Mediterranean Diet Pattern Can Battle Depression

The Mediterranean diet, already thought to protect against heart disease and cancer, may also help to prevent depression, Spanish researchers say.

They found depression was more than 30% less likely to develop in people who followed a diet high in vegetables, fruit and cereals, and low in red meat.

They studied 10,094 healthy adults over four years, the Journal of the American Medical Association reports.

However, the team stressed additional, larger-scale studies were required.

Researchers at the Universities of Las Palmas and Navarra recruited university graduates to take part.

Dietary patterns

They completed questionnaires and the researchers calculated their adherence to the Mediterranean dietary pattern (MDP) for an average of four-and-a-half years.

MEDITERRANEAN DIET FEATURES:

- High intake of monounsaturated fatty acids like olive oil and polyunsaturated fats from seafood
- Moderate intake of alcohol and dairy products
- Low intake of meat
- High intake of fruit and nuts, cereals, vegetables and fish

Participants who had a strong adherence to the MDP tended to be male, ex-smokers, married and older individuals.

They were more active physically and showed a higher total energy intake.

The researchers identified 480 new cases of depression during the follow-up period - 156 in men and 324 in women.

They found that those with the highest adherence to the MDP were more than 30% less likely to develop depression.

They took into account marital status, the number of children and factors associated with a healthy lifestyle and found the relationship did not change.

Even taking account of personality traits, such as competitiveness and anxiety, had no effect on the results.

'More research needed'

Professor Miguel Martinez-Gonzalez, of the University of Navarra, said the results would have to be confirmed in longer trials with more participants but they had found a strong inverse association between the Mediterranean diet and depression.

"Thirty per cent is a large reduction in the risk and this could be very important considering the large burden of disease represented by depression.

"We know how important the Mediterranean diet is in reducing cardiovascular risk factors and the same inflammatory proteins are also raised in patients with depression."

He said it was likely that the overall dietary pattern was more important than the effect of single components and "may exert a fair degree of protection against depression".

Dr Cecilia D'Felice, a clinical psychologist, said there was mounting evidence for the importance of diet in treating depression.

She said: "What we do know is that a diet high in olive oil will enhance the amount of serotonin or brain transmitter available to you.

"Most anti-depression drugs work to keep more serotonin available in the brain."

Phytonutrient from Olive Oil Could Reduce Alzheimer's Risk

In findings published in the journal *Toxicology and Applied Pharmacology,* US scientists explain how the naturally occurring compound, oleocanthal, beneficially alters the structure of highly toxic proteins known as ADDLs.

The researchers explain that ADDLs bind within the neural synapses of the brains of Alzheimer's patients and are believed to directly disrupt nerve cell function, eventually leading to memory loss, cell death and global disruption of brain function.

> Binding of ADDLs to nerve cell synapses is thought to be a crucial first step in the initiation of Alzheimer's disease. Oleocanthal alters ADDL structure in a way that deters the protein from binding to synapses.
>
> Dr William L. Klein

The study

Reporting on a series of in vitro studies, the team of researchers found that incubation with oleocanthal changed the structure of ADDLs by increasing the protein's size.

Knowing that oleocanthal changed ADDL size, the researchers said they next evaluated whether oleocanthal affected the ability of ADDLs to bind to synapses of cultured hippocampal neurons.

The hippocampus, a part of the brain intimately involved in learning and memory, is one of the first areas affected by Alzheimer's disease.

Measuring ADDL binding with and without oleocanthal, the team said that they discovered that small amounts of oleocanthal effectively reduced short-term binding of ADDLs to hippocampal synapses, and additional studies revealed that oleocanthal can protect synapses from damage caused by ADDLs.

They reported that an unexpected finding of the research was that oleocanthal makes ADDLs into stronger targets for antibodies. This action establishes an opportunity for creating more effective immunotherapy treatments, which use antibodies to bind to and attack ADDLs, they added.

'In addition to aiding therapeutics, enhancing ADDL immunoreactivity also could increase the sensitivity of antibody-based Alzheimer's diagnostics,' said the scientists.

The scientists stated that future investigation of how exactly oleocanthal changes ADDL composition may increase the understanding of the structural component responsible for ADDL toxicity.

The scientists maintain that such insights could provide discovery pathways related to disease prevention and treatment.

'Our findings may help identify effective preventative measures and lead to improved therapeutics in the fight against Alzheimer's disease,' added the authors.

Source: *Toxicology and Applied Pharmacology*
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Title: *Alzheimer's-associated Aβ Oligomers Show Altered Structure, Immunoreactivity and Synaptotoxicity with Low Doses of Oleocanthal.*
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