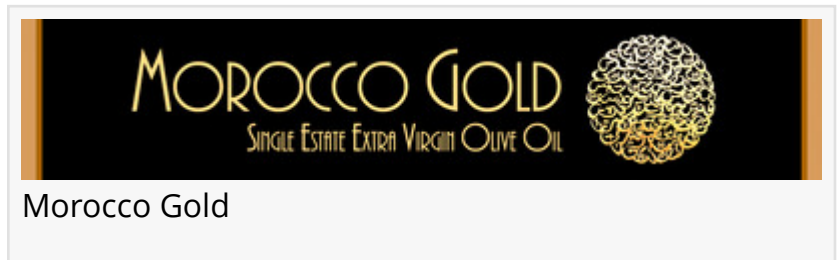


The Protective Powers of Extra-Virgin Olive Oil Against Alzheimer's Disease

Evidence underscores the beneficial effects of the Mediterranean diet in treating and preventing Alzheimer's disease.



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/EINPresswire.com/ -- Alzheimer's disease (AD) represents one of the most prevalent neurodegenerative diseases worldwide, characterized by significant cognitive decline and memory impairment that disrupts daily functioning. As a major form of dementia, AD affects millions, particularly within the aging population. Despite extensive research, treatment options that can fully halt or reverse the progression of AD remain elusive. However, dietary interventions, particularly those involving the Mediterranean diet, have shown promising results in mitigating the risk and progression of Alzheimer's disease. Among the diet's components, extra-virgin olive oil (EVOO) is notable for its rich phenolic content and potential neuroprotective effects.

The Role of the Mediterranean Diet in Cognitive Health

The Mediterranean diet is renowned for its health benefits, including improved cardiovascular health and reduced incidence of chronic diseases. More recently, its impact on cognitive health has captured the attention of the scientific community. Extra-virgin olive oil, a staple of this diet, is abundant in over a hundred phenolic compounds such as oleuropein aglycone, oleuropein, oleocanthal, oleacein, tyrosol, and hydroxytyrosol. These compounds are known for their powerful antioxidant and anti-inflammatory properties, which play critical roles in brain health and disease prevention.

Neuroprotective Properties of Extra-Virgin Olive Oil

[Extra-virgin olive oil contributes to the prevention of Alzheimer's disease](#) through multiple biological pathways. It disrupts the aggregation of amyloid-beta peptides, a key feature of AD pathology, enhances their clearance from the brain, and prevents oxidative stress and neuronal damage. Additionally, EVOO's phenolic compounds inhibit the hyperphosphorylation of tau proteins. This action helps prevent the formation of neurofibrillary tangles, another hallmark of

Alzheimer's, and preserves vital neuronal transport systems.

Impact on Inflammation and Oxidative Stress

The robust anti-inflammatory and antioxidant properties of EVOO's phenolic compounds are vital in preventing neuroinflammation and oxidative stress within the brain. By maintaining the integrity of the blood-brain barrier, these compounds restrict the influx of harmful substances and immune cells into the brain, which can exacerbate neurodegenerative processes.

Insights from Preclinical Studies

A multitude of in vitro studies highlight the antioxidant and neuroprotective properties of EVOO. For instance, neuroblastoma cells pre-treated with EVOO extracts have shown increased expression of key antioxidant enzymes, effectively preventing damage induced by free radicals. Additionally, combination treatments involving specific phenolic compounds from EVOO have demonstrated potential in activating autophagic processes, reducing oxidative stress, and preventing mitochondrial dysfunction and cellular damage associated with amyloid-beta plaques.

Evidence from Clinical Research

[Clinical trials](#) have further underscored the efficacy of extra-virgin olive oil in enhancing cognitive function and brain health. [Studies conducted on individuals with mild cognitive impairment](#) have shown that regular consumption of EVOO can lead to significant improvements in cognitive performance, surpassing even those observed with traditional Mediterranean diet interventions. Furthermore, specific studies have pointed to increased levels of neuroprotective proteins and a reduction in markers of oxidative stress and inflammation following EVOO supplementation.

A Dietary Approach to Alzheimer's Prevention

The collective findings from both preclinical and clinical studies reinforce the protective efficacy of extra-virgin olive oil and its phenolic compounds against the development and progression of Alzheimer's disease. Incorporating EVOO into a daily diet not only supports overall health but also offers a practical, preventive strategy against cognitive decline. As research advances, the integration of EVOO in dietary practices worldwide holds promise as a simple yet effective approach to combating Alzheimer's disease, merging traditional dietary wisdom with modern scientific evidence in the pursuit of better brain health.

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