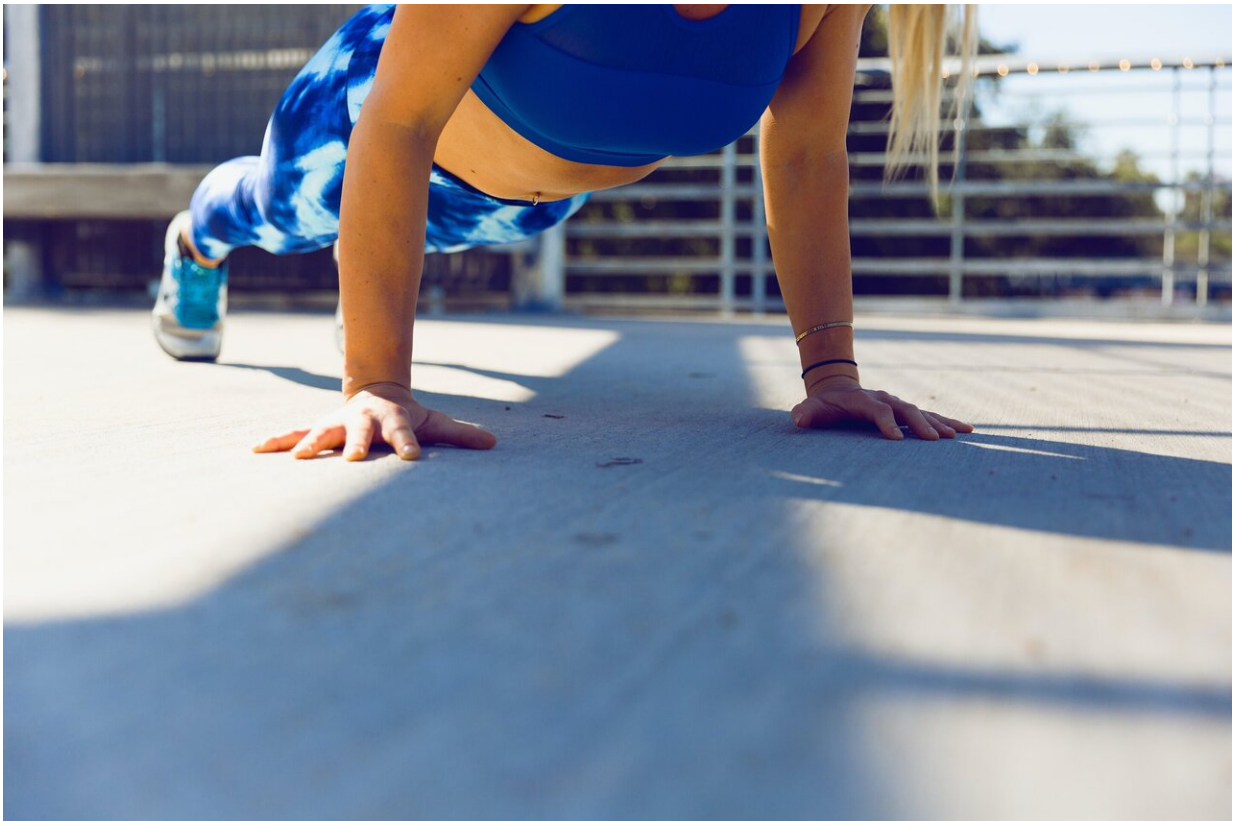


Carrot or stick: Which is better motivation to exercise more?

February 26 2024, by Linda van Putten



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Free cinema tickets or a step tracker paid for by your health insurance. Some insurers offer rewards to promote healthy behavior. But does the threat of losing something like a deposit work better? And what do

patients think? This is what Ph.D. candidate David de Buisonjé researched.

Obesity, [high blood pressure](#), or diabetes: many health conditions are partly due to an unhealthy lifestyle. Some health insurers are using [financial incentives](#) to get their clients to exercise more. "That kind of financial reward is like a carrot," says psychologist David de Buisonjé. "It can help people adopt other behavior but there is little evidence that they maintain that behavior once the reward is removed."

De Buisonjé, therefore, researched whether a deposit contract—which links goals to a deposit—motivates people to exercise more. He built a step counter app and, in a [field experiment](#), got 97 volunteers to deposit (the stick) or earn 10 euros (the carrot). They had to take 20% more steps than their usual daily average. Participants who deposited money were told they would only get this back if they achieved their goal.

Only 62% of the paying participants actually participated in this step-counting intervention (compared with 100% of those who could earn a reward). So, contrary to expectations, the deposit contracts were not more effective than the rewards. "This initial study was mainly a proof of concept. Partly because people gave up, we did not have enough participants to research the differences between the carrots and the sticks properly."

In a second experiment with 137 other participants, De Buisonjé researched how to make deposit contracts more attractive. This time, he combined the carrot with the stick: people could double their outlay if they achieved their goal. The participants also got to decide how much money they put in. These two options meant that more people participated with impressive results: 60% more steps on average. In the end, all the test participants got their money back, but they didn't know this in advance.

Winners and losers

Such constructions in health apps are way more common in the US. As a comparison, De Buisonjé analyzed the effects of the commercial StepBet app, with over 70,000 people taking part in a six-week challenge. They deposited 40 dollars in advance that they could earn back along with a bonus. Almost three-quarters proved successful.

These were more likely to be men, and the challenges were more effective if they had been made as a New Year's resolution. The winners increased their step count by 44% on average, but the losers reduced theirs by over 5%. For these participants, such challenges could backfire, says De Buisonjé. "More research is needed into dealing with adversity and what that does to your motivation."

Lifestyle change is especially urgent in people with cardiovascular diseases. Are financial incentives a good idea for them, too, even if participation is voluntary? De Buisonjé investigated this in a survey of cardiovascular disease patients and interviews with health care providers.

"The respondents indicated that they did need a stick, but only a small proportion felt that deposit contracts were an appropriate tool to get them exercising more. These proved to be mostly younger participants. The stick is a good tool and can have a big effect on behavior change, but be careful about using it on [vulnerable groups](#) such as cardiovascular disease patients or people with money worries."

Provided by Leiden University

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