Vitamin and mineral intake

We cannot, however, afford to be complacent about our intake of vitamins and minerals. Poor diets with low quantities of fruit and vegetables can lead to insufficient intake of micronutrients. Although, less common than in the past, deficiencies in Europe, for example, iron and vitamin D still exist and can have a serious impact on health. Population groups, such as the elderly, do not absorb vitamins and minerals efficiently so that higher intakes may be required. Moreover, recent research has pointed to the potential benefits of higher intake of micronutrients for the maintenance of good health and protection against certain diseases.

The role of food supplements

To ensure good health and sufficient intake of micronutrients, many people enhance their diet with vitamin and mineral supplements. For users of food supplements, it is important to know what role they can play in their general health and how to ensure their safe use. This leaflet explains the role of each micronutrient and the potential benefits of higher intake and explains how to take supplements safely.

Micronutrient	Functio
Vitamin A	Essentia develop membra
Vitamin D	Helps th phospho
Vitamin E	Protecti radicals and tissu function circulati blood ce
Carotene	Antioxid Support carotene
Vitamin B1 (thiamin)	Needed energy f the func system a
Vitamin B2 (riboflavin)	Needed energy f and fats. Also imp
Vitamin B3 (niacin)	Support producti cells.
Vitamin B5 (pantothenic acid)	Plays a v energy f healthy of horm
Vitamin B6 (pyridoxin)	Importa Vital for nervous blood.
Vitamin B12 (cyanocobalamin)	Needed blood ce protecti
Folic acid	Essentia reproduc blood ce for wom Enhance child's n

ent	Functions	Intake - supply	Reasons for higher intakes*	Micronutrie
	Essential for skin, bone growth and development, sight and mucus membranes.	Insufficient in balanced/normal diet, especially for pregnant women.	For rapid repair of skin and tissues.	***Biotin***
	Helps the body utilise calcium and phosphorus for teeth and bones.	Elderly need more.	Lack of sunlight .	
	Protective antioxidant. Combats free radicals that can do damage to cells and tissues. Essential for the functioning of the heart, good circulation, nerves, muscles, and red blood cells.	Sufficient in balanced/normal diet. Higher intake needed when diet contains polyunsaturated fats.	Protection against cardio-vascular diseases (200-800 mg/day).	***Vitamin C***
	Antioxidant that fights free radicals. Supports the immune system. Beta-carotene is converted into vitamin A.	Low since limited intake of fruit and vegetables.	General protection of cells – by preference natural carotene.	***Calcium***
	Needed for the production of energy from carbohydrates. Aids in the functioning of the nervous system and the digestion.	Average intake lower than RDA.	To counter deficiencies in diet.	***Phosphorus***
	Needed for the production of energy from carbohydrates, proteins and fats. Also important for skin and eyes.	Average intake lower than RDA.	To supplement the diet.	***Magnesium***
	Supports the nervous system. For the production of energy in tissues and cells.	-	To be sure of adequate intake.	***Copper***
	Plays a vital role in the release of energy from foods. Needed for healthy growth and the production of hormones and antibodies.	-	To be sure of adequate intake.	***Chromium***
	Important in protein metabolism. Vital for maintaining a healthy nervous system, skin, muscles and blood.	Deficiency with elderly and women. Average intake lower than RDA.	To maintain cardio-vascular health.	***Iodine***
	Needed for the production of red blood cells and maintenance of the protective sheath around nerves.	Vegans and elderly may need supplementation. Absorption in intestines is sometimes very low.	To maintain cardio-vascular health.	***Iron***
	Essential for growth and reproduction of cells, particularly red blood cells. Particularly important for women of childbearing age. Enhances the growth of the unborn child's nervous system.	Insufficient intake for elderly and pregnant women.	Prevention of spina bifida and cardio-vascular diseases.	***Manganese***
				Molybdenu
				Selenium
				Zinc

*** Supplementation of the diet with food supplements is recommended if the diet for wha**
The reasons for extra intake per micronutrient in this colu
In practice, extra intake of the other vitamins and minerals seem to h

Micronutrient	Functions	Intake - supply	Reasons for higher intakes*
Biotin	Involved in the metabolism of carbohydrates, proteins and fats – needed for healthy skin and hair and nails.	-	To be sure of sufficient intake.
Vitamin C	An antioxidant which helps white blood cells fight infection – also needed for healthy skin and helps absorption of iron.	Especially elderly, growing children and smokers need higher intake.	To increase resistance to and enhance recovery from diseases.
Calcium	Needed for strong bones and teeth and for the functioning of nerves and muscles.	Average intake insufficient.	To slow down the decalcification of bones in old age.
Phosphorus	Needed for a strong skeleton – a component of ATP, the immediate source of energy in muscle tissue.	Often too much in the diet.	No need for higher intake.
Magnesium	Plays a role in bone structure – central to energy release and functioning of nerves and muscles- also important for cardio-vascular health – a component of many enzymes.	Often insufficient in the diet.	To reduce decalcification of bones and in periods of stress.
Copper	Component (with Zinc and Manganese) of an antioxidant enzyme system – needed for melanin formation and iron metabolism.	Sometimes insufficient in the diet.	No need for intake above RDA.
Chromium	Influences the blood-sugar metabolism.	Little in the diet.	In cases of serious fluctuations in the blood-sugar level.
Iodine	Needed for the production of thyroid hormones that regulate metabolic rate.	Average intake insufficient especially for women.	Only at Doctor's recommendation.
Iron	Carries vital oxygen round the body as part of haemoglobin.	Especially women get insufficient iron from their diet.	In cases of anaemia.
Manganese	Component (with Copper and Zinc) of an antioxidant enzyme system needed for healthy bones, joints and nervous system.	-	To be sure of sufficient intake.
Molybdenum	Involved in iron metabolism and the production of uric acid (a waste product found in urine).	-	To be sure of sufficient intake.
Selenium	Antioxidant mineral which helps protect the fatty parts of cells against oxidation.	Insufficient in our diet.	To increase resistance against diseases and to reduce risk of breast cancer.
Zinc	Necessary for healthy reproductive and immune systems, the prostate, tissue repair and blood-sugar levels.	Often insufficient in the diet.	To increase immunity, tissue repair and to help with prostate and blood-sugar level problems.

if the diet for whatever reason would be unbalanced or to be certain of sufficient intake of micronutrients.
utrient in this column are mentioned in recognised scientific research / data.
inerals seem to have a positive influence on health. Scientific research is still ongoing.

Upper safe levels for daily consumption of vitamins and minerals from all sources

Micronutrient		EU labelling RDA[1]	Proven safe level with daily intake[4]
Vitamin A [2]	mcg	800	3000
Vitamin D	mcg	5	20
Vitamin E	mg	10	800
Beta-carotene	mg	-	25
Vit. B-1	mg	1,4	50
Vit. B-2	mg	1,6	200
Vit. B-3	mg		
Nicotinamide [3]		18	1500
Nicotinicacid		18	500
Pantothenic acid	mg	6	1000
Vit. B-6	mg	2	200
Vit. B-12	mcg	1	3000
Folic acid	mcg	200	1000
Biotin	mcg	150	2500
Vitamin C	mg	60	1000
Calcium	mg	800	1500
Phosphorus	mg	800	1100
Magnesium	mg	300	700
Copper	mg	-	8
Chromium	mcg	-	200
Iodine	mcg	150	1000
Iron	mg	14	20
Manganese	mg	-	20
Molybdenum	mcg	-	300
Selenium	mcg	-	200
Zinc	mg	15	30

RDA : Recommended Daily Allowance for labelling purposes.
- : no RDA fixed.
mg : milligram (one thousandth of a gram).
mcg : microgram (one thousandth of a milligram).
1 : EC Directive on nutritional labelling of foodstuffs (90/496/EEG).
2 : Maximum 800 mcg for pregnant women and women who wish to get pregnant.
3 : Nicotinamide and Nicotinic acid are both Vitamin B3. Nicotinic acid is less safe than Nicotinamide with daily intake.
4 : Upper safe levels for daily intake from all sources (food, fortified foods and drinks and supplements), at which no health problems occurred. This does not mean that higher intake levels are always unsafe, e.g. with short term intake (some weeks).
Exceeding these safe levels should best be done under guidance of a nutritionist – specialist.

l sources

Ensuring responsible intake of food supplements

RDA - Recommended Daily Allowances

Food supplements come in various forms, capsules, tablets, powders or liquids. Whatever the form, food supplements provide labelling with an indication of the quantity of each micronutrient in that dosage (in grams, milligrams or micrograms) and in terms of RDA (often in multiples of RDA e.g. 300% of RDA). RDA or Recommended Daily Allowances were established by authorities over 50 years ago with a view to ensuring sufficient nutritional intake for the general population. The Recommended Daily Allowance represents the amount needed to prevent diseases stemming from vitamin and mineral deficiencies. The RDA was developed with deficiencies in mind and therefore does not relate either to the safety of the food supplement or to the health benefits now associated with higher levels. Taking food supplements will normally reduce risks of deficiency diseases.

Safety

Excessive intake of certain micronutrients (e.g. Vitamin A and Vitamin D) might lead to unwanted side effects. It is therefore important that consumers are responsible in their use of food supplements and do not exceed certain safe levels. If consumers follow the instructions provided on the label they can be certain that they will not be exceeding safe levels and are therefore at no risk.
Some consumers may take more than one product containing the same micronutrient. In such a case, the consumer should check that the combined intake does not go beyond suggested upper safety limits. The list in this leaflet provides a simple checklist with an indication of upper safe levels for each micronutrient.

ks
hat

ehpm

European Federation of Associations of Health Product Manufacturers

English #4169-UK-00

50 rue de l'Association
B-1000 Brussels
e-mail: ehpm@eas.be

The safety and benefits of vitamins and minerals

Vitamins, minerals and a balanced diet

A well-balanced diet is essential for good health. Healthy nutrition requires an appropriate dietary intake of macronutrients, such as carbohydrates, fats and proteins as well as all essential nutrients including vitamins and minerals. Improved understanding of the importance of diet and a general rise in the standard of living has brought substantial improvements to the nutritional status of Europe's citizens : widespread malnutrition is a thing of the past.

ehpm

ish #4169-UK-00