

Boosting Energy

What do we need energy for?

Whether you are asleep, awake, eating, bathing, working or engaging in passionate pursuits, you need energy. Energy fuels your body's internal functions, repairs, builds and maintains cells and body tissues, and supports the external activities that enable you to interact with the physical world. Food brings us this vital energy that our body is burning throughout the day.

Calories & energy intake

The energy contained in our food is measured in terms of calories (cals). One calorie is the amount of energy required to raise the temperature of 1g of water by 1°C. The amount of energy we absorb through our food intake is commonly called 'energy intake', and it is the fuel of our body. Each food contains a certain amount of energy, which depends on its composition (see below).

Basal Metabolic Rate (BMR)

BMR is the rate of energy expenditure when our body is at rest.

- This is the energy required for the basal functioning of our vital organs (e.g., heart, lungs, brain), which counts for 60-70% of our total daily requirement.
- 10% is required for digesting, absorbing and storing the food we eat in our body.
- Physical activity usually accounts for 20 to 30% of our daily energy expenditure and it varies according to our level of activity: the more active we are, the more energy we spend and need to consume.

Macronutrients

These are the nutrients that provide calories or energy. "Macro" means large, so the macronutrients below are nutrients needed in large amounts.

- **Carbohydrates** provide 4 calories per gram – the main energy source (as glucose) and any excesses are stored as glycogen in the liver.
- **Fat** provides 9 calories per gram – and is used when glucose levels are depleted.
- **Protein** provides 4 calories per gram – a back up source of energy (from amino acids), only after glucose and fat is used up.

Micronutrients (vitamins and minerals)

Most micronutrients are involved in energy production, from metabolising the food we eat to creating cellular energy. The vitamins that are heavily involved are: B & C and the minerals: Iron, Calcium, Phosphorous, Magnesium, Copper, Chromium, Manganese & Zinc.

Adenosine Triphosphate (ATP) – the body's energy currency

ATP is obtained from the breakdown of foods, especially glucose and is the energy-bearing molecule found and produced in the mitochondria – the powerhouse located in every living cell. From the transmission of nerve impulses, muscle contraction, and our energy dependent metabolism and our very existence, are all made possible by the energy created by ATP.

Diet and lifestyle advice to help boost energy levels

1. Start the day well: Breakfast gives you the energy you need to face the day. However, one third of us regularly skip breakfast leading to a calorie & nutrient deficit! Choose a breakfast packed with good carbs, protein and loaded with fibre with no added sugar, such as porridge with nuts & seeds, or a vegetable omelette or wholemeal toast with poached eggs. If you can't face eating as soon as you get up, take a low-sugar high-fibre snack to eat on the run, rather than snacking on high-sugar or high-fat foods.

HEALTH MATTERS!

2. Stabilise blood sugar levels: Eating breakfast is key, as is not allowing yourself not to get too hungry otherwise blood sugar levels will become imbalanced and energy levels will drop off. You will end up choosing the wrong foods in an attempt to rectify this. Well-balanced healthy breakfasts, lunches and dinners with healthy snacks in-between (if you need them) can help stabilise blood sugar and provide sustained energy all day long.

Note: Stimulants like coffee, tea, soft drinks and Red Bull, caffeine etc provide false highs of energy, whilst robbing the body of essential energy producing nutrients.

3. Eat the right (macronutrients): Where our energy comes from.

Carbohydrates – Always choose complex carbohydrates like wholegrains inc. brown rice, oats, quinoa, amaranth, barley, rye etc. and pulses (they have the benefit of fibre and increased nutrition over white carbohydrates).

Protein – choose low fat types like: eggs, lean meats, soya, pulses, nuts, cottage cheese

Fats – choose essential omega (unsaturated) fats like: salmon, fresh tuna, mackerel, herring, anchovy or sardines, nuts & seeds and small amounts of saturated fats like coconut oil & butter.

4. Eat the right (micronutrients): The following foods provide a range of nutrients vital for energy production.

- **B vitamins** - wholegrains, brown rice, leafy greens, mushrooms, lean meats & avocados.
- **Vitamin C** - most fresh fruits and vegetables [green leafy and yellow, orange & red].
- **Iron** - meats, soya, egg yolks, dark green veg, apricots & chickpeas (veg sources + vit C).
- **Calcium** - nuts, green leafy vegetables, salmon, sardines & dairy foods.
- **Phosphorous** - beef, bran, whole grains, legumes & dairy products.
- **Magnesium** - soya, nuts, leafy greens, avocados, bananas, apples & wholegrains
- **Copper** - alfalfa, almonds, avocados, barley, beetroot, broccoli & cashews.
- **Chromium** - chicken, corn, dairy products, dried beans, eggs, fish, meat & mushrooms.
- **Manganese** - avocados, barley, beans, blackberries, blueberries, bran & brown rice.
- **Zinc** - almonds, oysters, eggs, mushrooms, sunflower & pumpkin seeds & leafy greens.

5. Eat enough: Make sure you eat the right amount for your activity level. The average man needs around 2,500 calories a day, and the average woman needs 2,000 calories – more when we exercise. But remember, we all overestimate how active we are.

6. Say NO to sugar! Sugar is not only bad for your teeth, but it is also bad for your waistline. It also gives you a rush of energy, one that wears off very quickly. Cutting out all sugar is virtually impossible, as there are natural sugars in lots of foods, including fruit and veg, and you should not avoid these. However, it is a good idea to cut down on foods with lots of added sugar, such as sweets, cakes, biscuits, fizzy drinks and chocolates.

7. Exercise: Contrary to popular belief, exercising doesn't make you tired, as it actually creates energy in your body. Exercise literally gets the blood pumping carrying oxygen and nutrients around the body, which rises up to meet the challenge for more energy by becoming stronger and by producing more ATP. Even a single 15-minute brisk walk can give you an energy boost, and the benefits increase with more frequent physical activity.

8. Drink wise: Water, your body's most important nutrient helps facilitate the chemical reactions that produce energy from food. Make sure you stay hydrated in general by drinking at least 1.5ltrs of fluid a day (milk, diluted fruit juice, tea and coffee to some degree can count, but it is best obtained from clear water). Watch your intake of alcohol, as it can dehydrate you, which will make you feel tired.

9. Get enough sleep: It sounds obvious, but two-thirds of us suffer from sleep problems, and many people don't get the sleep they need to stay alert through the day. Getting enough sleep is essential in preventing tiredness throughout the following day and can help restore the body's energy supplies. Aim for at least 7-8 hours/night.

Please Note: This handout should only be used as a guide to help inform you as to the diet and lifestyle modifications that **may** help to support better energy levels. It **should not** be used as definitive guide to boosting energy. If you think you may have issues with your energy levels then please contact a qualified nutritionist or medical doctor.