

BALANCED DIET FOR HEALTHY LIFE

MR. PRADEEPKUMAR MAHANTAGOUDA

ABSTRACT

A balanced diet contains all the nutrients you need, in the right amounts to keep you healthy. Personal trainer and sports nutritionist need to explain how to get a balanced diet for fitness. For most people a balanced diet should consist of: 60% Carbohydrates, 30% Fat, 10% Protein, Vitamins, minerals and water, however this does vary depending on the activity levels, type of exercise and health status of the individual. A balanced diet is nothing superficial; it is not referred to the exact measure of each nutrient that you need to take. A balanced diet is an assortment of a variety of edibles from the food kingdom and all in moderation. And, by variety we mean in colour and nutrition levels.

The major nutrients that our body needs are proteins, carbohydrates, and fats. These provide the body with energy for various functions like beating of heart, activity of muscles and brain, etc. In addition, the body needs vitamins and minerals for its optimal functioning. To get a balanced diet and nutrition, it is important to choose foods from all food groups (cereals, pulses, poultry and meat, milk and milk products, fruits and vegetables)

Key words – balanced diet, sports players, health.

INTRODUCTION

Carbohydrates

These are found in starchy and sugary foods. Complex carbohydrates are mainly starchy foods, including potatoes, rice, bread and pasta and have additional nutritional value as they contain many other vitamins, minerals and fibre. Simple carbohydrates are the sugary ones, found in cakes, biscuits and sweets which are sometimes termed empty calories, as they provide no other nutritional benefits.

Carbohydrates are our main source of energy; in fact, energy from the breakdown of carbs is the only type of energy the brain can use. Carbohydrates are broken down in the liver and muscles, by a process known as glycogenesis. It is then stored as glycogen until it is needed.

Sports people, especially those involved in endurance events often require higher than the normal 60% carbohydrate intake in order to maintain large stores of glycogen and resist fatigue.

Fats

Fats serve several important purposes. They provide energy and when stored, provide protection to our vital organs. There are two types of fats, saturated and unsaturated. Saturated fats are 'the bad fats' which are normally solid at room temperature, such as butter and meat fat. Unsaturated fat is more difficult to breakdown and so is mainly stored within the body. Unsaturated fats are generally better for us and are often liquid at room temperature, for example olive oil and sunflower oil, although they can also be found in avacados and nuts.

A healthy diet should not contain more than 30% fat, and a maximum of 10% should be saturated fat. Fat provides a secondary source of energy and once the relatively small carbohydrate stores are exhausted, fat metabolism becomes the primary source of energy.

Proteins

Proteins are large compounds consisting of amino acids. There are 20 amino acids which the body requires. 12 of these can be synthesised within the body, and the other 8 (essential amino acids) must be consumed through our diets. Proteins are found in abundance in meats, eggs, fish, dairy products, nuts and seeds. Protein is essential for growth, repair and maintenance of our body tissues and for this reason, many athletes (mainly those requiring strength or size) will increase the amount of protein they consume, in order to help their muscles grow and develop strength.

Fibre

Fibre isn't really a nutrient but you definitely need it in your diet to keep your digestive system healthy and working properly. It can be found in fruits and vegetables.

Fluids

Fluids are vital in any sport to help prevent dehydration. When we exercise our bodies sweat to help cool us down. This results in a loss of water which must be replaced so as to not inhibit performance. Electrolytes such as sodium are also lost in our sweat. For this reason many sports drinks contain a mix of water and electrolytes. The presence of these electrolytes also helps the water to diffuse through the small intestine, back into the body.

Vitamin and Minerals

Vitamins and minerals are vital in the diet for a wide range of functions, but only needed in tiny amounts. They are vital for chemical reactions and also to help our bones, skin and teeth to grow Fat soluble vitamins such as Vitamin A and Vitamin D can be stored in the body. Vitamin A is found in vegetables, liver and eggs, Vitamin D is found in milk, fish and eggs. Water soluble vitamins cannot be stored in the body so we need to eat these in our diet; they include Vitamin C which is found in fruit and vegetables.

Minerals are also needed for healthy bones and teeth, as well as the growth of other tissues. They include things like Calcium which is found in dairy products and vegetables. Iron which is found in liver, beans and other green vegetables and used for hemoglobin production in red blood cells.

Supplementation

There are so many types of supplements now widely available, but for most people, providing their diet is balanced and varied, supplementation is not necessary. Some athletes may wish to supplement their diets to enhance their performance, especially when the difference between winner and runner-up can be a fraction of a second, or a single millimeter. The most commonly taken supplements among athletes are protein, and creatine.

Importance of protein

When training, our muscle fibres become damaged and our muscles require amino acids to help repair and build muscle tissue. This is known as muscular hypertrophy. Protein is important for all athletes but eating enough protein is particularly important for strength and power athletes. Protein is vital for body composition and this becomes increasingly important as we grow older. As we age, we lose muscle strength and find it increasingly difficult to retain muscle. Consuming protein enables us to maintain muscle and a leaner physique, supporting our joints and bones, maintaining metabolism and allowing us to lead a healthy lifestyle.

Protein is also satiating, meaning it keeps us fuller for longer. It takes longer than carbohydrates to breakdown and as a consequence, our bodies feel satiated (fuller) for longer.

From a body composition and health perspective this is important as our energy levels are stable and this decreases our likelihood of overeating. Protein can be used as an energy source when exercising for long periods of time. Protein is important in strengthening immune function and therefore reducing the likelihood of illness.

Protein and amino acids

Protein is made up of a number of distinct modules known as amino acids, there are 20 amino acids in total. Of the 20 amino acids, 8 are considered essential and 12 are considered non-essential. The 8 essential amino acids must be consumed within the diet, whereas the 12 non-essential amino acids can be synthesised within the body. The protein we consume in our diet, is broken down by our digestive system into their constituent amino acids and then reformed to create specific amino acids required for different functions within the body. The process of breaking down proteins into individual amino acids and then reforming is known as protein synthesis. Protein quality is important, not all amino acids are considered equal when it comes to muscle building and repair. The branch chain amino acids leucine, isoleucine and valine, all promote muscle protein synthesis, with leucine being considered the jewel in the crown!

When it comes to recommending protein intakes, it is important to consider the lifestyle and goals of an individual. The following factors must be considered:

- Training intensity and duration. The higher the intensity of training the higher the protein requirements. For example heavy weight training, plyometric training or crossfit training will break down (damage) the muscles more than aerobic running so a higher protein intake is needed.
- Age. As we get older, we have a reduced anabolic effect from amino acids meaning we cannot rebuild muscles as easily, so over the age of 40, increasing your protein requirements slightly, would be beneficial.
- Total calorie intake. If someone was on a reduced calorie diet or on a calorie deficit, then protein requirements may go up as protein helps maintain lean muscle and help avoid feelings of hunger.

The government recommendations are for 0.6 g per kilogram bodyweight, however, this would be considered the minimum requirements. Below are the guidelines for different population groups:

- 0.8 g per kg body weight for sedentary individuals

- 1.2-1.8 g per kg body weight for athletes
- 1.8-2.4 g per kg body weight for resistance trained athletes.

Protein contains 4 calories per gram and should be consumed as part of a balanced diet.

Optimising protein synthesis

- Calculate your protein requirements. Remember, exercise intensity and duration increases protein requirements and a power or strength related athlete should be aiming for 1.8-2.4 g per kg bodyweight per day. For example, a 90 kg Rugby player, may consume 2g/kg bodyweight, therefore their protein requirements for the day would be 180 g. These figures are for total body weight not lean body weight (fat free mass). Lean body weight is important, if two people have the same lean body weight then their protein requirements would be the same.
- Consume protein over 4-5 meals, approximately 4 hours apart throughout the day. This ensures optimal muscle protein synthesis throughout the day. Consuming protein elevates muscle protein synthesis but this will decrease after approximately 3 hours, so taking timing into account, can be beneficial.
- Quality and quantity of protein is important. Research demonstrates the positive impact that has on muscle protein synthesis, aiming for 3 g leucine per meal can be beneficial. Higher quality protein sources have more leucine content. Aiming for approximately 30-35 g of protein per meal is a good guideline for most people.

Approximate amount of protein foods:

- Chicken (3oz/85g) - 28g
- Steak (3oz/85g) - 26g
- Turkey (3oz/85g) - 25g
- Pork (3oz/85g) - 22g
- Egg (3oz/85g) - 6g
- Tuna (3oz/85g) - 22g
- Salmon (3oz/85g) - 22g
- Pinto beans (1/2 cup) - 11g
- Edamame beans (1/2 cup) - 9g
- Lentils (1/2 cup) - 9g
- Quinoa (1/2 cup) - 4g

Leucine content of protein sources

- Chicken (40g) - 7.5%
- Steak (38g) - 8%
- Fish (37g) - 8.1%
- Pork (38g) - 8%
- Egg (34g) - 8.8%
- Milk (31g) - 9.8%
- Whey (27g) - 11%
- Casein (27g) - 8.8%

Most athletes can get the recommended amount of protein through food alone without the need for supplements. Protein powders and supplements can be great for convenience, but are not a necessity even for elite athletic performance. High sources of protein in the diet have the benefit of containing many other nutrients for health and wellbeing compared to protein supplements.

However, when traveling, if you consume low amounts of protein in your diet or for simplicity, then supplementation can be very useful especially post training when athletes require protein for recovery. Just ensure you do not rely on supplementation as your sole protein source.

CONCLUSION

The study focusing on the importance of diet in the sports. Without the balanced diet the athletes will face the health risk. So the diet also an importance factor in the sports training, the sports trainers and coach should have the knowledge of balanced diet for the promotion of healthy sports field.

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