## Gene and diet interaction in brain and ageing process.

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## ABSTRACT

People who live for 100 years or more with little evidence of a decline in brain function , many others or not so fortunate and experience a neurodegenerative disorder like Alzheimer disease or Parkinson disease .two incurable brain disorders that take a heavy toll on patients as well as the health care system . Although an increasing number of genetic factors may affect the risk for neurodegenerative disorders are being identified. Both disorders involve increased oxidative stress, metabolic impairment, and abnormal protein aggregation .dietary factors play major role in determining whether the brain ages successfully or experiences a neurodegenerative disorder .Dietary factors may interact with disease causing or predisposing genes in molecular cascades that either promote or prevent the degeneration of neurons. Epidemiologic findings suggest that high calorie diets and folic acid deficiency increase the risk for Alzheimer disease and Parkinson disease. Studies on animal models of these disorders have shown (reduced calorie intake or intermittent fasting) and dietary supplementation with folic acid can reduce neuronal damage and improve behavioral outcome .Results from animal studies have shown that the beneficial effects of dietary restriction on the brain increases the production of neurotropic factors and cytoprotective protein chaperones in neurons. Overeating is a major modifiable risk factor for several age-related disease, including cardio vascular disease and type2 diabetes mellitus .recent findings suggest that calorie intake also influences the risk for Alzheimer's and Parkinson disease .Dietary restrictions promote neuronal survival, plasticity, and even neurogenesis by inducing a mild cellular stress response that involves activation of genes that encode proteins design to promote neuronal growth and survival.