

Learning to remember and to forget: electrophysiological studies on attention-working memory interactions in typical development and ADHD

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Learning to remember and to forget:

Electrophysiological studies on attention-working memory interactions in typical development and ADHD

Marjolein Spronk

1. Attention problems in young children between 5 and 7 years old with symptoms of ADHD could be a better indicator for the risk of developing ADHD than measures of impulsivity.
2. Results from the dual-task study show that compared to adults, the ability of adolescents to suppress the influence of distracting information that conflicts with task demands (e.g. Stroop performance) is still immature due to the availability of less resources for top-down control.
3. Also in a working memory task adolescents show worse filtering of task irrelevant information than adults, in this case leading to higher storage of irrelevant information in working memory, thereby reducing overall storage capacity.
4. The development of filtering efficiency and visuospatial working memory storage capacity is similar in typically developing adolescents and adolescents with ADHD. No developmental lag exists for filtering efficiency in adolescents with ADHD.
5. By combining different neuroscience methods a more integrative view can be obtained of the what *and* when of attention and memory processing in typical and atypical (ADHD) development.
6. Although the field of developmental cognitive neuroscience is devoted to understanding the way a child's brain works, the information it provides on the nature and development of the human brain is also important for our knowledge about functioning of the adult brain.
7. Neuronal populations in different parts of the brain do not act independently, but interact with each other. It is therefore important to study the connectivity between regions, especially during development, when brain networks are still immature.
8. Interaction is not only important for certain brain functions (such as working memory and attention), but also for the way cognitive neuroscientists and clinical psychologists should cooperate to be able to learn from each other.
9. If you wish to forget anything on the spot, make a note that this thing is to be remembered. (*Edgar Allan Poe*)
10. We should be open-minded but not so open-minded that our brain falls out. (*Richard Dawkins*)