

# Vitamins and Minerals

Vitamins and minerals are essential in small amounts. A healthy well balanced diet should supply adequate amounts {also known as Reference Nutrient Intake (RNI)}. Supplementation is sometimes required.

## Role and Requirements of Vitamins and Minerals

Name	Role	Reference Nutrient Intake (RNI) for adults		Food Sources
		Males	Females	
Vitamin A	Vision, Growth, development, Immunity	700ug RE/day	600ug RE/day	Liver, oily fish(mackerel, sardines, salmon), dairy products, carrots, red pepper, dried fruit
Vitamin D	Calcium absorption	0 Produced as a result of exposure to sunlight and found in foods	0	Liver, dairy products, margarine, Salmon, Sardines(tinned), egg yolk, oysters
Vitamin E	Antioxidant	>4mg/day	>3mg/day	Olive oil, Sunflower oil, safflower oil, palm oil, corn oil, butter, Polyunsaturated margarine, peanuts, Almonds, Brazil nuts
Vitamin K	Blood coagulation, co-enzyme in metabolic pathways	Not quantified as some is produced by bacteria in the gut		Green leafy vegetables, vegetable oils, beef liver, small amounts in dairy products
B <sub>1</sub> (thiamine)	Metabolism of food	1.4mg/day (will ↑ with ↑Kcal)	1mg	Unrefined grain products, legumes, vegetables, meat, dairy products, fruit, eggs.
B <sub>2</sub> (riboflavin)	Metabolism	1.3mg/day (will ↑ with ↑ physical activity)	1.1mg/day	Milk, eggs, green vegetables, liver, enriched cereal + grains, some lean meat, fish, chocolate, yeast extract (marmite)
B <sub>3</sub> (niacin)	Co-enzyme involved in the release of energy	17mg/day	13mg/day	Cereals, meat, fish, eggs, milk (cow's), maize (corn)
B <sub>6</sub> (pyridoxine)	Co-enzyme involved in protein metabolism	1.4mg/day	1.2mg/day	Liver, meat, kidney, pork, eggs, milk, wheatgerm, whole-grain's, peanuts
B <sub>12</sub> (cobalamin)	Normal metabolism of all cells	0.0015mg/day	0.0015 mg/day	Meat, liver, fish, eggs, cheese, dried seaweed, fortified soya milk
Folate	Formation + maturation of red + white blood cells, metabolism	0.2mg/day	0.2mg/day	Green leafy vegetables, legumes, liver, yeast extract, avocado, broccoli, sprouts, orange juice, nuts

Vitamin A	Vitamin C	Vitamin E
Oily fish (e.g. sardines, mackerel, salmon)	Citrus fruits/ juice	Butter
Liver + liver sausage	Blackcurrants	Polyunsaturated margarine
Hard cheese	Raspberries	Cream
Eggs	Kiwi fruit	Sunflower oil
Margarine	Tomatoes	Cod liver oil
Butter	Broccoli	Palm oil
Double cream	Spring greens	Safflower oil
Red pepper	Potatoes	Peanuts/ peanut butter
Spinach	Watercress	Brazil nuts
Carrots	Red Pepper	Almonds
Dried fruit	Offal	Pine nuts

<b>Vitamin B1 (Thiamin)</b>	<b>Vitamin B2 (Riboflavin)</b>	<b>Vitamin B3 (Niacin)</b>
Fortified breakfast cereals	Liver	Fortified breakfast cereals
Wholemeal bread	Kidney	Liver
Brewers Yeast	Fortified breakfast cereals	Kidney
Nuts	Yeast extract (Marmite)	Meat
Poultry	Meat	Poultry
Meat	Liver sausage	Fish
Quorn	Duck	Yeast extract (Marmite)
Diary	Fish	Peanuts
Broccoli	Eggs	Peanut butter
Peas	Pulses	Rice
Beans	Green vegetables	Instant coffee
Orange juice	Plain chocolate	

<b>Vitamin B6 (Pyridoxine)</b>	<b>Vitamin B12 (Cobalamin)</b>	<b>Folate (Folic acid)</b>
Fortified breakfast cereals	Liver	Fortified breakfast cereals
Meat	Kidney	Wholegrain cereal products
Fish	Meat	Legumes
Eggs	Fish	Green leafy vegetables
Poultry	Eggs	Broccoli
Peanuts	Cheese	Sprouts
Seeds	Dried seaweed	Avocado
Beans	Nutrigrain	Orange juice
Legumes	Fortified soya milk	Liver
Bananas		Kidney
Green vegetables		Tahini
Tempeh		Nuts

<b>Iron</b>	<b>Calcium</b>	<b>Selenium</b>
Fortified breakfast cereals	Milk	Brazil nuts
Liver	Soya milk	Meat
Red Meat	Dried milk powder	Dairy
Eggs	Cheese	Fish
Pulses	Soya cheese	Cereals
Dried fruit	Yoghurt	Eggs
Green leafy vegetables	Fromage frais	<b>Zinc</b>
Cashew nuts	Fish with bones	Fortified breakfast cereals
Black treacle	Nuts	Shellfish
Black pudding	Tofu	Meat
Cocoa powder	Tahini	Fish
Tahini	Pesto sauce	Seeds

**Remember:** try not to overcook your vegetables or fruit as this will destroy their vitamin content. Steaming or microwaving are preferable to boiling.

**Fortified Breakfast Cereals** include the following:  
*Fruit and Fibre, Branflakes, All Bran, Cornflakes, Ready Brek.*

This information was provided by the Dietetics team of the HIV/GU Medicine Directorate of the Chelsea and Westminster Hospital. For more information please call 020 8746 8178.

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