NUTRITION FOR A YOUNG BASKETBALL PLAYER

Nutrients

Are substances in food that are necessary for a person's growth, development, reproduction and ability to do strenuous work. We can divide them into 6 main categories:

- Carbohydrates
- fat
- protein
- minerals
- vitamins
- water

The energy we need, we get from 3 sources in our food; Carbohydrate, fat and protein, and it is of great importance that the percentages between these 3 substances match the needs of a young basketball player, who is still growing.

Vitamins are vital substances, that help the body utilize the other nutrients in a correct way. Minerals are also vital substances that help build and maintain the body. Water is the last, important substance. The human body consists of about 60% water, and staying hydrated is very important for the performance, both physical and mental.

Energy needs

Athletes have higher energy needs than less physically active people. The energy needs depend on the training sessions' frequency, duration and intensity. Most athletes need between (2500 – 6000 kcal) per day.

To cover the energy needs, you have to eat enough, so you get enough carbohydrates, fat and protein.

To be able to train optimally, the athlete's diet must have the correct ratio between carbohydrates, fat and protein. Recommended ratio:

60 – 65 E% of the energy from carbohydrates
25 – 30 E% of the energy from fat
12 – 15 E% of the energy from protein

Carbohydrates

Carbohydrates provide the primary fuel for exercising muscles. It is essential that young athletes consume lots of complex carbohydrates on a daily basis. In fact 60 – 65% of energy in the young athlete's diet should consist of complex carbohydrates.

Carbohydrates are found as starch and sugars in food. We get starch from whole grains, bread, cereals, potatoes, rice, pasta, fruit and vegetables.

Sugars we get from f. ex. sweet cakes and crackers, fruits, yoghurts, ice cream and candy bars and from sweet drinks like soft drinks and sweet juices. Athletes who train 1 – 2 hours per day should have an intake of 6 – 8 grams (g) of carbohydrates per kg. body weight (bw), per day. Those who train 2 – 4 hours or more per day need 8 – 12 g per kg. bw. per day.

Fats

Fats are important because they provide essential fatty acids to the body, and they allow the body to absorb fat-soluble vitamins. Fat can also be an important source of energy during long training-sessions. Fat also has an important task in insulation and support for internal organs. 25 - 30% of energy in a young athlete's diet should consist of Fat.

Fat contains fatty acids that we divide into saturated and unsaturated fat. Depending on the structure of the unsaturated fatty acids, we can again divide them into: monounsaturated fat and polyunsaturated fat. Unsaturated fat contains fatty acids that are particularly beneficial for physical performance and good health. **Athletes should make sure that most of their fat intake comes from unsaturated fat.**

Saturated fat is found in f. ex. milk products, cheese, butter, hard margarine, beef, crisps and chips.
Monounsaturated fat is found in f. ex. poultry, eggs, olives, olive-oil, avocado and nuts.
Polyunsaturated fat comes from i.e. fat fish (salmon, makrell, herring, trout), soft margarines, nuts and certain oils.

Protein

Proteins are the building blocks of the body. Its main function is to build and maintain tissue, especially muscle repair after exercise breakdown. If your energy needs are not covered and you are low on carbohydrates, the body will break down muscle mass. This is, of course, not desirable for athletes, because it decreases your muscle strength. If you eat too much proteins, the body will take what it needs for the protein synthesis, and the rest will eventually be stored as fat. 12 – 15% of energy in the young athlete's diet should consist of Protein. **If you have a well balanced diet, there is no need for protein supplements.**

Eat a little protein with every meal. By combining animal – and vegetarian – protein in your meals, you will ensure sufficient protein quality. Animal protein is found in red meat, poultry, fish, eggs and dairy products. Vegetarian protein is found in corn, rice, whole grain, peas, beans, lentils and nuts.

An athlete who is still growing and building muscles both naturally and through weight training, needs 1.6 – 1.7 g of Protein per kg bw per day.

Minerals

Minerals are utilized together with proteins for growth and repair of body tissue. Some examples of minerals are: calcium, sodium, potassium, magnesium, iron and sink. It is easy to cover the need for minerals through a

diverse selection of foods. A diet that includes a lot of fruit, whole grains and vegetables provides a high intake of vitamins and minerals. This is important, not only for the athlete's performance, but also to have a healthy immune system and help prevent lifestyle diseases such as cancer, diabetes, hypertension, heart conditions etc. At least 5 servings of fruit and vegetables per day is recommended.

Vitamins

Vitamins are nutrients that are necessary for the energy expenditure in our bodies. Different vitamins have different tasks and they cannot replace each other.

Vitamin A, D and E are fat-soluble. The best sources for vitamin A are fish oil, fat fish, whole milk, liver, margarine and carrots. Vitamin D is found mostly in fish oil, fat fish, low fat milk and margarine. Vitamin D is also produced in our skin when exposed to sunlight. Vitamin E is found in small amounts in most foods, but only oils from plants are rich in vitamin E.

Vitamin C and B are water-soluble. The need for vitamin B depends on the total energy expenditure and it increases with more energy spent. The different vitamins in the B – group are found in many foods, f. ex. whole grain, milk products, eggs and meat. If you eat enough and varied foods, you will cover your need for vitamin B.
Vitamin C is, among other things, important for our immune system and for efficient help in iron uptake, which is important for athletes. Some of the best sources for vitamin C are oranges, orange juice, kiwi, red peppers and potatoes. If you eat different fruits and vegetables every day, you will get enough vitamin C.

Fluid replacement

The human body consists of up to 60% water (McArdle et al.1985) and in order to perform well you need to be hydrated. You loose fluids continuously throughout the day through breathing, perspiration, faeces and urination. To cover your basic fluid loss, you should drink at least 2 litres per day.

Through physical exercise you loose a lot more fluid, so athletes must drink before, during and after training and games to compensate. It would be beneficial to a lot of athletes to drink more during the day. It is not harmful to drink too much. The kidneys will automatically get rid of the excess.

The colour of your urine can tell you a lot about your level of hydration. The darker the colour, the more dehydrated you are. Clear or light yellow colour means you are back in fluid balance

About nutrition supplements

The area of Nutrition supplements is a big industry. There is a vast variety of different supplements on the marked and a lot of them are aimed at athletes. They are often advertised as substances that will increase your strength and power, make you run faster, increase your endurance and so on. Many athletes use nutrition supplements believing that they will enhance their performance or that they cannot get full nutritional value from food and drinks alone.

We can organize supplements in two main groups; those that provide extra supply of nutrients, examples being iron pills, multivitamin pills or protein powder, and those that claim to enhance performance in one way or another. Examples are caffeine, creatine or ginseng.

A healthy, young basketball player should always seek to cover his energy and nutritional needs through a healthy and varied diet. **If a young athlete follows the guidelines laid out here, he has no need for nutrition supplements.**

You could consider a sports drink and a sports bar a supplement, and in that case, it is the exception to the “rule” of making do with food and drinks alone. They both have a natural place during and immediately after training and games. They provide a practical and simple way to add the much needed carbohydrates to the body.

Supplements that claim to enhance performance have flooded the market over the last years and athletes have every right to be sceptical to these products. The advice is: “Don’t touch them”. Insufficient research, untold side effects or even counter effects and possibly illegal substances should make it an easy choice.

The 4 food groups

These 4 categories of foods are the essentials of good nutrition (McArdle et al. 1985). If variety in each group is provided, you get all the essential nutrients. If the foods are stored correctly, cooking and handling are proper and the young athlete follows the recommended servings of each group, adequate nutrition is assured.

1. Milk and milk products. Examples: Milk, cheese, ice cream, sour cream, yoghurt. Recommended daily servings: 4

2. Meat and high protein. Examples: Meat, fish, poultry, eggs, with dried beans, peas, nuts or peanut-butter as alternatives. Recommended daily servings: 2

3. Fruits and vegetables. Examples: Dark green or yellow vegetables, citrus fruits, tomato. Recommended daily servings: 5

4. Cereal and grain food. Examples: Enriched breads, cereals, flour, baked goods, whole grain products. Recommended daily servings: 4 - 5

The meals

Breakfast, lunch and dinner should be relatively big meals that each contribute with 20 – 30 % of your daily energy intake. Your evening meal might be smaller, but it is still an important meal because it is the last chance to carb up for the next day.

Good examples for breakfast, lunch and evening meals are:

- Oatmeal with jam or fruit and milk
- Whole grain cereal with jam or fruit with milk or yoghurt
- Thick slices of whole grain bread with cheese, fish, meat or jam with fruit juice and milk.

Dinner provides the variation in your nutrients intake. Your dinner plate should look like this:

- ¼ fish, meat, poultry, eggs
- ¼ salad, vegetables
- ½ potatoes, rice, pasta

The in-between-meals are equally important. Some fruit and vegetables as in-between-meals make it easy to fulfil the recommended doses of 5 per day. Some good examples:

- Fresh fruit and vegetables
- Yoghurt with whole grain cereal
- Bread or crackers with spread or lunch meat
- Dried fruit, raisins, muffin, energy bar

Eat often

Never get starving hungry, and never get uncomfortably full. In other words: Eat often. That way the absorption of nutrients is more effective, and it is easier to cover your energy needs. It is also easier to have more variety in your diet.
Eat 4 main meals every day; breakfast – lunch – dinner – evening meal. In addition you should have 2 small in-between-meals, one immediately after practice or game and one during a break at school or after school or at night if intervals between meals are long (eat something if you are hungry).

The pre game meal

The pre game or pre-exercise meal should be eaten 3 – 4 hours before the event. You should have a comfortable feeling in your stomach; not full, not hungry. Some athletes will feel the need for a light snack about an hour before exercise, and in that case it should be in the form of quick carbohydrates, like a ripe banana or wheat roll with jam. It is important that you do not eat the last hour before exercise.

The pre-game meal should be high in carbohydrates, moderate in protein and low in fat, fibres and caffeine. Good examples of what the main ingredient in a good pre-game meal should consist of, are cereals, whole grain bread, oatmeal, pasta, potatoes or rice. Spaghetti Bolognese with lean meat in tasty tomato sauce is an excellent choice.

Have plenty of water with your meal and closer to game time. Save the sports drink for warm up time.

Eat and drink immediately after sessions

Loading should start within the first 30 minutes after activity, because the body is extremely anabolic and the uptake is at its most efficient. Likewise, rehydration should start immediately after exercise. The carbohydrates needed, you can get from both fluid (sports drink) and foods with high glycolic index.

Always have some food ready in your gym bag for after practice or a game. Optimally you need at least 1 gram pr.kg.bw of carbohydrates during the first 30 minutes after exercise. You also need some protein in this meal to start the tissue repair. Good examples of quick, after-session meals are:

- Cereal with milk or yoghurt
- 2 slices of bread with protein rich spread (cheese, fish, egg, lunch-meat) and chocolate milk
- 1 banana and 200 ml of raisins + peanuts – mix

Drink a glass of sports drink and a glass of orange juice with this meal, and you are well on your way to a good recovery. Note that the protein intake is especially important after weight training sessions. A fuller, more complete meal should be had within the next 2 hours.

SUMMARY

It is not expected for you to remember the exact amount of grams of carbohydrate and protein you need every day. We do not want you to count calories and weigh your food. You just need to understand the big picture, have a rough idea and live by it.

A few simple rules that you should remember:

1. Cover your energy needs.

Make sure you eat enough.

2. 60 – 25 – 15 (E%)

The % of energy in your diet that comes from (carbohydrates – fat – protein)

3. Eat often

Remember: never starving hungry, never uncomfortably full

4. Eat immediately after exercise.

First 30 minutes are crucial. 1 part protein, 3 parts carbohydrates

5. Drink before, during and after exercise

Drink so you don’t get thirsty. Check urine colour

6. Use fruits and vegetables as snacks and in-between meals

At least 5 per day