

## **Mapping abnormal brain function in ADHD, the effects of Methylphenidate and specificity of abnormality**

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Children with ADHD have shown abnormalities in cognitive and motivational control, in particular in motor and cognitive inhibition, in timing and in reward processes. Functional imaging findings will be presented on the normal development of these neurofunctions and the abnormal development in medication-naïve children and adolescents with ADHD, using the technique of functional magnetic resonance imaging (fMRI). The acute effects of Methylphenidate will also be shown on abnormal neurofunction in children with ADHD. Furthermore, to illustrate specificity of ADHD dysfunction, functional abnormalities on the same tasks will also be shown in related psychiatric disorders such as conduct disorder and pediatric obsessive-compulsive disorder and a contrasting disorder, pediatric depression.