



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 the 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) and joules (J). 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).
- **Protein** provides 4 calories per gram – a back up source of energy.
- **Fat** provides 9 calories per gram – and is used when glucose levels are depleted.

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, 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.

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, and you will end up choosing the wrong foods in an attempt to rectify this. Well-balanced 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.

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

Fats – choose essential 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): Choose the following foods to obtain the 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. 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 walk can give you an energy boost, and the benefits increase with more frequent physical activity.

7. 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 or fruit juice 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.

8. 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 through the following day and can help restore the body's energy supplies. Aim for at least 7-8 hours.