



Beneficial Effects of Botanical Polyphenol Diets and Exercise on Behavior in Alzheimer's Disease Mouse Models

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Alzheimer's disease (AD) is one of the most debilitating age-related disorders and is the sixth-leading cause of death with an estimated global prevalence of 30 million, and more than 5 million currently in the United States. Preventing or postponing the onset of AD, as well as delaying or slowing its progression would lead to an improvement of health status and quality of life for the elderly...Amyloid plaques and neurofibrillary tangles are well-established diagnostic markers of AD, and other features commonly seen include oxidative damage and inflammation...Rigorous nutritional modifications which are pleiotropic by nature, may counteract chronic subclinical processes aiding the aging brain's endogenous defenses...

Research from our laboratory, using animal models, has suggested that botanical polyphenols and/or exercise can be effectively used as a preventative measure for disease onset, as well as for slowing disease progression. We have shown that both dietary polyphenols and exercise are able to improve learning and memory performance in an AD animal model...Our studies have found age-dependent changes in cognitive and non-cognitive behaviors in these mice, and demonstrated that diet/exercise prevented or reversed some of these changes. These results, together with epidemiological and clinical studies in humans, suggest that dietary polyphenols and exercise may have beneficial effects on brain health and slow the progression of AD.

AD model mice fed Missouri grown elderberry soaked foods exhibited greater resistance to onset and stronger recovery – reversal of symptoms – than the control group fed the non-elderberry diet. The research team observed significant improvement in behavior as well as evidence of reversal in study of brain sections. Of course, much more work needs to be done, but the evidence of damage reversal in AD seems parallel to the reversal of stroke damage found in a related but separate study. [The farm providing the elderberries is also a primary source of berries used in making River Hills Harvest elderberry juice products.]