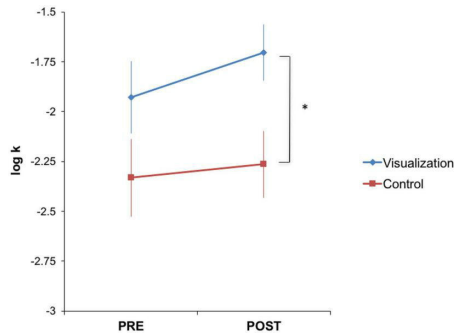


# Visualizing future doesn't increase delayed gratification, study shows

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In a study conducted by Penn researchers Joe Kable and Trishala Parthasarathi, one group of participants spent a month training to be better visualizers. The researchers hypothesized that this would, in turn, improve their ability to defer gratification, if they could picture their down-the-line reward. But as the graph above shows, the better participants became at visualizing, the more impatient they became. Credit: University of Pennsylvania

Some people are more impulsive than others.

University of Pennsylvania researchers Joseph Kable and Trishala Parthasarathi wanted to understand why and whether that quality could change within an individual.

They hypothesized, based on the field's most recent research, that strong visualization of the future—vividly imagining how \$40 earned in a month could be spent on an upcoming vacation, for example—might motivate someone to wait to receive a larger reward rather than take a smaller amount right away. It's the concept known as delayed gratification.

Kable and Parthasarathi actually discovered that the opposite was true, that great visualizers were more impulsive, findings they published in the journal *Frontiers in Psychology*.

"When [people](#) have to make tradeoffs between something that's in front of them right now and something that they can only get in the future, they differ in the extent to which they go for each outcome," said Kable, the Baird Term Associate Professor of Psychology in Penn's School of Arts & Sciences. As it turns out, "people who have imaginations with more vivid details are more likely to not delay gratification."

Or as Parthasarathi, a fifth-year Ph.D. student, explained, "Better visualizers tend to be more impulsive when they're making choices about a smaller reward, accepting it immediately rather than waiting for a larger reward in the future."

To reach this conclusion, the research team devised an experiment that brought 38 adults with a median age of approximately 25 into the lab for a four-week intervention. At the start, each participant completed several decision-making tests and self-reporting surveys, including the Vividness of Visual Imagery Questionnaire, which asked participants to imagine in great detail a friend's face or a setting sun, then rate on a scale of 1 to 5 how clearly they could see each.

"A lower score on the scale indicated people were better able to imagine things than a higher score, which indicated people imagined things less clearly," Parthasarathi said.

The participants were then randomly split into two groups, one in which they got trained on improving their visualization skills, the other in which they practiced meditation. Twice weekly for the month, they worked with a health-and-wellness counselor on their respective areas.

"People in the visualization group would think about two future goals, one at a time, and the process used to achieve each, how they felt after they achieved each and so on," Parthasarathi said. "Those in the relaxation group were trained to think

in the present, so breath awareness and attention to in what we can do to help people become more your body. Nothing related to thinking about the patient." future."

Once the study period ended, participants completed the same battery of tests they'd taken at the beginning. Analyzing comparison data from the experiment's start and finished provided the researchers with their counterintuitive results.

**More information:** Trishala Parthasarathi et al, The Vivid Present: Visualization Abilities Are Associated with Steep Discounting of Future Rewards, *Frontiers in Psychology* (2017). DOI: [10.3389/fpsyg.2017.00289](https://doi.org/10.3389/fpsyg.2017.00289)

"It certainly wasn't what we expected. It's surprising in light of the most recent work," Kable said. But, he added, it's less so if you think about findings from one of the original [delayed-gratification](#) experiments.

Provided by University of Pennsylvania

Kable is referring to what's today commonly called The Marshmallow Test. In the 1960s, Stanford University psychologist Walter Mischel offered children the opportunity to eat a single treat immediately or get double the amount if they could wait alone in the room until the researcher returned. Two plates—one with a single reward, the other with multiple—sat in plain view.

"The thought was, 'Your goal is right in front of you. You'll be able to work toward it more,'" Kable explained. In fact, Mischel "found the direction of the association that we see: When the kids could see what they would get if they waited, they were more impulsive."

Interestingly, Parthasarathi and Kable also learned that improving someone's visualization abilities can actually make that person more impatient.

Despite results counter to what they expected, the researchers feel their work has real-world implications regarding [impulsive behaviors](#). They now know that those keen on taking an immediate reward are more likely to use drugs or do poorly in school. They're more likely to smoke and have a harder time quitting. So the psychologists can adjust behavior-changing treatments that accompany smoking cessation toward meditation and away from visualization, for instance.

"The reason why we studied this task is we think it's a microcosm that can tell us what people are doing outside the lab," Kable said. "We're still interested

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