

# research snapshot

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## The impact of impulsivity on the relationship between disordered gambling and attentional bias

### What this research is about

Attentional bias refers to a tendency to focus attention on things that are personally relevant. People with disordered gambling tend to pay more attention to cues related to their preferred gambling activities over other cues. The selective attention to gambling cues may trigger cravings and urges to gamble. Thus, attentional bias may contribute to the development and maintenance of disordered gambling.

Impulsivity is a personality trait with multiple aspects. It describes a tendency to act rashly without thinking about the consequences. Impulsivity is thought to be a core feature of disordered gambling. Some studies have found that impulsivity is associated with attentional bias in substance abuse. It is possible that people with disordered gambling and a high level of impulsivity show larger attentional bias to gambling cues. The current study tested this possibility.

### What the researchers did

The researchers recruited undergraduate students from a Canadian university and community members. Participants must be aged 18 to 60 years old and gamble on electronic gaming machines (EGMs) at least monthly. They must have never sought gambling treatment, did not intend to quit gambling in the next 30 days, and reported no colour blindness.

Participants completed an eye-tracking task when they arrived at the lab. The task presented 28 EGM trials and 56 non-EGM trials in a random order. Each trial displayed four images on a light grey background for six seconds. For the EGM trials, one image was related to EGM and the other three were neutral images. The neutral images were chosen to match the

### What you need to know

People with disordered gambling tend to pay more attention to gambling cues over other cues. This is called attentional bias. This study tested whether impulsivity played a role in the relationship between disordered gambling and attentional bias. Participants were 75 adults who gambled on electronic gaming machines (EGMs) regularly. They completed an eye-tracking task to measure attentional bias. Participants also completed several questionnaires measuring impulsivity and disordered gambling. Two aspects of impulsivity, negative and positive urgency, influenced the impact of disordered gambling on attentional bias. For participants with more severe gambling problems, those with a higher level of negative urgency showed larger attentional bias to EGM images. The same was true for positive urgency.

EGM image in terms of colour, brightness, contrast, and framing. Images did not include faces, words, alcohol, or commercial logos. Participants viewed the images on a monitor. A chin and head rest was used to minimise head movements to increase accuracy. Their eye movements were tracked using infrared video technology.

After the eye-tracking task, participants completed the following questionnaires:

- The Problem Gambling Severity Index (PGSI) to assess how severe gambling problems were.
- The UPPS-P to assess five facets of impulsivity: (1) negative urgency (i.e., being impulsive when feeling negative emotions); (2) positive urgency (i.e., being impulsive when feeling positive

emotions); (3) sensation seeking (i.e., tending to seek out new and exiting experiences); (4) lack of perseverance (i.e., difficulty staying focused); and (5) lack of premeditation (i.e., difficulty thinking though potential consequences).

- The Barratt Impulsiveness Scale-11 (BIS-11) to assess three aspects of impulsivity: (1) motor (i.e., difficulty withholding action); (2) non-planning (i.e., acting without thought); and (3) cognitive (i.e., making quick decisions).

### What the researchers found

The study included 75 participants (22 university students and 53 community members). The average age was 34 years old. There were roughly equal numbers of women (49.3%) and men (50.7%). Most of the participants were White (72.7%) and had a high school or post-secondary education (98.7%). Based on the PGSI, one-third of participants experienced disordered gambling (score of 5 or higher).

The researchers calculated attentional bias for each participant by subtracting the average time looking at the neutral images from the average time looking at the EGM images. A value greater than 0 indicated that more time had been spent on the EGM images (i.e., larger attentional bias to the EGM cues).

The researchers found that attentional bias was associated with BIS-motor impulsivity and UPPS-P negative and positive urgency. Other aspects of impulsivity were not associated with attentional bias.

The researchers examined if motor impulsivity, negative urgency, and positive urgency influenced the impact of disordered gambling on attentional bias. They took into account age and gender in their analyses. The researchers found that only negative and positive urgency had an influence. For participants with higher PGSI scores, those with a higher level of negative urgency showed larger attentional bias to the EGM images. The same was true for those with a higher level of positive urgency. These results were not observed in participants with low levels of negative and positive urgency.

### How you can use this research

This study may inform clinical practice and research. It suggests that distress tolerance and mindfulness-based interventions may be useful for people with high levels of negative and positive urgency.

### About the researchers

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### Citation

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