

Food – Nutritional Requirements

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What do I need to eat a day to survive?

We can start with an analysis of what are called daily “Reference Intake Guides”, which show the amount of calories and nutrients you should eat each day to maintain a healthy diet. The values are maximum amounts based on an average female adult. They are not individual recommendations and your needs may well be different to the RI, depending on your age, gender and how physically active you are. A 25 to 34 year old male, for example, needs at least 2750kcal per day to maintain peak health.

A good explanation of daily intake requirements can be found at NHS Choices:
<https://www.nhs.uk/Livewell/Goodfood/Pages/reference-intakes-RI-guideline-daily-amounts-GDA.aspx>

Table 1: Daily Intake Requirements

	Reference Intake	% by Weight	Energy Contribution kJ/g	kJ	% Energy
Energy	8400 kJ* 2000 kcal**				
Protein	50g***	12	17	850	10
Total Fat	70g	17	37	2590	32
Of which Saturated Fat	(20g)	(5)	37	(740)	(9)
Carbohydrate	260g	63	17	4420	55
Of which Total Sugars	(90g)	(22)	17	(1530)	(19)
Salt	6g	1	0	0	0
Dietary Fibre	30g	7	8	240	3
TOTALS	416g	100		8100	100

Notes :

* kJ = kilojoules

** kcal = kilocalories

*** g = grams

The reference intake for total sugars includes sugars from milk and fruit, as well as added sugar

Fat

Fat is one of the most important foods for keeping you alive and providing you with a healthy and balanced diet. There are two main types of fat, saturated and unsaturated. Both are high in energy (37 kJ/g) compared to carbohydrates and protein (only 17 kJ/g).

Saturated Fats are found in meat, dairy products (milk, cream, butter, cheese, ghee), some confectionary such as chocolate, palm oil and coconut oil. Government guidelines are that men should have no more than 30g saturated fat per day, women 20 g/day.

Unsaturated fats (monounsaturated and polyunsaturated such as Omega-3 and -6) are more healthy. Monounsaturated fats are found in olive and rapeseed oil, avocados and some nuts (almonds, Brazil nuts and peanuts), polyunsaturated fats Omega-3 and -6 are again found in nuts and also in oily fish such as mackerel, sardines, salmon, tuna etc. Fish in ones diet is therefore very important.

Carbohydrates

Starchy foods such as potatoes, bread, rice, pasta and cereals (including porridge) are our main source of carbohydrate and should make up more than a third of the food you eat. They also contain essential vitamins such as A, B, C and E. If you eat whole grain varieties, this will also add more essential fibre to your diet.

Sugars

There are two types of sugar: a) free sugars, comprising any sugar added to food or drink (e.g., granulated sugars added to coffee or tea, sugar included in confectionary, cookies and jam, etc.) or natural sugar found in honey, maple syrup etc., and b) natural sugars found in milk, fruit and vegetables. It is generally recommended that adults should not consume more than 30g of free sugars per day, or 5% of your daily calorie intake. Note, both free and natural sugars are included as “total sugars” in food labelling.

Protein

Protein is a macronutrient that is essential in building muscle mass. It is commonly found in animal products, though is also present in other sources, such as nuts and legumes. The reference intake for protein is 0.75g per kilogram of body weight. A 70kg individual will therefore require 70×0.75 or 52.5g of protein per day.

Salt

We need salt (Sodium Chloride) to help our nervous system function, to help our muscles contract and relax (including our heart muscle) and also to regulate our fluid balance so that we do not become dehydrated. Salt is our main source of sodium and chloride in our diet. It also makes food taste better.

Fibre

Fibre is dietary material containing substances such as cellulose, lignin, and pectin, that are resistant to the action of digestive enzymes. Dietary fibre is important for our digestive health and regular bowel movements. It also helps you feel fuller for longer, can improve cholesterol and blood sugar levels and can assist in preventing some diseases such as diabetes, heart disease and bowel cancer. Fibre is most commonly found in vegetables, fruits, oats, barley, beans and legumes. There are two main types, soluble fibre which slows the emptying process in the stomach so helping you feel full for longer, and insoluble fibre which absorbs water to help soften the content of our bowels.

Vitamins and Minerals

Reference nutrient daily Intakes for vitamins and minerals are shown in Table 2 below.

Table 2: Reference Intake for Vitamins and Minerals

	Average Male 19 - 50 years	Average Female 19 – 50 years
Thiamin	1 mg*	0.8mg
Riboflavin	1.3mg	1.1mg
Niacin	17mg	13mg
Vitamin B6	1.4mg	1.2mg
Vitamin B12	1.5mg	1.5mg
Folate	200ug**	200ug
Vitamin C	40mg	40mg
Vitamin A	700ug	600ug
Vitamin D	10ug	10ug
Calcium	700mg	700mg
Phosphorous	550mg	550mg
Magnesium	300mg	270mg
Sodium	1600mg	1600mg
Potassium	3500mg	3500mg
Chloride	2500mg	2500mg
Iron	8.7mg	14.8mg
Zinc	9.5mg	7mg
Copper	1.2mg	1.2mg
Selenium	75ug	60ug
Iodine	140ug	140ug

Notes:

* mg = milligrams. A milligram is one thousandth of a gram.

** ug = micrograms. A microgram is a millionth of a gram.

Source: Department of Health, *Dietary Reference Values for Food Energy and Nutrients for the United Kingdom*, HMSO, 1991

References:

British Nutritional Foundation, 2016, “Nutritional Requirements”. Available at: https://www.nutrition.org.uk/attachments/article/234/Nutrition%20Requirements_Revision%20Oct%202016.pdf

NHS Choices, 2017. “Reference Intakes Explained”. Available at: <https://www.nhs.uk/Livewell/Goodfood/Pages/reference-intakes-RI-guideline-daily-amounts-GDA.aspx>