The fat mass and obesity gene is linked to reduced verbal fluency in overweight and obese elderly men


Humans carrying the prevalent rs9939609 A allele of the fat mass and obesity-associated (FTO) gene are more susceptible to developing obesity than noncarries. Recently, polymorphisms in the FTO gene of elderly subjects have also been linked to a reduced volume in the frontal lobe as well as increased risk for incident Alzheimer disease. However, so far there is no evidence directly linking the FTO gene to functional cognitive processes. Here we examined whether the FTO rs9939609 A allele is associated with verbal fluency performance in 355 elderly men at the age of 82 years who have no clinically apparent cognitive impairment. Retrieval of verbal memory is a good surrogate measure reflecting frontal lobe functioning. Here we found that obese and overweight but not normal weight FTO A allele carriers showed a lower performance on verbal fluency than non-carriers (homozygous for rs9939609 T allele). This effect was not observed for a measure of general cognitive performance (i.e., Mini-Mental State Examination score), thereby indicating that the FTO gene primarily affects frontal lobe-dependent cognitive processes in elderly men.