

Keep on taking the tablets?

Vitamin and mineral supplements are increasingly popular. We look at how best to get the nutrients you need

Lyn East, 58, takes multi-vitamins on a regular basis: 'Although I generally eat healthily, I am aware that some days I'm not getting all the vitamins and minerals I need.'

Like many people, Lyn, a retired teacher, uses supplements as an insurance policy to make up for any shortfalls in her diet.

In fact, 43 per cent of adults took these products last year, according to a survey by the Food Standards Agency (FSA), the official food watchdog. Multi-vitamins were a firm favourite, chosen by almost a quarter of shoppers. The survey also suggests that we will spend £220 million on supplements this year.

There are 31 essential vitamins and minerals that we need to eat regularly to stay healthy. The FSA says: 'Most people should be able to get all the nutrients they need by eating a varied and balanced diet.' But if you don't eat healthily, can you rely on popping a pill instead? Earlier this year, an independent panel of experts assembled by the US National Institutes of Health looked at the evidence for supplement safety and effectiveness. It said: 'The present evidence is insufficient to recommend either for or against the use of multi-vitamins and minerals...to prevent chronic disease.'

Panel chairman J Michael McGinnis said: 'More than half of American adults are taking dietary supplements, the majority of which are multi-vitamins and minerals, and the bottom line is that we don't know for sure that they're benefiting from them.' He added: 'In fact, we're concerned that some people may be getting too much of certain nutrients.'

Experts agree that a varied and balanced diet reduces your risk of developing major illnesses. As well as vitamins and minerals, foods contain lots of natural beneficial components, such as fibre or the antioxidant

ON THE RIGHT TRACK

Trevor Stephenson 91, retired railway consultant

'I take one multi-vitamin and mineral tablet every day plus a 500mg calcium tablet unless I have a cold, when I'll take two,' says *Which?* member Trevor. He sometimes takes a 500mg vitamin C tablet and an omega-3 fish oil supplement.

We asked him to keep a diet diary for three days to provide a snapshot of his vitamin and mineral intake from food. Our dietitian says: 'Trevor's vitamin A intake seems low – he eats very little food where you'd add margarine (fortified with vitamins A and D). But it's unlikely that he is deficient because he eats a wide variety of fruits and vegetables. These are rich in carotenes, which the body converts to vitamin A.'

'Trevor's diet provides around only half the amount of vitamin E he needs. Bread and margarine, a little wheatgerm sprinkled on breakfast cereal or a handful of peanuts a day would help. He needs slightly more calcium – he could add more milk to his tea or cereal.'

'Trevor's diet is generally healthy and the variety of foods he eats is great. I don't see any reason for taking a supplement instead of making a few minor changes.'

flavonoids in fruit and veg – you risk missing out on some of these if you rely on supplements. There is no conclusive evidence to show that they provide the protective effects of a good diet. And, of course, overall wellbeing is linked to a number of factors, such as exercise and healthy lifestyles, as well as food.

Do you need extra?

There are times, though, when you may need more of a particular nutrient. You could be missing out if you don't eat a balanced diet or cut out certain food groups such as wheat or dairy. Other people have specific needs – every woman planning a family is advised to take a folic acid supplement before conceiving and for the first 12

'More than half of all adults in the US are taking supplements, yet we don't know for sure that they are of benefit'

weeks of pregnancy to protect her baby against neural tube defects. See our website (details on p27) for more information or check with your GP if you're concerned you aren't getting the nutrients you need.

According to Professor Sue Fairweather-Tait of the Institute of Food Research in Norwich, there are several reasons why people may not be getting enough vitamins and minerals. 'Sedentary people with a low energy intake may not be eating enough to meet their needs, especially if their dietary patterns are not very healthy. People who eat a lot of processed foods are relying on products that contain fat, sugar and fillers and don't provide many micronutrients.'

Even the source of ingredients can have a dramatic effect. The mineral selenium is



PHOTOGRAPHY: KATHY HEMMILL, ILLUSTRATION: PAUL WOOLTON

GETTING THE BALANCE RIGHT

Use this guide to check whether you're eating enough of the right food or over-indulging in fare you should limit. The bigger the segment of the plate, the more of this type of food you should have

Fruit and vegetables

Eat a variety and at least five portions a day – juiced, fresh, frozen, canned and dried all count.

■ Key micronutrients: vitamin C, folates and carotenes (some of which the body converts to vitamin A). Leafy green vegetables also provide vitamin K.

Breads, cereals, potatoes, rice and pasta

Have something from this group with every meal and go for healthier, wholegrain cereals.

■ Key micronutrients: calcium, iron, B group vitamins, vitamin C from potatoes.

Meat, fish and alternative proteins

Have at least two portions of fish a week – including one of oily fish such as salmon. Meat is another good source of protein but can be high in fat, so choose lean cuts and trim off any visible fat.

■ Key micronutrients: iron, B vitamins (especially B12), zinc, magnesium and selenium. Oily fish, eggs and liver also provide vitamins A and D.

Fats and sugars

Eat only small amounts of these calorie-rich foods and go for those low in saturates such as vegetable oils.

■ Key micronutrients: fat-soluble vitamins A, D, E and K.

Milk and dairy

Milk is a good source of protein and calcium but the fat content of dairy products varies a lot. Low-fat products can help but beware – reduced-fat yogurts can be quite sugary.

■ Key micronutrients: calcium and vitamins A, B2, B12 and D.

limits for individual nutrients. But it will be up to two years before the European Commission publishes detailed proposals on what these limits should be. Sue Davies, chief policy adviser for *Which?*, said: 'We welcome the directive as it promotes consumer choice and gives greater protection by making sure that products are safe and of adequate quality.'

The FSA currently uses guidance from an expert group on vitamins and minerals. This reported in 2003 and recom-

mended safe upper levels (SULs) for eight nutrients. It set guidance levels (GLs) for a further 22, where there was less certainty about the strength of the scientific evidence. As a result, some supplements now carry extra safety advice on the label. A separate body, the European Food Safety Authority

important for our immune system and acts as an antioxidant. But we are eating only half as much as we did 20 years ago, Professor Fairweather-Tait says. 'We've changed to making bread with European soft wheat rather than using Canadian wheat, which has about ten times more selenium. But I'm not saying take supplements.' Instead, we should increase our intake of selenium-rich foods – for instance, by eating more brazil nuts.

What the law says

In 2005, a European Directive on food supplements came into force in the UK, setting out which ingredients manufacturers can use in their products. It will also create legal minimum and maximum

Mega-doses could contain more than you need and may be harmful



CHANGING HER DIET

Cherry Lyne 36, librarian

'I eat a good-enough diet most days. I also take a daily high-dose multi-vitamin but I've wondered whether it's doing me any good or harm.'

Our dietitian analysed *Which?* member Cherry's food diary. 'Her selenium levels seem low. She could eat fish as well as meat once or twice a week, as she is intolerant of brazil nuts.'

'Cherry's vitamin E intake is below the recommended amount, although she isn't deficient. Eating a cereal bar instead of chocolate would increase her intake. She could also use a tablespoon of vegetable oil to fry lean meat lightly – this is better than dry-frying a fatty cut.'

'Overall, I can see no reason for Cherry to take vitamin and mineral supplements.'

(EFSA), has also set its own 'tolerable upper intake levels'. We put together a panel of three experts – a biochemist, a dietitian and a micronutrient scientist – to help us interpret these guidelines and pin down what's important and what's not if you decide to take a supplement.

Safety first

It is difficult to give an exact cut-off for the safe dose of any vitamin or mineral supplement. The effect differs from person to person and the evidence isn't yet perfectly clear. The SUL or GL is simply the amount that's unlikely to be harmful taken daily over a lifetime.

If your daily dose is slightly above these levels, the FSA says it's unlikely to be a problem. But take five times this dose and it could be a concern.

If you scan the shelves you'll find some supplements boasting that they contain many times the RDA. This is not necessarily helpful. At best, you'll be simply flushing your money away if you take too much of a water-soluble nutrient such as vitamin C. Our micro-nutrient scientist says: 'I would advise against levels that result in "expensive urine" without any real proof of health benefits.'

At worst, high doses can be harmful. For selenium or zinc, a long-term daily dose of

twice the SUL can be a health risk (see 'How much is too much?', below).

We went shopping for products that are easily available at high doses. Our experts were worried by the amount of vitamin A in Holland & Barrett's Ultra Vitamin high-strength vitamins and mineral formula. The scientist said: 'I would certainly raise my eyebrows over the 338 per cent RDA amount of vitamin A in this product.' It contains 2,700mcg, yet the FSA says that people taking supplements should not have more than a total of 1,500mcg a day, including food and tablets.

Holland & Barrett said: 'The EFSA and the US Food and Nutrition Board have each identified the upper safe level for vitamin A (retinol equivalent) to be 3,000mcg per day.' But this figure is for total intake from supplements and food.

Our experts were also concerned about the level of B6 in Natures Aid Mega Vitamin B complex 100 timed release. It contains 100mg – ten times the FSA's SUL for supplements. A spokesperson for the company responded: 'The FSA level at this stage is only advisory and not mandatory.'

Label warnings

The industry signed up to a voluntary system of warnings on labels in 2004 but they are only just starting to appear, as these products have such a long shelf-life.

Professor Peter Aggett was a member of the expert group on SULs and is head of the Lancashire School of Health. He told us: 'I would hope that the introduction of advisory statements could be achieved on a voluntary basis. If that cannot be done, I think it should be compulsory as a matter of good practice and risk management. If people choose to take more than the upper level, then they have at least been warned.'

Until the EU directive sets legally binding levels of nutrients, you'll need to check the label for advice on high doses.

HOW MUCH IS TOO MUCH?

Our checklist is based on FSA advice and the safety warnings on product labels. Amounts are per day unless indicated

Vitamin A Avoid supplements if you:

- eat liver every week
- have an increased risk of osteoporosis
- are pregnant or likely to become pregnant.

Vitamin B6 Taking more than 10mg on a long-term basis may lead to mild tingling and numbness in your arms and legs.

Beta-carotene Avoid supplements of more than 7mg. The FSA warns heavy smokers not to take beta-carotene supplements. Studies have linked them to an increased risk of lung cancer in this group.

Folic acid Taking more than 1mg can mask the symptoms of vitamin B12 deficiency. Older people are at higher risk of B12 shortfalls, which can damage the nervous system if left untreated.

Manganese More than 4mg on a long-term basis may lead to muscle pain and fatigue. Older people may be more sensitive to manganese, so the FSA wants a warning on packs even where they contain much lower levels, from 0.5mg.

Nickel This may cause a skin rash in some people.

Nicotinic acid (a form of niacin) Supplements

containing more than 20mg can cause skin flushes.

Phosphate Long-term intake of more than 250mg may weaken bones.

Selenium Taking more than 0.9mg for lengthy periods can cause minor changes to hair and nails.

Zinc More than 25mg taken on a long-term basis may lead to anaemia.

Other nutrients These may cause a mild stomach upset above the following levels:

- calcium (above 1,500mg)
- iron (above 20mg)
- magnesium (above 400mg)
- phosphate (above 250mg)
- vitamin C (above 1,000mg).

Jargon buster

■ **RDA** The recommended daily allowance is the amount that will ensure everyone's requirements are met.

■ **mg** milligram – 1,000mg in 1g

■ **mcg** or **µg** microgram – 1,000mcg in 1mg

Choosing a supplement

If you want to add multi-vitamins and minerals to your diet, look carefully at the label. Use this guide to help get the right ingredients without paying over the odds

We asked our expert panel to suggest what nutrients to look out for when shopping for multi-vitamins. They sorted them into four categories.

Key ingredients Vitamin A (retinol), Vitamin B1 (thiamin), vitamin B2 (riboflavin), vitamins B6, B12, C, D, E, K, folic acid, calcium, magnesium, iron and selenium.

Desirable extras Copper, chromium, iodine, phosphate and zinc.

Less important Biotin, manganese, molybdenum, niacin, pantothenic acid (B5).

Unnecessary

This list includes nutrients where you are likely to get sufficient amounts from your

diet or those that are not needed as supplements in order to stay healthy: boron, chloride, cobalt, fluoride, nickel, potassium, silicon, sodium, sulphur, tin, vanadium and germanium. Beta-carotene is also unnecessary, except where the supplement contains no vitamin A (your body converts beta-carotene into vitamin A).

Better bets



- Asda A-Z multi-vitamin and mineral (4p) **C**
- Boots Complete A-Z (7p) **M**
- Centrum (16p) **M**
- Holland & Barrett ABC plus (7p) **C M**
- Morrisons Total multi-vitamins + minerals (2p) **C**
- Sainsbury's A-Z multi-vitamins & minerals (3p) **M**
- Sanatogen Gold A-Z (11p) **C**
- Seven Seas Multibionta (15p) **M**
- Superdrug A-Z multi-vitamins + minerals (7p) **M**
(this product has been reformulated but older versions may still be on sale)
- Tesco Complete multi-vitamins & multi-minerals (3p) **M**

Second best



- Health Aid Super multi-vitamins with minerals (15p) **C M**
(this product has been reformulated but older versions may still be on sale)
- Seven Seas A-Z Multi-spectrum (9p)

Lifting the lid

Our experts devised a scoring system to assess the nutrients in 12 popular supplements. We looked at what nutrients they provide and whether they give you a useful amount, not enough or too much.

We've sorted the supplements into groups based on these scores. The 'Better bets' are good all-rounders – levels of nutrients are near what our experts think is a sensible amount for most people. The 'Second best' category are further away from our experts' ideal. Prices are given per tablet, for the smallest pack available.

Our experts' verdict

None of the nutrients in the multi-vitamins listed here is present at levels that give cause for

concern. Products marked **C** have more than 1mg copper – the safe upper limit (SUL) from supplements. But the SUL for total intake, from food and supplements, is 10mg so the amounts in these products aren't likely to be a concern.

Products marked **M** contain more than 0.5mg manganese. Older people may be more sensitive to this nutrient and might want a supplement that contains less than this level.

Our experts thought that all the products should ideally contain higher levels of selenium.

With some supplements you'll also be paying for unnecessary ingredients that are not needed by your body to stay healthy. Health Aid Super multi-vitamins with minerals contains tin and vanadium, while Holland & Barrett ABC Plus includes vanadium.

Checklist

How to get the most from your diet or supplement

■ **Food or pill?** Unless you have a specific need for a vitamin or mineral, such as folic acid for pregnant women, try to get all you need from your diet. Healthy eating is associated with a lower risk of major illnesses but there is no conclusive evidence that taking supplements has the same effect. Ask your GP for more advice about your own nutritional circumstances.

■ **Mega-doses** Products with many times the RDA are likely to be far in excess of what you need and, in some cases, could be harmful. Check the label for safety warnings. If you use more than one kind of supplement, check you aren't taking too much of any particular ingredient.

Look after the pennies

Own-label products from supermarkets and pharmacy chains fared just as well as some big-name brands.

■ **Shop close to home** The Food Supplements Directive protects buyers in the EU only. If you are shopping online or by mail order, check where the product comes from.

Contacts

Food Standards Agency – nutritional advice
www.eatwell.gov.uk

MEMBER BENEFIT

FREE website access

Do you need a supplement?

Our exclusive members-only website has more advice and safety information. Go to www.which.co.uk/vitamins for additional details.