

**Conclusions:** There is an increasing use of melatonin and sedating antihistamines among Scandinavian children, adolescents and young adults. The increase is more pronounced in Sweden compared to Norway and Denmark. This Scandinavian discrepancy could reflect variation in frequency of sleep problems or national variation in clinical practice or health care access.

**Disclosure:** No significant relationships.

**Keywords:** pharmacoepidemiology; Child and adolescent; melatonin; drug utilisation

## O0053

### White matter microstructure associated with the range of attentional and impulsive performance in school-aged children

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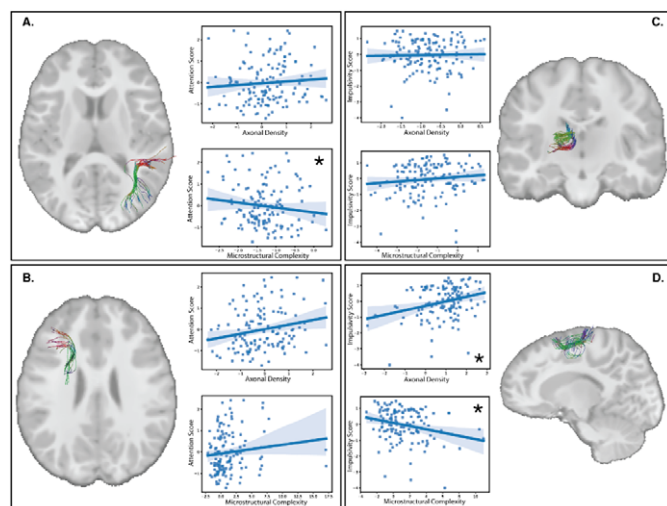
doi: 10.1192/j.eurpsy.2022.251

**Introduction:** Inhibition capabilities have been shown to be a strong predictor of social and educational life outcomes (Mischel & Ebbesen, 1970; Shoda et al., 1990). Inhibition capabilities have an enormous impact on attention and impulsivity (Bari & Robbins, 2013). These two executive functions are associated with numerous psychiatric disorders but are not well understood in terms of white matter (WM) connectivity (Puiu et al., 2018). Novel techniques and statistical approaches in neuroimaging bring us closer to a biologically sustained model.

**Objectives:** This research aims to: 1) identify WM connections associated with attention/impulsivity performance and 2) characterize the differences in WM microstructure associated with the variation of the performance.

**Methods:** 157 children (GESTE cohort, 8-12 years, 27 Dx ADHD, 2 Dx ASD) with  $b=1500\text{mm}^2/\text{s}$ , 2mm isotropic dMRI acquisitions were included. Tractography was performed with TractoFlow pipeline (Theaud et al., 2020). Dimensionality reduction of diffusion metrics yielded two components : microstructural complexity (DTI Metrics, AFD & NuFo) and axonal density (AFD\_fixel) (Chamberland et al., 2019). Attention/impulsivity were evaluated with the CPT3. Multivariate linear regression was performed in python.

**Results:** Lower microstructural complexity was associated with poorer attentional performance on regions of the parietal lobe to the occipital gyrus (P-O,  $p=0.044$ ,  $R^2=0.14$ , Figure 1.) and the Broadman's area 8 to area 6 (SF8-SF6,  $p=0.002$ ,  $R^2=0.12$ , Figure 1.). Lower axonal density was associated with a less impulsive pattern on SF8-SF6 ( $p=0.001$ ,  $R^2=0.13$ , Figure 1.). Results remained significant when removing children with an ADHD or ASD diagnosis.



**Figure 1.** Multivariate linear regression analysis (adjusted for age, sex, laterality & IQ) between the WM microstructure components and attention/impulsivity score (reverse scoring) on connections : **A)** Inferior parietal lobe (area 40) to middle occipital gyrus, **B)** Orbital gyrus (area 12/47) to dorsal dysgranular insula, **C)** Right ventromedial putamen to right caudal temporal thalamus, **D)** Superior frontal (area 8) to superior frontal (area 6). \*  $p < 0.05$ . RGB color-coding : red for right to left direction, green for anterior to posterior direction and blue for superior to inferior direction.

**Conclusions:** We identified underlying difference in WM microstructure that may be associated with the variation in attention/impulsivity performance in school-aged children.

**Disclosure:** No significant relationships.

**Keywords:** Diffusion MRI; Attention/Impulsivity; White matter (WM); Pediatric

## O0054

### ADHD and Intellectual Disability: using ADHD medication

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doi: 10.1192/j.eurpsy.2022.252

**Introduction:** Mental disorders and ADHD in people with ID are higher than in the general population. Clinicians may be reluctant to diagnose ADHD in people with ID. They could be denied effective treatment.

**Objectives:** The purpose of the study was to ascertain antipsychotic use in people with ID before and after the a diagnosis of ADHD.

**Methods:** A casenote review in an ID service for adults with ADHD. Data collected on psychotropic use before and after the diagnosis.

**Results:** Forty-eight adults with ADHD-ID were identified. 38(79%) were male and 10(21%) were female. 19 to 58 years of age. Four (8%) had mild ID; 44 (92%) had moderate to severe ID. 27(56%) had anxiety, mood disorders or psychosis. 21(44%) had ADHD only. Challenging behaviour was reported in 24 (50%) of cases. Thirty-three (68%) used psychotropic medication prior to the diagnosis of ADHD and after the diagnosis. Post-diagnosis, 20(60%) continued to use antipsychotic medication indicating the elimination of antipsychotic use in 13(40%) of people. The level