Food News

Volume 7, issue 6 July 2021

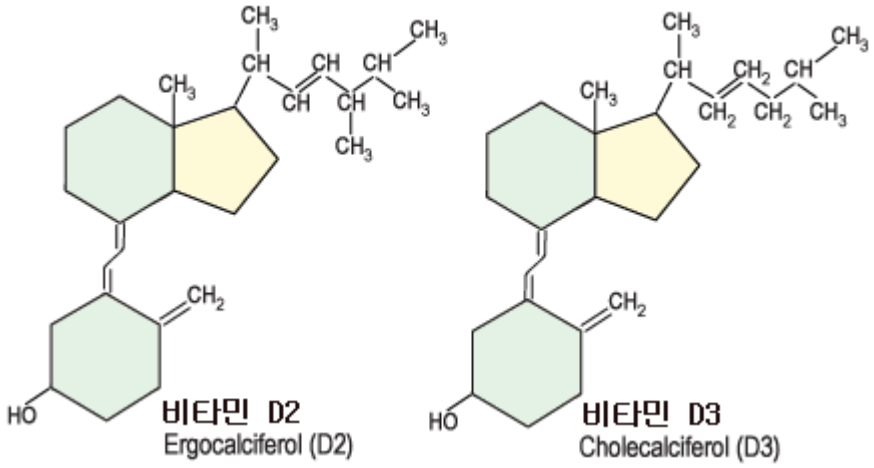
Warwickshire Eating and Drinking for Health Group

Vitamin D

Vitamin D is the trending vitamin of the last year, but what is it and how does it work?

This edition of food news has some of the answers.

As it's a bit hot we've also added a page on hydration.



Inside this issue:

Food News

is produced by Warwickshire Eating and Drinking for health Group. (WEDH).

WEDH is a multi-agency partnership offering people who use food projects to promote health the opportunity to meet to learn from each other.

The group meets four times a year, virtually at the moment but hopefully in different locations across Warwickshire later in the year. If you would like to attend a meeting, please contact the editor. Details on the back page.

Truth or Myth

Vitamin D: The Sunshine vitamin

Vitamin D is known as the sunshine Vitamin, but can we get all that we need from sunshine? If not where else can we get it from?

Even though we call it a vitamin, Vitamin D is actually a hormone and we can make it in our body.

Strong sun burns skin so we need to balance making vitamin D with being safe in the sun - cover up before you turn red or get burnt.

What is Vitamin D?

You make vitamin D under your skin when outside in daylight, which is why vitamin D is sometimes called the 'sunshine vitamin'. It is fat soluble so the body stores Vitamin D in your fat stores.

Vitamin D regulates the minerals that are needed to keep bones & teeth healthy. A lack of vitamin D can lead to bone deformities, pain and tenderness.

The amount of vitamin D you make depends on how strong the suns ultraviolet rays are. In the UK, they are only strong enough to make vitamin D on exposed skin during April to September. That means that during the autumn and winter, we rely on our stores of vitamin D and food sources but these are insufficient to keep up vitamin D levels.

It is therefore recommended that from September to March we take a supplement.

How much do we need

Children from the age of 1 year and adults need 10 micrograms of vitamin D a day. This includes pregnant and breastfeeding women, and people at risk of vitamin D deficiency.

Babies up to the age of 1 year need 8.5 to 10 micrograms of vitamin D a day unless they have more than 500ml of fortified formula milk.

Sometimes the amount of vitamin D is expressed as International Units (IU). 1 microgram of vitamin D is equal to 40 IU. So 10 micrograms of vitamin D is equal to 400 IU.

A microgram is 1,000 times smaller than a milligram (mg). The word microgram is sometimes written with the Greek symbol µ followed by the letter g (µg).

Is there Vitamin D in Food?

Yes, but it is difficult to get 10 µg a day from food. See the table on page 6 for more information.

Who is at risk of vitamin D deficiency?

People who:

- are not often outdoors – for example, if they are frail or housebound
- are in an institution like a care home
- usually wear clothes that cover up most of their skin when outdoors
- have dark skin – for example an African, African-Caribbean or south Asian background.

Social Media Know-how

Vitamin D in Sport

If you followed the Euros it's highly likely your favorite players were taking Vitamin D or have done at some point over the season!

@intrafootball on Instagram post handy snapshot nutrition tips for footballers and their @intraperformance page has lots of handy tips for performance nutrition. They highlight to their athlete clientele the need for Vitamin D. The UEFA expert group published guidelines for nutrition in football and highlighted that players that were deficient needed to be identified and treated to prevent impaired muscle function and recovery.

65% of English Premier League players were found to be Vitamin D deficient during the winter months . Athletes should be retested after supplementation to prevent excess supplementation unnecessarily.

NICE Rapid Guideline

In December 2020 a new NICE Guideline was published regarding Vitamin D and Covid-19. Whilst Vitamin D is known for its support of our bones and muscles it is suggested it also has benefits in fighting respiratory viruses. The guideline sets out who should take a Vitamin D supplement as discussed earlier in this issue of Food News.

They propose an interesting area of research to look at the clinical effectiveness of treating Covid-19 with Vitamin D. With people taking a more active role in their health over the past year this guideline was published in response to concerns that the general population are either not aware or choose not to follow the current guidance for Vitamin D supplementation.

Low Vitamin D status has been suggested to be associated with more severe outcomes of Covid-19 however due to risk factors for low vitamin D status, and more severe outcomes of Covid-19 being the same, causality cannot be concluded. Whilst a Vitamin D supplement cannot prevent or treat Covid-19 this guideline does again strengthen the need for the population to become more aware of whether and why they should be taking a supplement to improve muscle and bone health.

The guideline can be found here

https://www.bda.uk.com/uploads/assets/7cf73192-842f-4d19-a82f04bcdbf07a70/NICE-COVID-19-rapid-guidelines-vitamin-d.pdf

Coping with the heat

Its going to be a bit hot for the next few days, so here is some information about keeping cool and hydrated.

70% of your body is made up of water, therefore it is essential you drink enough to keep your body in working order. Water makes up your blood, it keeps your heart pumping, and your brain working. It is also essential in allowing us to keep a comfortable body temperature through sweating, and helps us remove waste through our pee. This is how much fluid our bodies need at different ages. Aim for more while it is so hot, even if you are just sitting at home trying to keep as cool as possible.

Age	Adequate fluid intake from drinks (ml/day)	
Infants	0-6 months	550ml through milk
	7-12 months	640 – 800ml
Children	1-2 years	880 – 960ml
	2-3 years	1040ml
	4-8 years	1280ml
	9-13 years	Boys: 1680ml
		Girls: 1520ml
	> 14 years	As adults
Adults (including older adults)		
	Men: 2000ml	
	Women: 1600ml	
Pregnant women	As adults + 300ml per day	
Lactating women	As adults + 600-700ml per day	

Drinking water is the easiest way to get enough fluid. Tap water is safe, cheap and easy. You can add sugar free squash, herbal tea or slices of fruit or cucumber to make it more interesting.

Fizzy drinks count towards your fluid intake, though both sugar free and sugary can affect your teeth if you drink them in large quantities. Remember sugary drinks contain calories you may not need.

Fruit juice also makes a nutritious drink. Fruit juice contains vitamins, minerals and fibre. Having one 200ml glass a day will count towards one of your 5-a-day. Fruit juice is also high in sugar, therefore be mindful of this dependant on your health goals.

Milk (cold or warm) counts as fluid too and drinking milk can be a good way of introducing nutrition if its too hot to eat. Depending on your health goals consider what type of milk you choose. If you are wanting to gain weight choose full fat milk (blue top), and if you are wanting to manage your weight choose skimmed-milk (red top).

Tea and coffee can be another good way of staying well hydrated. However, if you drink a lot of tea and coffee you should be aware of the amount of caffeine you are consuming. This is particularly important for pregnant women.

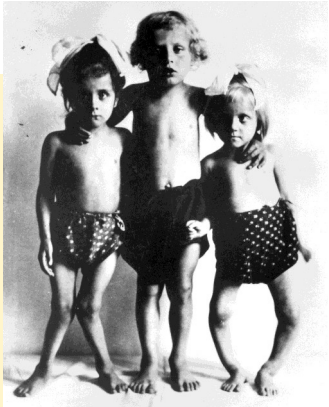
Alcohol does not count towards your daily fluid needs. It may make you pee more than usual, so if you choose to drink alcohol it's a good idea to alternate with water or sugar free fizzy drinks. We would encourage you to be mindful of guidelines for drinking alcohol.

D2 and 3

Vitamin D comes in 2 forms—D2 (ergocalciferol) and D3 (cholecalciferol). Both play the same role in the body, they have slightly different molecular structures. (see image on front page). The form in your blood is called 25-hydroxy vitamin D.

The main difference is that vitamin D2 comes from plants, whereas D3 comes from animals, including people.

Adverts for supplements claim differences in efficacy of absorption. A review of research data carried out in 2012 identified that vitamin D3 is more efficacious at raising serum 25(OH)D concentrations than is vitamin D2, and thus vitamin D3 could potentially become the preferred choice for supplementation. However, the effect was lost when the supplement was taken daily. The study also stated that there was insufficient data to identify if age, sex, and ethnicity, or oral or injected supplementation made a difference.



Vitamin D has been associated with Ricketts in children and osteomalacia in adults—conditions still seen in the UK. Research is now linking it with far wider effects on our body. Low blood levels of the vitamin have been associated with increased risk of death from cardiovascular disease, cognitive impairment in older adults, some cancers and severe asthma in children.

Research is taking place on vitamin Ds possible role in the prevention and treatment of many different conditions, including type1 and type 2 diabetes, hypertension, glucose intolerance, and multiple sclerosis. Its effects on the immune system are also being investigated.

Advice for pregnancy, and breastfeeding

Midwives and health visitors report that Vitamin D is another vitamin pregnant and breastfeeding women need to think about, but often are unaware of its benefits for their growing baby.

But since it's difficult for people to get enough vitamin D from food alone, pregnant and breastfeeding women should consider taking a daily supplement containing 10 micrograms of vitamin D during the autumn and winter. The common supplements for pregnant women contain Vitamin D (Healthy Start vitamins contain A , D and C).

Between late March/early April to the end of September, most people can make all the vitamin D they need through sunlight on their skin and from a balanced diet, but pregnant and breastfeeding women are encouraged to take their Healthy Start vitamins all year to ensure they have enough stores for their growing baby.

What's in Season?

Here is a list of what fruit and veg are in season this July

Fruit	Vegetables
Blackberries, Blackcurrants, Blueberries, Cherries, Gooseberries, Greengages, Loganberries, Raspberries, Redcurrants, Rhubarb, Strawberries, .	Aubergine, Beetroot, Broad Beans, Broccoli, Carrots, Cauliflower, Chicory, Chillies, Courgettes, Cucumber, Fennel, French Beans, Garlic, Kohlrabi, New Potatoes, Onions, Peas, Potatoes, Radishes, Rocket, Runner Beans, Samphire, Sorrel, Spring Greens, Spring Onions, Summer Squash, Swish Chard, Tomatoes, Turnips, Watercress.

Cooking in season

Fresh mackerel is in season during July, so as its packed with vitamin D here are some ideas for using it.

- Cook whole mackerel on the BBQ
- Use in place of chicken or tuna in pasta or rice dishes
- Use citrus such as orange or lime to cut through the fatty taste
- Use smoked or tinned mackerel in salad or in wraps
- It makes a great pate when mashed with natural yogurt

High omega 3 diet associated with reduction of headaches

Oxylipins derived from omega 3 fatty acids are associated with pain-reducing effects, while oxylipins derived from omega 6 fatty acids worsen pain and can provoke migraine. Previous studies evaluating omega 3 fatty acid supplements for migraine have been inconclusive.

Researchers in the US gave 182 women omega 3 supplements with or without a reduction in omega 6 fats. The high omega 3 diet was associated with a reduction of 1.3 headache hours per day and two headache days per month. The high omega 3 plus low omega 6 diet group saw a reduction of 1.7 headache hours per day and four headache days per month, suggesting additional benefit from lowering dietary omega-6 fatty acid.

The researchers reported difficulty for patients in sticking to a strict diet and the fact that most participants were relatively young women so results may not apply to children, older adults, men, or other populations.

Omega 3 fats (alpha linolenic) are found in sea food, oily fish are the best sources, but we also get it from potatoes cooked in omega 3 fat.

Omega 6 fats (linoleic) are found in sunflower and safflower oils, walnuts,

Food sources of vitamin D

It is difficult to get 10 µg from food daily, especially as the best source is oily fish which a lot of people do not like. Intakes of oily fish should be limited to once or twice a week as they contain low levels of pollutants which could harm the development of a baby in the womb.

Using the table below, estimate how much vitamin D you eat daily.

Food	Weight	µg Vitamin D
Fortified breakfast cereal e.g. Special K, Shreddies	Small portion (30g)	0.8 – 2.5 Check the packet
Dried milk with vegetable fat	2 tsp (6g)	0.6
Cheese in a sandwich	Small matchbox chunk (45g)	0.1
Tuna in brine	Portion on sandwich (45g)	1.6
Grilled salmon steak	Average portion 100g	7.1
Grilled Mackerel	Average portion (60g)	14
Sardines in tomato sauce	1 (25g)	2
Egg	1 (60g)	0.9
Fortified Margarine	Thin spread on a small slice of bread (7g)	0.5
Roast beef or pork	1 slice (90g)	0.7
Cod liver oil	2 tsp (6g)	12.6
Mushrooms grown under UV light	100g	3.8 - 28
Fortified Tofu	100g	2.5

Can you overdose on Vitamin D?

Taking too many vitamin D supplements over a long period of time can cause too much calcium to build up in the body (hypercalcaemia). This can weaken the bones and damage the kidneys and the heart.

Adults, including pregnant and breastfeeding women and the elderly, and children aged 11 to 17 years should not take more than 100 micrograms (4,000 IU) of vitamin D a day.

Children aged 1 to 10 years should not have more than 50 micrograms (2,000 IU) a day. Infants under 12 months should not have more than 25 micrograms (1,000 IU) a day.

If you take more than one nutritional supplement, check how much Vitamin D you are getting, and change the brands if you are taking around 100 µg

Vitamin D toxicity: https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/vitamin-d-toxicity/faq-20058108

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If you have an interest in food , hydration and health, and would like to join the eating and drinking for health group, please contact the editor.

If you would like more information about any of the articles in this newsletter, please contact the editor who will pass this on to the author of the article.

Useful web sites

Sustainable fish: https://www.mcsuk.org/goodfishguide/species/mackerel/

For information about hydration

https://www.bda.uk.com/resource/fluid-water-drinks.html

https://www.nhsinform.scot/campaigns/hydration

References and further information

Vitamin D: https://www.nhs.uk/conditions/vitamins-and-minerals/vitamin-d/

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