Do proteins increase dementia risk in women?

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That the incidence of dementia is higher among women than men is well documented. Now it would seem the reason for this is the fact that men and women have different levels of proteins in the white matter of their brains, said a study published in journal Molecular Brain .   
  
The study reveals the gender-specific differences between the levels and structures of proteins present in the white matter and the mitochondria of the brains of men and women suffering from dementia.   
  
These findings by researchers from Nanyang Technological University , [Singapore](http://www.happytrips.com/topic/singapore), could lead to the development of new drugs for dementia treatment.

Associate Professor Sze Siu Kwan, one of the co-authors of the study, said: "The number of dementia patients is projected to triple by 2050 and there is an urgent need to identify key mechanisms of how dementia develops. Our findings and further study could have direct implications for our knowledge about the progression of dementia that could lead to the development of drugs for treatment of dementia."   
  
The researchers used proteomics - the large-scale study of proteins, including their variations and changes - to analyze the proteins present in post-mortem brain tissues from five male and five female dementia patients and ten healthy controls. The researchers wanted to identify changes in structure and function of the proteins present in the white matter and the mitochondria of the temporal lobe - the part of the brain involved in visual memory and the understanding of language.   
  
The researchers detected changes in the presence of certain proteins in the mitochondria of patients suffering from dementia that indicate mitochondrial dysfunction. Mitochondria are responsible for creating energy needed to sustain proper cell function, including brain cell function. Mitochondrial dysfunction can lead to cell injury or even cell death. As with changes to other proteins, disturbance to the proteins in the mitochondria was observed to be more pronounced in women than in men. The findings may be a step towards future clinical interventions targeted at reducing dementia risk in both men and women.