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Lung cancer 'link to lack of sun'

beach life

Some sun can be a good thing

Lack of sunlight may increase the risk of lung cancer, a study suggests.

Researchers found lung cancer rates were highest in countries furthest from the equator, where exposure to sunlight is lowest.

It is thought vitamin D - generated by exposure to sunlight - can halt tumour growth by promoting the factors responsible for cell death in the body.

The University of California, San Diego study appears in the Journal of Epidemiology and Community Health.

Experts warn that exposure to sunlight is still the major cause of skin cancer - a disease which is on the increase around the world.

Lung cancer kills more than one million people every year around the globe.

The researchers examined data from 111 countries across several continents.

Cell glue

They found smoking was most strongly associated with lung cancer rates - accounting for up to 85% of all cases.

But exposure to sunlight, especially UVB light, the principal source of vitamin D for the body, also seemed to have an impact.

We know that vitamin D is essential for good health, but the time in the sun needed to get enough vitamin D is much less than the time it takes to tan or burn

Dr Kat Arney

Cancer Research UK

The amount of UVB light increases with proximity to the equator. The analysis showed lung cancer rates were highest in those countries furthest away from the equator and lowest in those nearest.

Higher cloud cover and airborne aerosol levels were also associated with higher rates of the disease.

Lead researcher Dr Cedric Garland said lung cancer, in common with many other forms of the disease, usually began in the epithelial cells that line the surface of the tissues in the organ.

Cancer results when cells start to divide in an uncontrolled fashion.

He said vitamin D stimulated the release of chemicals which, in combination with calcium, formed a glue-like substance which bind these cells tightly together, and put a brake on their division.

There was also evidence that vitamin D may also slow the progress of cancer once it develops.

Skin cancer risk

Dr Garland also stressed that moderate exposure to sunlight did not significantly raise the risk of the most serious form of skin cancer, melanoma.

He said the only form of skin cancer that was related to ordinary, moderate exposure to sunlight was squamous cell carcinoma, which killed far fewer people than lung cancer, and other forms of the disease which might also be prevented by moderate exposure to the sun.

Moderate exposure would be five to 15 minutes per day within two hours of midday, on mainly clear days, when season and temperature allow, with 40% of skin area exposed.

A hat with a wide brim should be worn when in the sun for more than a few minutes, but sunscreen should be skipped during this period, as it prevents vitamin D synthesis.

Dr Kat Arney, of the charity Cancer Research UK, stressed that smoking was by far the biggest cause of lung cancer - responsible for 90% of cases.

She said: "There is growing evidence that vitamin D could help to reduce the risk of some cancers, such as bowel cancer, but the link between vitamin D and lung cancer is still unclear.

"In this case, the researchers have not actually measured people's vitamin D levels, and there may be several other factors that need to be taken into account.

"These include differences in sun protection behaviour in various countries, as well as differences in the way that cancer cases are registered.

"We know that vitamin D is essential for good health, but the time in the sun needed to get enough vitamin D is much less than the time it takes to tan or burn."

A little sun might fight cancer

* 11 January 2008

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* Andy Coghlan

Sunshine is regularly blamed for causing fatal skin cancers, but it may help save your life if you develop a different cancer. It seems that sunlight has an overall

protective effect as it stimulates the body's production of vitamin D, which helps to combat internal cancers, including those of the colon and prostate.

"A little sun exposure is a little better for you than avoiding sunlight," says Richard Setlow of Brookhaven National Laboratory in Upton, New York, who co-led the new work. "Vitamin D doesn't lower the incidence of internal cancers, but it prevents more people dying from them."

"Vitamin D doesn't lower the incidence of internal cancers, but it prevents more people dying from them"

The team examined global numbers of cancer cases and survival rates, and how they varied with the intensity of sunlight at different latitudes. On balance, sunlight was found to save more lives than it takes because people in sun-drenched regions are protected from certain cancers by vitamin D - but the benefit varies with location. Survival rates from colon, prostate, lung and breast cancer are between 20 and 50 per cent higher in sunny countries near the equator, such as Australia, than in shadier northern countries such as Norway, even though the rate of cases is similar (Proceedings of the National Academy of Sciences, DOI: 10.1073/pnas.0710615105).

Others caution against relaxing current advice, which is to cover up in the sun. "I'm very concerned about UV radiation being seen as the mode of delivering or rescuing vitamin D levels," says David Fisher, director of the melanoma programme at Harvard Medical School in Boston, Massachusetts. "UV's known carcinogenic effects make this untenable."

Richard Gallagher of the British Columbia Cancer Agency in Vancouver, Canada, adds that improved survival rates might be down to factors other than vitamin D, such as better cancer screening programmes. A compromise would be to take vitamin D supplements, he says.

Cancer - Learn more about one of the world's biggest killers in our comprehensive special report.

Tuesday, 8 January 2008, 07:41 GMT

Low vitamin D heart health risk

Having too little vitamin D has been linked to an increased risk of heart disease, a US study has found.

The Harvard Medical School team said the risk was particularly high for those who also had high blood pressure.

Writing in the journal *Circulation*, they said correcting vitamin D deficiency could be beneficial.

A British Heart Foundation spokeswoman said more information was needed on how the vitamin affected heart health.

Blood pressure link

Vitamin D is mainly obtained from exposure to the sun, as well as from certain foods such as oily fish and eggs.

There are concerns that many people, including the elderly, pregnant women and those who wear all-concealing clothing do not get enough of the vitamin.

A lack of the nutrient, already known to cause weakened bones, has also been linked to multiple sclerosis and rheumatoid arthritis.

Vitamins are easy to administer and in general have few toxic effects
Dr Thomas Wang, Harvard Medical School

The US study, which began in 1996, looked at over 1,700 people with an average age of 59.

Their vitamin D levels were tested and they were then monitored for up to seven years.

Those with low levels of vitamin D in their blood, below 15 nanograms per millilitre (ng/ml), had twice the risk of a heart attack, heart failure or a stroke compared to those with higher levels (above 15ng/ml).

The highest incidence of cardiovascular disease was seen in those with high blood pressure and low vitamin D levels.

Overall, 28% of individuals had levels of vitamin D below 15 ng/ml. Only 10% had levels above 30 ng/ml - considered ideal for bone health.

The researchers say that because receptors for vitamin D are found in heart muscle and blood vessel lining, low levels could be a contributing factor in heart disease.

Uncertainty

But Dr Thomas Wang, who led the research, added: "What hasn't been proven yet is that vitamin D deficiency actually causes increased risk of cardiovascular disease.

"This would require a large randomised trial to show whether correcting the vitamin D deficiency would result in a reduction in cardiovascular risk."

Other studies looking at using different vitamins to benefit heart health have not shown positive results.

But Dr Wang said: "Just because other vitamins haven't succeeded doesn't preclude the possibility of finding vitamins that might prevent cardiovascular disease.

"Vitamins are easy to administer and in general have few toxic effects."

June Davison, cardiac nurse at the British Heart Foundation said: "This study suggests an association with Vitamin D deficiency and an increased risk of heart and circulatory disease.

"However, the reasons as to why this happens are uncertain and further research is needed to understand the mechanisms behind this."