# Analysis of the molecular and cellular mechanism of dementia modified by diabetes

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It is essential to elucidate the mechanism of dementia in an aging society. Genetic factors, nongenetic risk factors, and lifestyle are known as factors that modify dementia. Nongenetic risk factors for dementia, diabetes, and obesity in mid-life are well known. However, the details and mechanism of its modification need to be sufficiently clear. We aimed to clarify these using clinical databases and mouse models. First, using a clinical database, we found that the promotion of cognitive dysfunction by diabetes and obesity depends on the APOE genotype. Interestingly, diabetes and obesity correlated with reduced senile plaques. Furthermore, obesity suppresses the onset of dementia. On the other hand, senile plaques were reduced in Alzheimer's disease mice model with obesity compared to mice without obesity. We are conducting a single-cell analysis to explore this mechanism.