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The Effect of Flavonoids in Memory

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Abstract

Flavonoids may exert particularly powerful actions on mammalian cognition and may reverse age-related declines in memory and learning. Flavonoids can be modulated neuronal function and there by influencing memory, learning and cognitive function. Dietary supplementation with flavonoid-rich foods, such as blueberry, green tea and Ginkgo biloba lead to significant reversals of age-related deficits on spatial memory and learning. Recently, significant evidence has appeared to show that phytochemical-rich foods, and in particular those rich in flavonoids, may reverse age related deficits in cognitive function in both animals and human subjects. To impact flavonoids on brain function, must cross the blood–brain barrier. With regard to specific brain localization, several studies report anthocyanin in different regions of the brain of both rodents and pigs after supplementation with blueberry. Animal investigations have evidently denoted that flavonoid-rich foods are beneficial in retarding and/or counteracting functional age-related cognitive deficits. There is robust evidence that flavonoid-rich foods can impact on memory and learning and that this seems likely to involve, to some degree, regulation of signaling cascades, leading to changes in morphological aspects of neuronal cells that ultimately impact on synaptic plasticity and more sustained long term potentiation in the hippocampus. Studies suggest that flavonoid-rich foods are capable of inducing improvements in memory and cognition in animals and humans. There is evidence to suggest that blueberry flavonoids can cross the blood-brain barrier and reach the central nervous system, where they have the potential to directly regulate gene and protein expression in neurons. Flavonoids are likely causal agents in mediating the cognitive effects.

Keywords: Flavonoids, Memory, Cognitive Effects.

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