the Author

My name is Himanshu Arora. I am a Certified Nutrition and Fitness Consultant. I am Qualified Lecturer in the field of Biosciences. I have qualified the National Eligibility Test for Lectureship & Research fellowship conducted by CSIR-UGC (Council for Scientific & Industrial Research and University Grant Commission) thrice in June 2004, Dec 2004 & June 2005.

I have a master's degree in life sciences with specialization in molecular biology and genetics. In addition, I have profound knowledge of Fitness and Human Physiology being my area of expertise.

Over years I have transformed over hundreds of people and my attempt to put forward my best efforts to transform lives of many.

TRANSFORMATION GUIDE

Well before we take a plunge into the topic of discussion today, let me set apt expectations as to what you will get from this ***transformation guide****. Here we lay down the fundamentals of* ***Nutrition, Training and Supplements*** *in the order of preference. Our intention is to help you teach few aspects of science so that you can create your own transformation plan be it* ***weight loss, muscle gain or enhance body composition****. It is well stated that if you give a man a fish, and he will be hungry again to-morrow; teach him to catch a fish, and he will happier for the rest of his life.*

NUTRITION

Nutrition

Nutrition is the intake of food which provides the nutrients an organism needs for growth, energy and repair to be healthy. According to **WHO or World Health Organization** poor nutrition can lead to reduced immunity, increased susceptibility to disease. Nutrients can be divided into two categories: macronutrients, and micronutrients.

Macronutrients

Macronutrients are those nutrients that the body needs in large amounts. These provide the body with energy (calories). The beginning of each word gives you a little clue into what they may mean. **"Macro"** comes from the Greek word **makros**, which means large. Nutritionally speaking, macros are usually measured in grams, such as grams of fat or proteins. Many macros-based diets classify macronutrients in three ways:

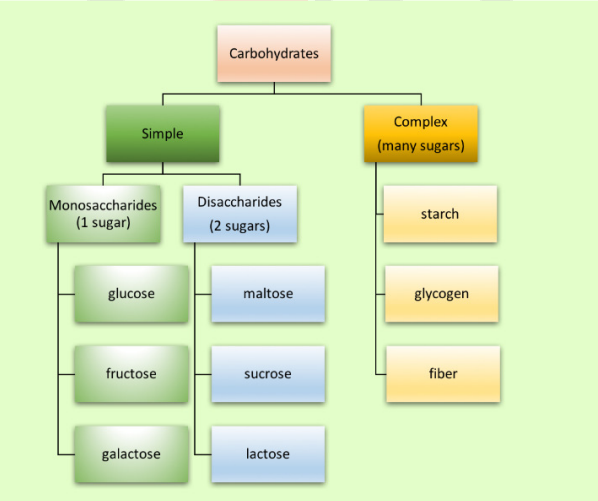
- **Carbohydrates:** Found in foods such as breads, pastas, and fruits that provide 4 calories per gram
- **Fats:** Found in foods such as oils, nuts, and meats that provide 9 calories per gram
- **Proteins:** Found in foods such as eggs, fish, and tofu that provide 4 calories per gram

Now let us talk about each of these macronutrients and how they are utilized in our body.

Carbohydrates

Carbohydrates are the body's main source of energy. Carbohydrates can be divided into two main types: simple and complex. **Simple carbohydrates** are made up of just one or two sugar units, whereas complex carbohydrates are made up of many sugar units

All forms of Carbohydrates are eventually broken in the body in the form of Glucose. Glucose is a very small molecule and easily travels from cell to cell.



After a meal, the blood sugar (glucose) level rises as carbohydrate is digested. This signals the beta cells of the pancreas to release insulin into the bloodstream. The Glucose present in the bloodstream can have one of the three fates

- **Glucose** in the blood is immediately utilized to provide energy if a person is very active.
- **Glucose** is converted into **Glycogen** which is then stored in Liver and Muscles.
- **Glucose** is converted into **Fats** and stored in the body.

People generally can tolerate 4-8 grams of glucose in their blood at any specific time. Levels above 10 grams are considered too high.

"Imagine the havoc a can of Soda can cause to the body as 300 ml drink contains as much as 30 gm of Sugars"

Complex carbohydrates cannot be transferred directly to the bloodstream and must be converted first, which can take quite some time. That is a good thing, because this delay ensures that the blood isn't overflooded with glucose.

Fats

Fats give you energy, and they help the body absorb certain vitamins. Essential fatty acids help the body function, but they aren't made by your body—you must consume them. Fats are an important part of your diet but some types are healthier than others. Unsaturated fats, which are liquid at room temperature, are considered beneficial fats because they can improve blood cholesterol levels. Examples of unsaturated fats are olive oils, nuts, canola oil, avocado, pumpkin seeds, flax seeds, omega-3 fish oil.

However, there some kind of fats like the saturated and trans fats which increases the risk of cardiovascular issues. You should aim to limit those fats like red meat, cheese, and ice cream. The **American Heart Association** goes even further, recommending limiting saturated fat to no more than 7 percent of calories.

Fats are broken down in the body to provide fatty acids which can be stored by any cell in the body and transported via bloodstream. If you do not have enough cells to store fatty acids, body will start created new fats stored cells called **Adipocytes**. Group of such cells combine to form **Adipose tissues**. This is another reason why body tend to store more fats if they cannot be utilized to provide energy.

However it is to be borne in mind that they are still important for human survival as they are used to dissolve fats soluble Vitamins, Enzyme and hormonal preparation in the body. Hence one should not eliminate fats from the diet.

Proteins

Proteins are essential for growth and repair of the body and maintenance of good health. Not only that proteins are also used by **immune system, skin, hair, hormones, enzymes** and much more. Protein is one of three macronutrients, which are nutrients the body needs in larger amounts. If you are looking to build muscles, then remember that it is all made up of proteins.

Proteins are large molecules made up of long chains of amino acids. Amino acids are the building blocks of protein. There are about **20 different amino acids** commonly found in plant and animal proteins. Out of these 8 amino acids cannot be prepared by the body and hence called essential amino acids. These must be provided in the diet.

Proteins are present in both animal and plant products. Great sources of proteins are *chicken, fish, eggs, lamb, paneer, soya, tofu, yogurt, lentils, black gram, kidney beans* and much more.

Water

Water is essential for life and although humans can survive for several weeks without food, they cannot go without fluids for more than two to three days. On average, water makes up 60% of body weight (range 45-75%) and is essential for the correct functioning of all the cells in the body. One should aim to drink a *minimum of 3-4 liters of water per day*.

Here are few important functions of water in the human body

- Regulates body temperature
- Moistens tissues in the eyes, nose and mouth
- Protects body organs and tissues
- Carries nutrients and oxygen to cells
- Lubricates joints
- Lessens burden the on kidneys and liver by flushing out waste products
- Helps dissolve minerals and nutrients to make them accessible to your body

Micronutrients

Micronutrients as the word signifies are those that are required by the body in minute amount. Deficiency can cause various diseases that we have touched upon before.

Vitamin A deficiency can lead to **Night, Blindness**, **Iron** deficiency can cause **Anemia**. You see **anemia** is a condition where red blood is depleted either in morphology or number.

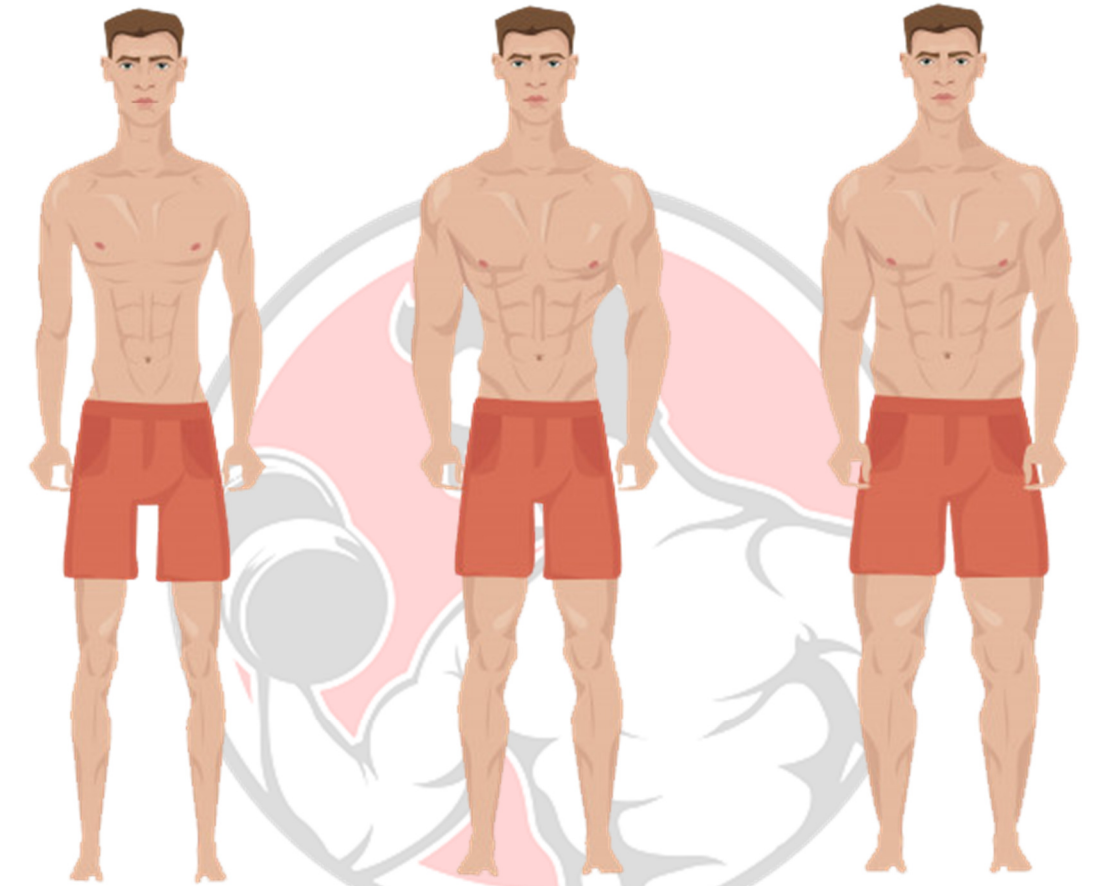
Now you might have heard about **Pulse Oximeter** in these torrid circumstances. It helps us understand the oxygen saturation in the body.

The role of oxygen tension level is a well-known phenomenon that has been studied in oncology and radiotherapy since about 60 years. Oxygen tension may inhibit the propagation of viruses and hence modulating oxygen metabolism may constitute a novel approach to treat viral infections.

Oxygen saturation refers to the amount of oxygen that's in your bloodstream. The body requires a specific amount of oxygen in your blood to function properly. The normal range of oxygen saturation for adults is 94 to 99 percent. Anyone with an oxygen saturation level below 90 percent will likely require supplemental oxygen.

Now you see the oxygen that we breathe in is carried by our red blood cells to all parts of the body. These red blood cells contain a substance called hemoglobin. The haem part of **hemoglobin** is nothing but iron and if there is a deficiency of iron, that leads to inevitable deficiency of red blood cells.so if you body is running short of **RBC** they will not be able to transport oxygen and nutrients throughout the body and one might feel very tired and can experience breathing problems too and that is when you might require supplemental oxygen.

Body types



METABOLISM

Metabolism

So how do we all start to plan our diet by doing some internet research on quick weight loss. Honesty tell me how many searches have google on few quick weight loss tips and what do we generally land up into drink lemon water to lose weight fast, go on all fruits and vegetable diet. So, does it work? yes perhaps for certain span of time and when you are back to basic meal plan, the weight bounces back again. GM diet is the **General Motors** diet was supposedly created for the employees of General Motors in 1985

What basically happens in GM diet, eating just fruits and veggies, majority of the weight loss you experience is water weight and then it is a vicious circle and it bounces back.

So, what is the solution to this gruesome bugaboo? **Quantified Nutrition** is your answer. We need to understand that the human body is nothing but a machine and hence we need to act smart of handle this sophisticated biological machinery.

Let us say you have two separate vehicles; A fast burning Ferrari and a Bajaj Platina. The two vehicles are completely different from each other. On one hand we have a superfast machinery which has high fuel consumption and gives a mere mileage of 7 km/liter. On the other hand, Bajaj Platina can give a mileage of up to 100 km/liter. If we add 5 liters of petrol to each out them. While the first one can cover only 35 kms, the other can cover as much as 500 km.

Similarly, this is what happens between two individuals, while one finds it difficult to gain weight with a given amount of food, the other can gain weight substantially with the same amount of food sources. This is because their lifestyle and energy requirements are different. We are now getting to the interesting part, so stick with us.

Now let us understand the most important aspect of Quantified Nutrition. Well in Nutritional arena, calories is segregated into two independent concepts. Calories In or the Calories or energy we consume through food and Calories Out/energy we burn via daily activities. All denoted by kcal or Calories with a capital 'C'. Most of the foods available in the market would have Calories label on it and it will help us decipher, how much energy we are putting into our body.

Energy Balance

Do you happen to remember the First Law of Thermodynamics or the principle of conservation of energy. Well it states that energy can neither be created nor destroyed but it can be converted from one form to another. Hence, if Calories In, in the form of food is equal to Calories out (which will be your Total Daily Energy Expenditure) you maintain your weight.

If you **Calories In**, is more than **Calories Out**, you gain weight and if your Calories out is more than Calories in, you lose weight.

Imagine a tank with a storage reservoir and two taps, one where the water is flowing in and one where the water is flowing out. What if I open the influx tap more than the outlet, the water will start accumulating and water level will increase and there will be a moment when water will start getting stored in the reservoir. Now what if increase the outflow of water and reduce the water flowing in, the level will start going down. This is what happens to our body, if we increase our calories in, we start filling ourselves and there will a point of time when fat storage starts occurring. If we reverse this, we start losing weight. This concept is very simple and straight forward:

- **Weight Loss:** Calories In < Calories Out
- **Weight Gain:** Calories In > Calories Out
- **Maintenance:** Calories In = Calories Out

BMR & TDEE

We have devised a simple **Weight Loss** or **Muscle Gain Calculator** for you. This is based on few simple algorithms to find your **BMR and TDEE**.

BMR is **Basal Metabolic Rate** which is nothing but the number of Calories that you burn when your body are rest. This is essential for your heart to keep pumping, lungs to keep breathing, kidneys to keep filtering toxic products and so on.

Once this is calculated, your **TDEE or Total daily energy expenditure** is derived based on your activity level. This your maintenance Calories or the amount of Calories you require to maintain body weight.

Weight Loss: Eat 200-500 Calories below your Maintenance Calories and tweak based on your weekly progress.
Weight Gain: Eat 200-300 Calories above Maintenance Calories and tweak based on your weekly progress

Online Calculator: https://fat2fitpro.com/2020/12/bmr-tdee-calculators/

Besides the above online Calculator in case you want to find out the BMR & TDEE yourself, you can make use of the below mentioned formulas.

English BMR Formula

Women BMR = 655 + (4.35 x Weight) + (4.7 x Height) - (4.7 x Age)
Men BMR = 66+(6.23 x Weight) + (12.7 x Height) - (6.8 x Age)

- *Weight in Pounds, Height in Inches, Age in Years*

Metric BMR Formula

Women BMR = 655 + (9.6 x Weight) + (1.8 x Height) - (4.7 x Age)
Men BMR = 66+(13.7 x Weight) + (5 x Height) - (6.8 x Age)

- *Weight in Kilograms, Height in Centimeters, Age in Years*

Once you know your BMR, you can calculate your Daily Calorie Needs based on your activity level using the Harris-Benedict Equation.

TDEE or Maintenance Calories Calculations

For sedentary (little or no exercise)
= BMR x 1.2
For lightly active (light exercise/sports 1-3 days/ week)
= BMR x 1.375
For moderately active (moderate exercise/sports 3-5days/week)
= BMR x 1.55
For very active (hard exercise/sports 6-7 days a week)
= BMR x 1.725

Let us say you want to reduce body fat. In this scenario you first need to find your BMR and TDEE from the above equation and the start eating 200-300 Calories below that. So if your BMR is 1500 Calories an you are living a sedentary lifestyle then your TDEE is 1500 x 1.2 = 1800 Calories/day. Hence, you scan start with 1600 Calories diet day and tweak based on your progress.

DIET PLANNING

Diet Planning

While there are several types of diets to choose from the crux is **Caloric deficit** if you want to lose weight and Caloric surplus if you want to gain weight. Caloric deficit means that you are eating below your **maintenance Calories (TDEE)** and Surplus means that you are eating above your TDEE. These diets vary in the macronutrient's ratio, which means the amount of proteins to carbs to fats that included.

Remember that macronutrient ratio will not play a substantial role in losing weight or gaining muscles and they are overrated. However, you still need to ensure that you include decent amount of proteins.

Plan a diet in such a manner that your protein intake is at least 1.5 to 2.2 g/kg body weight. The rest of the Calories can come from Carbohydrates and Fats.

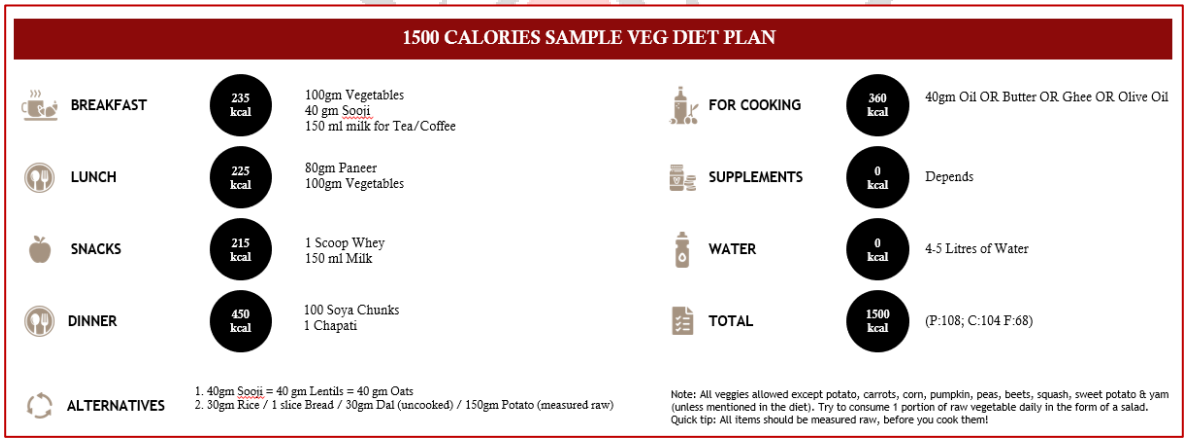
Example: Let us say your current weight is 70 kg and you are planning a 1500 Calories diet for weight loss. Here you need to ensure that your protein intake is between 105 g to 154 g per day. If your protein intake is somewhere in between, say 120 g then your Caloric intake from proteins is 120 x 4 = 480 Calories. The remaining of the Calories (1500 – 480 = 1020) you can get from Carbohydrates and Fats based on your food preferences.

MyFitnessPal

In order to track your Calories and plan your diet you can use **MyFitnesspal** application. We have created a step by step guide which will help you prepare the plan. The Youtube link is provided below. The application is use not only to plan your meal but also to track it efficiently.

Step by Step Guide to use MyFItnesspal: https://www.youtube.com/watch?v=KxOecz20wZA

Sample Diet Plans – Veg & Non-Veg (1500 Calories)



1500 CALORIES SAMPLE NON-VEG DIET PLAN

BREAKFAST	366 kcal	100gm Vegetables 2 Eggs 1 scoop of Whey 1 slices Bread
LUNCH	397 kcal	200gm Chicken Breast 150gm Potato OR 30gm Rice 100gm Vegetables
SNACKS	155 kcal	2 Bread slice
DINNER	223 kcal	150gm Chicken Breast 150gm Vegetables
ALTERNATIVES		1. 2 Eggs + 2 slices Bread OR 1 Protein bar 2. 30gm Rice / 1 slice Bread / 30gm Dal (uncooked) / 150gm Potato (measured raw)

FOR COOKING	360 kcal	40gm Oil OR Butter OR Ghee OR Olive Oil (P:0; C:0; F:40)
SUPPLEMENTS	0 kcal	Depends
WATER	0 kcal	4-5 Litres of Water
TOTAL	1500kcal	(P:136; C:88 F:68)

Note: All veggies allowed except potato, carrots, corn, pumpkin, peas, beets, squash, sweet potato & yam (unless mentioned in the diet). Try to consume 1 portion of raw vegetable daily in the form of a salad.
Quick tip: All items should be measured raw, before you cook them!

FAT2FIT

TRAINING PRINCIPLES

Training Principles

There are fundamental principles that training programs must follow if they are going to be effective. I don't want you to waste years of your life, as I did, before finding out what really works. While there are innumerous strategies, our goal at Fat2FitPro is to help you lose fats, gain muscles and stay healthier. Hence our training strategies resolve around that only.

If you are new to training, this will be the best training year of your life as your potential for growth is the greatest.

If you have been training a while and haven't seen the progress you thought you would, a renewed focus on the basics will probably benefit you greatly. It's not too late to start now, but it would be silly to continue doing what you are doing and expect a different result.

Weight training is an organized exercise in which muscles of the body are forced to contract under tension using weights, body weight or other devices in order to stimulate growth, strength, power, and endurance. Weight training is also called resistance training and strength training.

The basis of weight training success is a combination of factors sometimes called FITT.

- **Frequency of training** — How often
- **Intensity of training** — How hard
- **Time spent** — Session time
- **Type of exercise** — Which exercises

Reps, Sets, and RM

You will need to know these basic terms used in workouts:

A **repetition (rep)** is one completion of an exercise: one chin-up, one squat, one arm curl.
A **set** is the selected number of repetitions before you rest. Let's say 10 repetitions to 1 set of arm curls. The rest interval is the time between sets.

The *1RM or repetition maximum is your personal best or the most you can lift once in any exercise*. So 12RM is the most you can lift for 12 repetitions.

Progressive Overload

Although **progressive overload** is usually used in strength training, the same idea can be applied to any type of exercise, including cardiovascular endurance exercises like running. Progressive overload is when you gradually increase the weight, frequency, or number of repetitions in your strength training routine.

This concept is very simple. You need to progress overtime. Many researchers suggest that Volume is one of the primary driving factors to build strength and muscles.

Volume = Sets x Reps x Weight

The intention should be **increase volume** over a period. Try to increase the weight on the bar. If you cannot increase the weight, increase the number of reps. If you cannot increase either of this, try to do more sets for the same muscle group.

Recent researches have shown that you need not worry about lighter weight or heavier weights. All you need to focus on is progressive overload. **Muscle Hypertrophy or growth** does not depend on the weight and equal muscle growth has been observed with lighter or heavier weights.

Recovery

Training provides the stimulus and stress telling your body to adapt. Recovery allows the adaptations to take place. Thus, in order to make the most of your training efforts:

- Eat well.
- Sleep well.
- Do your best to minimize stress in your life.

Don't neglect any of these areas or it will hold you back.

Cardio

Cardiovascular exercises or cardio are basically any exercises that can raise your heart rate. They are beneficial for your overall cardiovascular health i.e. your heart and your respiratory system. *Cycling, running on treadmill, or cross-fit trainer are a few examples of cardio*. Even though cardiovascular exercises are great to burn additional Calories and help attain that Caloric deficit, they should not be only medium of exercise, if your target is fat loss. The reason being that when you start losing weight the body can start tapping into muscles as well for energy and especially when you are in Caloric deficit, and doing any weight training, you are not giving muscle ample reasons to stay.

However, this does not imply that you should get rid of Cardio. It has its own place, but you will best results when create a plan which includes both Cardio and strength training.

SUPPLEMENTS

Supplements

While there are plenty of supplements available in the market, only few have shown promising results. Today we will cover only three supplements.

Whey Protein

A lot of people think whey protein is only for bodybuilders or super jacked stick figures. This is not true. Whey protein is a tremendous tool for those of you looking to lose weight or build muscles. If you are not able to meet your daily protein intake, taking a supplement helps a lot. However, this is not essential for sure.

Whey is the liquid part of milk that gets separated when cheese is made. If you've ever opened a yogurt container and have seen a watery substance at the top, this is whey protein. This liquid substance is what is turned into powder form to create whey protein. Just in case you're wondering, this process also cuts out the 95% of the lactose so if you're allergic to lactose or if you are lactose intolerant, you really have nothing to worry about

There are three main forms of protein powder: whey concentrates isolate hydrolysate.

- **Concentrate** is about 70-80% protein with some milk sugar and fat.
- **Isolate** is 90% protein and has a little less sugar and fat.
- **Hydrolysate** is also known as hydrolyzed whey, has virtually 0 sugar and fat, and is mixed with enzymes for the faster digestion into the blood stream.

So, you might be wondering, does the type of protein matter? Not really.
The minute differences between them are not enough that it should cause you any stress or concern. Leave that sort of worry to your overall diet and exercise routine.

Creatine

Creatine is the number-one supplement for improving performance in the gym. Studies show that it can increase muscle mass, strength and exercise performance. Some people believe that creatine is unsafe and has many side effects, but these are not supported by evidences. **Adenosine triphosphate (ATP)** is the most basic form of energy in your body's cells. It plays a fundamental role in metabolism and muscle function. Unfortunately, you can only store enough ATP for 8–10 seconds of high-intensity exercise. After this, your body must produce new ATP to match the demands of the activity. Performing exercise at maximum intensity requires more ATP per second than your body can produce. Creatine supplements increase your body's stores of phosphocreatine, which is used to produce new ATP during high-intensity exercise.

BCAA

We now know that Proteins are important for muscle growth and several other aspects of human health. BCAA is nothing but **branched chain amino-acids**. As already indicated in the book previously amino acids are building blocks of proteins. There are certain essential amino acids that required by the body and if not provided, the body cannot grow. Of these essential ones, three are branched chain amino acids. Out of them Leucine required to generate signal for muscle protein synthesis and they all together are important for protein synthesis itself. If you are getting ample proteins in the diet from

foods and whey protein, you do not require BCAA. However, they can prove handy only when you are not getting adequate proteins.

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