

Energy Density

When thinking about losing weight, most of us think about eating less, constantly feeling hungry and missing our favourite foods. However, research indicates that eating foods with a low energy density makes you feel full, whilst helping you to lose weight.

How can you eat more and still lose weight?

By choosing foods with a lower energy density, it's possible to reduce your calorie intake while still eating enough food to satisfy your appetite.

What is energy density?

Energy density is the amount of calories (or energy) per gram of food. Foods which are lower in energy density provide less energy per gram, which means we can eat more of them while consuming fewer calories compared to foods with a higher energy density.

Foods with a high water and high fibre content tend to have a lower energy density and those foods which are higher in fat tend to have a higher energy density.

Energy density of nutrients

It can be useful to understand the energy density of particular nutrients:

Nutrient	Approximate calories per gram
Fat	9
Protein	4
Carbohydrate	4
Alcohol	7

As each nutrient has a different energy density, by altering what we put more or less of on our plates, we can affect the total calorie intake without having to compromise on portion size.

Foods which fill us up include:

High water content foods

Foods which are lower in energy density include those which are naturally high in water such as fruits and vegetables, soups and stews, and food that absorbs water through cooking e.g. pasta, pulses, rice. Ultimately water adds weight and volume to foods but doesn't add calories.

Foods containing fibre

Fibre bulks up food but can't be fully digested. It also helps us to feel full as it slows the rate at which we chew and digest foods. Foods rich in fibre include most fruits and vegetables, wholemeal/wholegrain varieties of cereal, pasta, rice, beans and pulses.

Low fat foods

By reducing the amount of fat we eat or add to our meals we can reduce the total energy density. As fat is the most energy dense nutrient, just by reducing the fat content of a recipe, you can enjoy a bigger portion of the meal for the same or less calories. Easy ways to reduce fat content include opting for leaner cuts of meat, removing any visible fat from meats and trying to reduce the amount of fat we use in cooking.

High protein foods

Foods rich in protein can decrease hunger and help us to feel full for longer. Poultry, fish, lean meat, eggs, beans and pulses are all foods which contain good levels of protein.

Examples of high energy dense foods and lower alternatives

High energy density food	Low energy density alternative
1 tbsp of raisins (30g) (about 82 calories)	A bowl (130g) of chopped melon (about 40 calories)
A medium bowl of crunchy nut flakes (40g) with full fat milk (about 270 calories)	A bowl of 2 weetabix (40g) served with skimmed milk topped with a portion of strawberries (about 200 calories)

How energy density can be a useful tool for weight management

Using the principles of energy density you can achieve a lower calorie intake which will help towards weight loss, whilst allowing you to continue to enjoy generous portions of food and get an overall balanced diet. Ultimately you can reduce the calories in a meal and increase the size of it by weight (total grams of food on your plate) and volume by altering the amount of fat in a meal or by increasing the amount of water and fibre rich ingredients.

Summary

Applying the principles of energy density to your day to day eating can be a useful way of reducing your total energy intake and it's also a popular way to manage weight. Thankfully you can enjoy healthy portions of food so you don't feel deprived and hungry.

Further information

BNF feed yourself fuller chart:

https://www.nutrition.org.uk/attachments/423_13209%20BNF%20feed%20Poster_PRINT_2.pdf

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Tips for lowering energy density

- ✓ Choose lean cuts of meat, trim off any excess fat, remove skin from poultry.
- ✓ Avoid adding too much fat during cooking, opt for lower fat cooking methods e.g. grilling.
- ✓ Try to make those foods with lower energy density the main part of what you eat day to day, using these foods to satisfy your appetite.
- ✓ Limit portion sizes of more high energy dense foods, as these are not efficient at filling you up for the amount of calories they provide, try to swap for lower energy dense alternatives wherever you can.
- ✓ Adding plenty of lower energy dense foods to a meal can reduce the overall energy density of the meal e.g. having a side salad with a smaller portion of lasagna, filling a third/half of your plate with vegetables, adding vegetables to your recipes e.g. add lots of chopped veg into your bolognese.
- ✓ Opt for higher fibre starchy carbohydrates e.g. wholemeal pasta or rice.
- ✓ If you drink alcohol, do so in moderation and avoid high sugar drinks.
- ✓ Opt for low energy density desserts such as fruit topped with low fat and low sugar yogurt.
- ✓ Try to have smaller portions of biscuits, chocolate, crisps, nuts and sweets or enjoy less often.