NTR studies of ADHD in children and adults: an overview
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In collaboration with many others

Projects
- heritability studies in kids, adolescents, adults (twins, families)
- comorbidity with BW, cognition, eczema, aggression, addiction
- measurement invariance
- polygenic score (PGS) prediction
- linkage studies (adults)
- candidate gene studies
- Genetic Relatedness based (SNP) heritability
- GWA / meta analysis in children and in adults
- record linkage NTR with medical data

Phenotypes
- CBCL, TRF, YSR, ASR (ASBEA: attention problems (AP) scale)
- Conners’ Rating Scales (CTRS-R) for parents and teachers
- Conners’ Adult ADHD Rating Scales (CAARS)
- Diagnostic Interview Schedule for Children (DISC)

Genotypes
Microsatellite data
Candidate genes
Genome wide SNP data: Affymetrix Perlegen 5.0, Illumina 370, Illumina 660, Illumina Omni Express 1M and Affymetrix 6.0.

Epigenetics
Illumina 450K data (currently in adults only)

Collaborations GWA & META-analyses
EAGLE: Early Genetics and Life course Epidemiology
SAGA: Study of ADHD trait Genetics in Adults

Results
- AP is heritable in children and in adults (Kan et al. 2013)
- AP in childhood predicts later IQ, educational attainment
- BW is causally related to AP / ADHD (Groen et al. 2011)
- kids with asthma/eczema have higher AP (v Beijsterveldt et al.)
- ADHD and problem drinking related in adults (Derks et al. 2014)
- ADHD and smoking related (Treur et al.)
- MI applies to most Conners’ scales (de Zeeuw et al.)

In progress:
Meta-analyses of ADHD symptoms in adults: SAGA:
Nine cohorts, six population-based, two clinical ADHD and one clinical cohort ascertained on the basis of MDD/GAD, all from European origin. The smallest cohort consisted of 117 individuals, and the largest one included 6,268 related individuals with valid information on genome-wide genotypes and ADHD total symptom count score. In total, the sample size was 13,358 individuals.

Meta-analyses of ADHD symptoms in children: EAGLE:
Nine population-based cohorts including a total of 17,560 children with ADHD symptom and genotype data; imputed against the 1000 Genomes reference panel. ADHD symptoms were rated by mothers and teachers at preschool and school age.

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Publications:
www.tweelingenregister.org