

A BALANCED DIET

To be healthy you need a balanced diet. That means a diet that matches your energy needs and give the right mixture of nutrients and fibre. Your body needs water, fibre and nutrients: carbohydrates, proteins, fats, vitamins and minerals.

Carbohydrates are used for energy. Some glucose is stored as glycogen in the liver and the muscles. When you are working out, they are broken down to glucose and used as a fuel for cell respiration.

Carbohydrates are found in fruits and vegetables, legumes and beans, breads, biscuits, cereals, rice, potatoes, pasta and spaghetti.

When you exercise, your body changes glycogen into energy. If you exercise for under 90 minutes, you have enough glycogen in your muscles, even for high-intensity activities. But if your workout is longer than that, use these strategies:

- Carbohydrate loading for 3 or 4 days before an event can help increase your glycogen levels.
- If you take part in long resistance sports, eat a diet that gets about 70% of its calories from carbohydrates to achieve maximum carbohydrate storage. If the duration is shorter, it's enough with 50%-60%. Anyway try to get your diet to be as varied as possible.
- On the day of a big event, eat your last meal 3 to 4 hours before exercising, to give your stomach time to empty.
- Avoid eating sugary or starchy foods within 30 minutes of starting an activity; they can speed up dehydration.
- Replenish carbs, minerals, and water during long exercise sessions. Drink fluid every 15 to 20 minutes. After 60 minutes exercising, eat a snack with refined carbohydrates (with sugar or flour) that will pass quickly into the bloodstream to fuel working muscles. Many athletes prefer sports bars, sports drinks, or gels, since they're so convenient. But fruits are excellent choices.
- Reload on carbohydrates after intensive exercise, too. Since you don't need quick energy, it's best to choose less refined carbohydrates such as a whole-grain bagel or carrot sticks, which provide both carbohydrates and a rich array of nutrients. The post-exercise meal should contain approximately 150 -200 grams of carbohydrates

Fats: Fats are used for energy. Muscles use a mixture of fats and glycogen. The mixture depends on how intense the exercise is, how long it lasts and how fit you are. For example: on a long walk, muscles use mainly fat, start jogging and they'll start using more glycogen.

For long events, such as marathons, your body turns to fat for energy when carbohydrate sources run low.

Fats are found in butter, margarine, cooking oils, red meats, sausages, bacon, cheese and cream contain a lot of fat. But, don't forget to get in your daily diet a proper amount of healthy (unsaturated) fat from olive oil, nuts, avocado, vegetable oils and fatty fish like salmon and tuna.

Protein: your body needs proteins to build cells, to make blood and to restore and repair muscle and other tissues. They are found in meat, liver, chicken, eggs, fish, beans, peas, lentils and nuts. Your body can also use proteins for energy, but it will happen only in very long and exhausting exercises, when it has run out of carbohydrates and fats.

Get Enough Protein, but not too much.

The average person needs 1.0 to 1.4 grams of protein per kilogram of body weight a day. That's about 70-88 grams of protein for a 70 kgr person. A strength athlete may need up to 1.7 grams per kilogram of body weight. That's about 150 grams of protein for a 90kgr athlete.

Instead of protein supplements, eat high-quality protein, such as lean meats, fish, poultry, nuts, beans, eggs, or milk.

The post-exercise meal should contain not less than 20 grams of protein.

Vitamins and minerals: Your body needs tiny amounts of vitamins. That means you must eat it regularly.

Water: Water does not give you energy. But around half your weight is water. Some is in your blood and other body fluids.

Intense exercise, especially in hot weather, can quickly leave you dehydrated. Dehydration, in turn, can hurt your performance and, in extreme cases, threaten your life.

Because intense exercise makes you lose fluid quickly, it's a good idea to drink fluids before as well as during an event. Don't wait until you're thirsty, in long distance sports drink 250-300 cc of fluid every 10 or 15 minutes.

Electrolytes.

Sweating removes both fluids and electrolytes. Electrolytes help transmit nerve signals in your body. To replenish them, reach for sports drinks, fruits and vegetables after exercise.

Fibre: fibre is a substance called cellulose from the cell walls of plants. You find it in fruit, vegetables, brown bread, bran and other cereals. You can't digest it. It passes straight through the gut and is excreted as faeces. But it is very important because:

- It makes a bulky mass which your gut muscles can grip and push along quickly. This prevents constipation and bowel cancer.
- It absorbs poisonous wastes from digested food.
- It makes you feel full, so you eat less.

YOUR ENERGY NEEDS.

Even when you are relaxed and resting you need energy. You need it to keep you warm, to keep your heart beating and lungs breathing, and for all the reactions that go on in your cells.

- Your basal metabolic rate is the amount of energy you need just to stay alive, awake and comfortably warm.
- To move around, digest food and do exercise, you need even more energy. This is called working energy. It depends on how active you are.
- Total energy needed = basal metabolic rate + working energy.

It can be measured in kilojoules (KJ) or in kilocalories (C). 1 kilocalorie = 4.18 kilojoules.

DIFFERENT PEOPLE HAVE DIFFERENT ENERGY NEEDS.

Look at the table on the right. It shows how different people have different energy needs. It depends on:

- **Your age.** You need more energy now than when you were little but when you are over the age of 40 your metabolism slows down and you need to eat less or you will gain weight.
- **Your sex.** Males usually need more energy than females of the same age.
- **Your lifestyle.** The more active you are, the more energy you need. Physically active children and adolescents have calorie requirements that are 12-15 percent greater than those of their sedentary peers. The precise calorie and carbohydrate requirements will vary a lot depending on the type, intensity, frequency and duration of exercise in which they engage

| Total energy needed in a day (KJ/C) | | |
|-------------------------------------|------------|------------|
| | Male | Female |
| Child aged 8 | 8200/1960 | 7300/1746 |
| Teenager aged 15 | 11500/2750 | 8800/2105 |
| Adult doing office work | 10500/2511 | 9000/2153 |
| Adult doing heavy work | 14000/3350 | 10500/2511 |
| A retired person of 75 | 9000/2150 | 7000/1675 |

THE ENERGY BALANCE

Suppose you need 10.000 KJ of energy a day. You eat enough food to give 15.000 KJ. This is much more than you need. But the extra food is not excreted. Instead it is stored as fat. Even carbohydrate and protein are changed into fat and stored.

- If energy in is greater than energy out, the extra food is stored as fat and you gain weight. If you gain too much you may become obese.
- If energy in = energy out, your weight will not change.
- If energy in is less than energy out, your body will use up stored body fat for the extra energy. You will grow slimmer. But if too much body fat gets used up you'll become anorexic.

Your body can use carbohydrates, fats and proteins for energy. Compare the energy each one gives:

1 gram of carbohydrate: 17.1 KJ

1 gram of protein: 18.2 KJ

1 gram of fat: 38.9 KJ.