

Association between the *SNAP-25* gene and attention in a twin sample

Tinca JC Polderman, Leo Beem, Florenica M Gosso*, Peter Heutink*,
Frank C Verhulst#, Danielle Posthuma, Dorret I Boomsma

Biological Psychology, VU University Amsterdam, *Center for Neurogenomics and Cognitive Research, #Erasmus University Rotterdam

Introduction

The synaptosomal associated protein of 25 kD (*SNAP-25*) gene, located on chromosome 20p12-20p11.2, has been associated with ADHD in clinical samples.

SNAP-25 is differentially expressed in the brain and is during development involved in synaptic plasticity, dendrite formation and axonal growth.

In this study we tested for an association with attention (problems) in a normal population sample.



Results

We genotyped twelve tagging Single Nucleotide Polymorphisms (SNPs), that cover the *SNAP-25* gene.

Using a family based association test, one SNP (SNP rs363050) showed a significant association with Attention Deficit scores on the SWAN ($p = 0.017$), and two SNPs rs362552, rs362602 showed a trend for association ($p < 0.10$).

Method

From all individuals scores on the Strength and Weakness of ADHD symptoms and Normal behavior scale (SWAN) were available.

The SWAN contains two scales, Hyperactivity/Impulsivity and Attention Deficit, which can be rated on a continuum, ranging from severe attention problems to excellent attention skills.

Subjects were 255 subjects (aged 8-14) from 137 families.

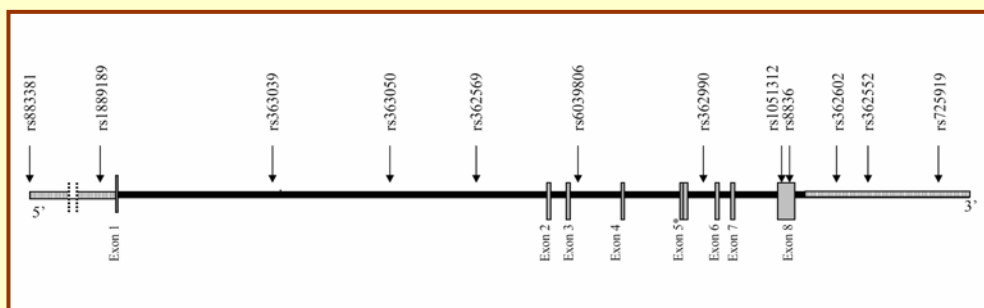


Figure 1: 12 Tagging SNPs of the *SNAP-25* gene

Conclusion

We found a significant association between the *SNAP-25* gene and attention and attention problems in a normal population sample. The results of this study fit in a range of positive associations between the *SNAP-25* gene and attention problems that have been reported lately. However, replication in a larger sample is needed.