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Pathological Gambling and Impulsivity: Comparison of the Eight Laboratory Measures of Inhibition Capacities

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Abstract : Impulsive behaviour and the underlying brain processes are hypothesized to be central in the development and maintenance of pathological gambling. Inhibition ability can be differentially impaired in pathological gamblers (PGs). Aims: This study aimed to compare the ability of eight widely used inhibition measures to discriminate between PGs and healthy controls (HCs). Methods: PGs (N=51) and demographically matched HCs (N=51) performed cognitive inhibition (the Stroop), motor inhibition (the Go/NoGo) and reflective inhibition (the Matching Familiar Figures (MFFT)) tasks. Results: An augmented total interference response time in the Stroop task (η^2 =0.054), a large number of commission errors (η^2 =0.053) in the Go/NoGo task, and the total number of errors in the MFFT (η^2 =0.05) can discriminate PGs from HCs. Other measures are unable to differentiate between PGs and HCs. No significant correlations were observed between inhibition measures. Conclusion: Inhibition measures varied in the ability to discriminate PGs from HCs. Most inhibition measures were not relevant to gambling behaviour. PGs do not express rash, impulsive behaviour, such as quickly choosing an answer without thinking. In contrast, in PGs, inhibition impairment was related to slow-inaccurate performance.

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