

This leaflet explains what energy density is and how choosing lower energy-dense foods can help you maintain a healthy weight without feeling hungry and unsatisfied.

What is energy density?

Energy density, also known as calorie density, is the amount of calories in a specific weight of food (usually 100g). In other words, bite-for-bite, foods that are higher in energy density contain more calories than lower energy-dense foods. **High energy-dense foods, like crisps, biscuits and fast foods contain more than about 225-275 calories per 100g.**

'Fad diets' tend to leave us feeling deprived and are difficult to sustain. Instead of counting calories, why not try changing your eating habits for good by gradually switching to less energy-dense foods? If you build a healthy routine into your life, you will be more likely to see it through. A balanced diet is about eating meals that are enjoyable as well as nutritious and lower in energy density. Low energy-dense foods contain fewer calories but are still filling, helping you shed those extra pounds.

Following our Recommendation doesn't mean that you have to cut out all energy-dense foods, but for cancer prevention it is best to limit these. Some foods that are high in calories, like nuts and seeds, contain beneficial nutrients and, in small amounts, are an important part of a healthy diet.

What is a calorie?

A calorie is a unit of energy. Our bodies need energy to carry out their functions – from breathing to exercising. Weight gain results from taking in more calories than we use up, with excess calories stored as fat.

This leaflet focuses on the following Recommendation:

Limit consumption of energy-dense foods (particularly processed foods high in added sugar, or low in fibre, or high in fat).

Why is energy density important?

Scientific research shows that diets made up of too many energy-dense foods, particularly processed foods that are high in sugar or fat, can lead to overweight and obesity.



Our Second Expert Report found convincing evidence that being overweight increases the risk of many cancers – including those of the bowel, breast (in postmenopausal women), oesophagus, pancreas, kidney and womb.

How do low energy-dense foods help you maintain a healthy weight?

The main influences on a food's energy density are its water and fat content.



Water adds bulk to foods so you will get more bites for fewer calories. Fat contributes a lot of calories to a food. In fact, just one gram of fat provides nine calories; more than double the amount found in carbohydrate and protein. Energy-

dense foods, like sausages and confectionery, are high in fats or sugar and contain relatively little water, so they have more calories per bite. Low energy-dense foods, like fruits and vegetables, are low in fat and high in water, which means that you can eat more of them with a lower calorie intake.



Low energy-dense foods often contain more fibre. This means that they are digested more slowly so they keep us feeling fuller for longer. Filling up on low energy-dense foods helps us avoid consuming more calories than we need.



How do you spot energy-dense foods?

Energy-dense foods are easy to recognise. In general they tend to be highly processed, low in water and fibre, and high in fat or sugar. Confectionery, spreads and mayonnaise, fried foods and processed meats are all examples of high energy-dense foods. Use food labels to check the energy content per 100g of most packaged foods.

High energy-dense foods contain more than about 225-275 kcal/100g. They include fast foods, cakes, biscuits, crisps, confectionery, butter and other spreads.

Medium energy-dense foods Bread, lean meat, poultry and fish are all medium energy-dense foods. They tend to contain around 100-225 kcal/100g.

Low energy-dense foods include cooked cereals, like brown rice and wholemeal pasta, and pulses, like lentils and beans. They tend to contain less than about 60-150 kcal/100g. Most vegetables, fruits, roots and tubers, like boiled potatoes, are also low in energy density. They contain around 10-100 kcal/100g.

For optimum health, base your everyday meals on low and medium energy-dense foods and limit intake of high energy-dense foods.



Tips for reducing energy density in the diet

Research shows that we tend to eat about the same weight of food each day, even when the calorie content of the food we eat varies. That's why choosing lower energy-dense foods allows you to eat the same amount of food that normally satisfies you without impacting on your waistline.

Here are some suggestions:

◆ **Enjoy a salad or soup at the beginning of a meal.**

These are high in water and fibre, which help fill you up, leaving less room for energy-dense foods. Go for non-creamy soups and lightly dressed salads.

◆ **Add plenty of pulses, wholegrains, vegetables and fruits to your meals.** Try to add a variety of these water- and fibre-rich foods into your breakfasts, pasta sauces, omelettes, sandwiches or side dishes.

◆ **Lower the fat content.** If you use less oil, butter and mayonnaise in your dishes, you will immediately reduce the energy density of your meal without changing your usual portion size. Choose lower-fat dairy products, trim visible fat from meat and steam, grill or bake foods instead of frying them.

◆ **Think before you drink.** Although sugary drinks can't be classed as energy-dense because of their high water content, they can contribute to weight gain. Most sugary drinks, like soda, cola and squashes, don't fill you up or signal to your brain that it's time to stop drinking. Natural fruit juices count as one of your 5 A DAY, but stick to one glass a day as they contain quite a lot of natural sugar.



◆ **Keep portion sizes of energy-dense foods small.**

Research shows that we tend to eat more when served more without even realising it. Use smaller plates at home and skip value meals and super-sized portions, especially those containing processed foods, when eating out.



Tasty lower energy-dense swaps

Instead of this

◆ Fruit juice



◆ Pastry or croissant

◆ Ham and cheese sandwich on white bread

◆ Prawn cocktail with mayonnaise



◆ Creamy leek and potato soup

◆ Fried fish and chips

◆ Chocolate truffles



Try this

◆ Whole fruit



◆ High-fibre cereal with low-fat milk or yoghurt

◆ Chicken and grilled vegetable sandwich on wholemeal bread

◆ Prawn cocktail with low-fat yoghurt and salad



◆ Carrot and lentil soup

◆ Baked fish, potatoes and vegetables

◆ Dark chocolate dipped strawberries



WCRF UK has lots of exciting recipes and cookbooks, which are available online. Visit us at www.wcrf-uk.org to find out more.



About WCRF UK

WCRF UK is the principal UK charity dedicated to the prevention of cancer through the promotion of healthy diet and nutrition, physical activity and weight management. WCRF UK is committed to providing cancer research and education programmes which expand our understanding of the importance of our food and lifestyle choices in the cancer process.

By spreading the good news that cancer can be prevented, WCRF UK hopes that many thousands of lives will be saved. The education and research programmes of WCRF UK are funded almost entirely by donations from the public.

This leaflet gives information based on WCRF UK's Recommendations for Cancer Prevention developed from the Expert Report: *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective* (2007). The Report, produced by WCRF/AICR, is the largest study of its kind ever published and its Recommendations are based on the most comprehensive review of all the available evidence. WCRF UK is committed to interpreting scientific research in the field of food, nutrition, physical activity and cancer prevention and to translating the results into meaningful and practical advice for the public to follow.

Did you know that many cases of cancer could be prevented? For practical information on choosing a healthy diet, managing your weight and becoming more active to help reduce your risk, visit our website:

www.wcrf-uk.org

WCRF UK Recommendations for Cancer Prevention

- 1 Be as lean as possible without becoming underweight
- 2 Be physically active for at least 30 minutes every day
- 3 Avoid sugary drinks. Limit consumption of energy-dense foods (particularly processed foods high in added sugar, or low in fibre, or high in fat)
- 4 Eat more of a variety of vegetables, fruits, wholegrains, and pulses such as beans
- 5 Limit consumption of red meats (such as beef, pork and lamb) and avoid processed meats
- 6 If consumed at all, limit alcoholic drinks to 2 for men and 1 for women a day
- 7 Limit consumption of salty foods and foods processed with salt (sodium)
- 8 Don't use supplements to protect against cancer

Special Population Recommendations

- 9 It is best for mothers to breastfeed exclusively for up to 6 months and then add other liquids and foods
- 10 After treatment, cancer survivors should follow the Recommendations for Cancer Prevention

And, always remember – do not smoke or chew tobacco

ENERGY DENSITY: finding the balance for cancer prevention

WCRF UK is part of the WCRF global network

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“Stopping cancer before it starts”

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