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Identification of Rare Variants in Alzheimer's Disease

2009 Investigator-Initiated Research Grant

A person's risk for Alzheimer's disease arises from a complex mix of genetic risk factors and environmental/lifestyle factors. Even considering only genetic risk factors, risk is determined by a small number of genes that strongly increase risk and by a potentially large number of genes that each have small influences on risk. Scientists who study such issues have developed different explanations, or theories, to describe the complex role of genetics in determining risk of diseases such as Alzheimer's disease.

Margaret A. Pericak-Vance, Ph.D. and colleagues are studying the risk of Alzheimer's disease arising from genetic variations. Two of the main goals of their research are to identify genetic variations associated with an increased risk for the disease, and to determine how strongly each variation affects an individual's risk. Dr. Pericak-Vance's team has a large dataset of genetic information from families with high incidence of Alzheimer's disease. The researchers plan to use this dataset along with molecular genetic techniques to identify rare genetic variations that are associated with a high risk of Alzheimer's disease. They will also characterize all of the genetic variations in more common genes already known to be associated with increased risk. From these experiments, Dr. Pericak-Vance and colleagues hope to advance our understanding of how numerous genetic variations affect an individual's risk of Alzheimer's disease.