

Publication

Association of KIBRA with episodic and working memory: a meta-analysis

JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)**ID** 1500857**Author(s)** Milnik, A.; Heck, A.; Vogler, C.; Heinze, H. J.; de Quervain, D. J.; Papassotiropoulos, A.**Author(s) at UniBasel** [de Quervain, Dominique](#) ; [Papassotiropoulos, Andreas](#) ; [Vogler, Christian](#) ; [Heck, Angela](#) ; [Milnik, Annette](#) ;**Year** 2012**Title** Association of KIBRA with episodic and working memory: a meta-analysis**Journal** American journal of medical genetics. Part B, Neuropsychiatric genetics**Volume** 159B**Number** 8**Pages / Article-Number** 958-969**Keywords** WWC1, rs17070145, single nucleotide polymorphism, common variant, human**Mesh terms** Adolescent; Adult; Aged; Aged, 80 and over; Alleles; Cognition; Female; Genome-Wide Association Study; Humans; Intracellular Signaling Peptides and Proteins, genetics; Learning; Male; Memory, Episodic; Memory, Short-Term; Middle Aged; Neuropsychological Tests; Phosphoproteins, genetics; Polymorphism, Single Nucleotide; Young Adult

WWC1 was first implicated in human cognition through a genome wide association study in 2006 that reported an association of the intronic single nucleotide polymorphism (SNP) rs17070145 with episodic memory performance. WWC1 encodes the protein KIBRA, which is almost ubiquitously expressed. Together with its binding partners, KIBRA is assumed to play a role in synaptic plasticity. T-allele carriers of SNP rs17070145 have been reported to outperform individuals that are homozygous for the C-allele in episodic memory tasks. Here we report two random effects meta-analyses testing the association of rs17070145 with episodic and working memory. All currently available population-based association studies that investigated effects of rs17070145 on episodic or working memory were included in the analyses. Where performance measures for multiple domain-specific tasks were available for a given study population, averaged effect size estimates were calculated. The performed meta-analyses relied on 17 samples that were tested for episodic memory performance (N = 8,909) and 9 samples that had performed working memory tasks (N = 4,696). We report a significant association of rs17070145 with both episodic ($r = 0.068$, $P = 0.001$) and working memory ($r = 0.035$, $P = 0.018$). In summary, our findings indicate that SNP rs17070145 located within KIBRA explains 0.5% of the variance for episodic memory tasks and 0.1% of the variance for working memory tasks in samples of primarily Caucasian background.

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