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"Why Vitamin D is so Vital"

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Grey skies this summer mean that children are more at risk of developing weak bones and other diseases, says Oliver Gillie

After the worst midsummer weather on record, you may feel something is missing - not only the sun but the sunshine vitamin, D.

The action of sun on skin, and of vitamin D on the body as a whole, have been shown to elevate mood as well as protect against disease. If you miss it, what about the children who are growing up without it? How will they get through next winter with what may be the lowest levels of D ever?

Children are at risk of serious diseases caused by insufficient vitamin D because the government's Healthy Start programme is failing to provide promised vitamins. The infant vitamins, which are not reaching the public, contain vitamin D that not only protects against rickets and weak bones but also reduces the risk of multiple sclerosis, diabetes, and now, it is suggested, autism, too.

The Department of Health (DH) has developed its own-brand infant vitamin drops under the Healthy Start label and announced that they would be on sale in chemists' shops in March.

But parents seeking to protect their children against vitamin deficiency and its serious consequences have been unable to buy the infant vitamins in many parts of the country. And doctors wanting to prescribe the vitamins have been equally frustrated.

Supply of the infant vitamins has failed because they have been made with too short a shelf-life, so chemists cannot guarantee getting the product on their shelves with enough time to sell it before it passes its expiry date.

Mother-and-baby clinics supply the infant vitamin drops free to mothers on benefits, when special arrangements have been made by health trusts, but other women are finding it difficult, if not impossible, to get them.

"The infant vitamin drops have a shelf-life of only 10 months and we need a minimum shelf-life of 18 months to fit in with our supply times," says Adrian Booth of the Boots (the chemists) legal department which negotiated with the DH.



Fit and healthy: vitamin D is essential to fight disease

"Also, the price the DH wanted to sell the vitamins for, £1.49, was unrealistic. Even so, we probably would have sold them because we want to support the Healthy Start programme and it would bring people into our shops."

The Healthy Start vitamins replace NHS infant vitamin drops, which were introduced in the 1970s to replace cod liver oil.

Cod liver oil (which contains vitamin D) was introduced as a "welfare food" in 1942 and virtually eliminated rickets. But now rickets is returning. Doctors in Dundee recently reported four cases occurring in children whose professional parents were of South Asian origin.

Their dark skin made them more vulnerable to vitamin D deficiency because exposure to sunlight is the major source of vitamin D, and dark skin makes the vitamin much more slowly than white skin.

But rickets is just the first disease to appear when children do not obtain enough vitamin D.

Babies with rickets are three times more likely than others to develop diabetes. Elina Hypponen, a distinguished young researcher at the Institute for Child Health in London, has shown that babies in Finland who are given vitamin D are much less likely to develop diabetes.

Over the past 20 years, the number of five-year-olds in the Oxford area suffering from diabetes (type 1) has increased five-fold, while the number of 15-year-olds suffering from the disease has doubled.

"The increase in diabetes in children is too steep to be put down to genetic factors," says Professor Polly Bingley of the University of Bristol, who led the Oxford study. "It must be due to changes in our environment."

Children with diabetes type 1 require regular insulin injections to stay alive and are at high risk of long-term complications, which include heart disease, serious damage to eyes, nerves and kidneys.

"If these children had been given a vitamin D supplement, this epidemic of diabetes type 1 might have been prevented," says Dr Hypponen. "Our research shows that an alarmingly high number of people in the UK do not get enough vitamin D - in winter, nine out of 10 adults have sub-optimal levels."

Sunlight is the source of 90 per cent of our vitamin D in the UK. And insufficient exposure to sunlight provides people with insufficient vitamin D, putting them at risk, not only of diabetes but also of multiple sclerosis.

The incidence of MS has also increased substantially over the past 20 years, during which period habits have changed.

People have been warned to avoid the sun and they also tend to spend more time in cars, or indoors watching television. Scotland, with its cloudy skies, has the highest risk of MS in the world.

Scots born in May, after the long, dark winter, have a higher than average risk of the disease, while those born in November, after the summer holidays, have the lowest risk.

The risk of MS may be reduced by mothers sunbathing for short periods without sun cream (taking care not to burn), by taking vitamin D during pregnancy, or by giving infants Healthy Start vitamin drops if these were available.

As if diabetes and MS were not worrying enough, it has now been suggested that autism may be caused by insufficient vitamin D during pregnancy and/or early years.

Autistic children have difficulty in forming relationships, but they also tend to have larger heads, changes similar to those found in baby rats that are bred with insufficient vitamin D.

Recent increases in the incidence of autism, which now affects one in 88 children in the UK, may have been caused by advice to avoid or restrict sun exposure, says Dr John Cannell, a California psychiatrist and founder of the Vitamin D Council, a non-profit advocacy organisation.

The theory will certainly be controversial, not least because it could lend support to the suggestion that some children are harmed by the MMR vaccine.

People who are autistic have been found to be more sensitive to poisoning by heavy metals, a condition that may be more likely to occur when the body has insufficient vitamin D.

Dr Cannell suggests that mercury present in vaccines may have caused brain damage in children who were vulnerable because they had low levels of vitamin D.

Dr Richard Mills, research director of the National Autistic Society, says: "There has been speculation in the past about autism being more common in high-latitude countries that get less sunlight and a tie-up with rickets has been suggested - observations which support the theory."

Other countries such as Germany, Switzerland, the Scandinavian countries, Canada and the United States all recommend a vitamin D supplement for babies from birth if breast-fed, and from weaning if bottle-fed, and for these to continue for up to four years or more.

But the UK's National Institute of Clinical Excellence (Nice) has confused policy-makers here by advising that there is no evidence showing the benefit of infant vitamins, despite 100 years of clinical experience to the contrary.

This delayed Government action and it was not until the Royal College of Physicians' child health committee intervened that the Government decided to produce its own Healthy Start infant vitamins containing vitamin D.

Mothers have now been without a supply of infant vitamins containing D for eight years due to disagreement in learned committees and muddle in the DH.

In the interim, the DH advised mothers to use branded infant vitamins, Abidec or Dalivit, ignoring the fact that these products are formulated with a form of vitamin D (ergocalciferol) that has a potency about quarter that of the natural vitamin D.

Mothers were led to believe they were doing the right thing, but infants given these brands obtained a completely inadequate dose of vitamin D. It has been a story of repeated bungling and incompetence that is not yet over.

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