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Electrophysiological markers indicate disturbance of involuntary attention, but not voluntary attention, in adult ADHD patients

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Abstract: When we cannot concentrate on reading a book, we have problems with voluntary attention. When we stand up and stumble on a chair leg, we have a problem with involuntary attention. A bimanual Stroop task (ST) and the Ericson's flanker task (EFT) were used for the analysis of voluntary and involuntary attention, respectively. Electrophysiological markers of attention were applied in adult ADHD patients and yoked control individuals. Behavioral incongruence effects were stronger in patients than in controls in the EFT. P3 latency in the incongruent condition was identical in patients and controls in ST but strongly delayed in patients compared with controls in EFT. A significant positive lateralized readiness potential indicating the activation of the false response channel was obtained in the incongruent condition of EFT, being significantly larger in patients than controls. The data indicate a disorder of automatic attentional control in ADHD adults despite nearly normal voluntary attention.