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How self-discipline works

By ANI | ANI – Sat 20 Oct, 2012

London, October 20 (ANI): Researchers believe that gaining a clearer understanding of how self-control works could provide critical insights into addressing some of the large-scale problems facing society today including obesity and addiction.

Converging scientific evidence tells us that self-control is an important ability. It helps us keep our cool, get things done, and resist the things that tempt us.

Numerous studies have found evidence for the idea of self-control as a limited resource, but emerging research suggests that this model may not tell the whole story.

In a new study, researchers have explored the various mechanisms - metabolic, cognitive, motivational, affective - thought to underlie self-control.

We usually think of a sugary treat as something that taxes our self-control because we have to expend effort trying to resist it. But what if sweets could actually help to boost self-control? That's the basic gist behind the energy model of self-control.

According to this model, self-control relies on carbohydrate metabolism - we deplete our carbohydrate stores as we exert self-control, making it more difficult to exert self-control until the stores are built up again.

Corresponding author Daniel Molden and his colleagues decided to test the energy model in a series of four experiments in which participants' baseline glucose levels were assessed prior to performing tasks that required self-control.

The researchers found no evidence for a relationship between self-control and glucose metabolism. Follow-up studies indicated that participants who rinsed their mouths with a carbohydrate solution showed improved self-control, despite the fact that they didn't ingest the solution and there was no observable change in their blood glucose levels.

These findings suggest a motivational as opposed to metabolic mechanism for self-control.

In this article, psychological scientist Matthew Sanders and colleagues aim to clarify the debate over whether metabolic or motivational mechanisms underlie self-control.

The researchers asked participants to engage in a task that required self-control; the participants then rinsed their mouths with either glucose or a non-glucose sweetener while they performed a second self-control task.

The results of the study conceptually replicate those reported by Molden and colleagues. Participants who rinsed with the glucose sweetener demonstrated better self-control than those who rinsed with a non-glucose sweetener, despite the fact that there was not enough time for the glucose to actually be metabolized.

These results provide additional evidence to suggest that glucose influences self-control through a non-metabolic route. The researchers speculate that glucose may activate brain areas involved in selecting and inhibiting action, as well as detecting errors and evaluating competing responses.

Although self-control has traditionally been thought of as a limited resource that can be depleted, research on cognition, motivation, and affect has begun to challenge this picture.

Inzlicht and Schmeichel review the existing research on self-control and propose an alternative model of self-control focused on process. This process model holds that our initial exertions of willpower lead our motivation to shift away from control

and toward gratification.

As a part of this process, our attention shifts away from cues that signal the need for control and toward cues that signal indulgence.

They argue that the process model provides a starting point for understanding self-control and that more research examining these cognitive, motivational, and affective influences on self-control is needed.

The study has been published in *Perspectives on Psychological Science*. (ANI)

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