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Green tea 'cuts Alzheimer's risk'

A key compound cuts damaging proteins

An ingredient of green tea may help to protect the brain against the ravages of Alzheimer's disease, research in the US suggests.

University of South Florida scientists found the component prevented Alzheimer's-like damage in the brains of mice bred to develop symptoms.

The component - EGCG - is already strongly suspected of offering protection against certain cancers.

The study is published in the Journal of Neuroscience.

It provides evidence that EGCG decreases production of the beta-amyloid protein thought to play a key role in the development of Alzheimer's symptoms.

> **“A new generation of dietary supplements containing pure EGCG may lead to the greatest benefit for treating Alzheimer's disease”**
>
> Dr Doug Shytle

It is this protein that forms the characteristic plaques found in the brain of Alzheimer's patients which are thought to lead to nerve damage and memory loss.

After treating Alzheimer's mice for several months with daily injections of pure EGCG, the researchers observed a dramatic decrease - as much as 54% - of brain-clogging Alzheimer's plaques.

Lead researcher Dr Jun Tan said: "The findings suggest that a concentrated component of green tea can decrease brain beta-amyloid plaque formation.

"If beta-amyloid pathology in this Alzheimer's mouse model is representative of Alzheimer's disease pathology in humans, EGCG dietary supplementation may be effective in preventing and treating the disease."

Green tea contains many antioxidants, including those known as flavonoids, that can protect against damage to the brain caused by charged particles called free radicals.

However, the Florida team showed that other flavonoids in green tea actually block EGCG's ability to prevent the harmful build up of beta-amyloid.

Thus drinking green tea alone would not likely have a beneficial effect.

Supplements

Dr Doug Shytle, who also worked on the study, said: "This finding suggests that green tea extract selectively concentrating EGCG would be needed to override the counteractive effect of other flavonoids found in green tea."

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Humans would need a daily dose of 1,500 to 1,600 mg of EGCG to approximate the level that had a positive impact on mice.

That dosage has already been studied in healthy human volunteers and was found to be safe and well tolerated.

The Florida team now plans to study whether multiple oral doses of EGCG can improve memory loss in Alzheimer's mice as well as reduce plaque formation.

Harriet Millward, of the Alzheimer's Research Trust, told the BBC News website: "This is quite encouraging progress, building on previous evidence that antioxidants in green tea might be beneficial to Alzheimer's patients either as treatment or prevention."

However, Dr Millward said the role of beta-amyloid in the brain was not well understood, and reducing levels too far might cause damage.

It was also not clear whether the formation of plaques was a cause of Alzheimer's, or just an effect of it.