

Training People to Inhibit Movements Can Reduce Risk-Taking

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New research from psychological scientists at the Universities of Exeter and Cardiff shows that people can be trained to become less impulsive, resulting in less risk-taking during gambling. The research could pave the way for new treatments for people with addictions to gambling, drugs or alcohol as well as impulse-control disorders, such as ADHD.

Recently published in [Psychological Science](#), a journal of the [Association for Psychological Science](#), the study assessed whether asking people to stop making simple movements while in a simulated gambling situation affected how risky or cautious they were when betting.

In a first experiment, participants were asked to repeatedly place a bet in a gambling task. The participants were all students, in good health. They were presented with safe options (low gain, high probability) and more risky options (high gain, low probability), and were asked to indicate their choice by pressing a key on a computer keyboard. The researchers examined the preference for the safer options. Sometimes, the gambling task was combined with an 'inhibition task', similar to those used to study impulse control in the laboratory. Participants had to withhold their choice response when a 'stop' signal was presented, forcing them to stop themselves from pressing a key on the keyboard.

When participants occasionally had to stop their choice response, they slowed down, and importantly, became more cautious in the amount of money they bet each time. This suggests that becoming more cautious about simple movements reduces the tendency to make risky monetary decisions.

In the second and third experiments, the researchers examined whether training people to stop hand responses to arbitrary stimuli presented on a computer screen would also have longer-term effects on gambling. They found that a short period of inhibition training reduced gambling by ten to fifteen per cent, a small but statistically significant reduction, and that this effect lasted at least two hours.

Lead researcher, Dr Frederick Verbruggen of the University of Exeter said: "Our research shows that by training themselves to stop simple hand movements, people can also learn to control their decision-making processes to avoid placing risky bets.

"This work could have important practical implications for the treatment of behavioural addictions, such as pathological gambling, which have previously been associated with impaired impulse control, and more specifically, deficits in stopping actions. We are now exploring the relevance of our findings to other addictions, such as smoking or overeating, which we did not look at in this study. Addictions are very complex and individual, and our approach would only target one aspect of the problem. However, we are very excited about the potential of helping a proportion of people whose lives are affected by gambling and other addictions."

Dr Chris Chambers of Cardiff University's School of Psychology added: "These results suggest that our

impulses are controlled by highly connected brain systems, reaching from the most basic motor actions to more complicated risky decisions. Our study shows that inhibition training reduces risk-taking during gambling in healthy volunteers but it does not show that inhibition training reduces gambling addiction. More studies are now needed to discover whether training people to boost a low-level ‘inhibitory muscle’ could help treat addictions, but these initial findings are promising.”

For ethical reasons the gambling experiments only simulated some aspects of real-life gambling. Although participants did play for real money, the amounts were small (the maximum win was £4.20) and participants could not become indebted.

This study was funded by the Biotechnology and Biological Sciences Research Council, Research Foundation Flanders, and the Wales Institute of Cognitive Neuroscience.

Dr Verbruggen and Dr Chambers have now been awarded funding from the Economic and Social Research Council to discover more about the basis of this phenomenon and work toward a potential clinical intervention.