

# Burning more calories is easier when working out with someone you perceive as better

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The key to motivation in physical activity may be feeling inadequate. One Kansas State University researcher found that those who exercised with a teammate whom they perceived to be better increased their workout time and intensity by as much as 200 percent.

Brandon Irwin, assistant professor of [kinesiology](#), was the principle investigator in a study that tested whether individuals engage in more intense [physical activity](#) when alone, with a virtual partner or competing against a teammate.

"People like to exercise with others and make it a social activity," Irwin said. "We found that when you're performing with someone who you perceive as a little better than you, you tend to give more effort than you normally would alone."

For the first part of the study, college-age [females](#) exercise on a [stationary bike](#) six sessions in a four-week period. They told participants to ride the bike as long as they could. On average, each participant rode for 10 minutes.

Next, the same group of participants returned to the lab for more exercise sessions, but was told they were working out with a partner in another lab whom they could see on a screen. In reality, this was only a looped video. Participants also were told that their virtual partner was part of the first study and had ridden the bike approximately 40 percent longer than them.

"We created the impression that the virtual partner was a little better than the participant," Irwin said. "That's all they knew about their partner. In this group, participants rode an average of nine minutes longer than simply exercising alone."

While this 90 percent increase was promising, Irwin said he and his team had a hunch that the motivation could go even further. The participants were invited back to the lab for more exercise sessions with a [virtual partner](#). This time, though, they were told they were on a team with their partner.

"We told them they were working together to achieve a team score," Irwin said. "The team score was the time of the person who quits first. The participants believed that in the previous trial, they didn't exercise as long as the other person. We created a situation where the participant was the weak link."

Participants in this team trial exercised approximately two minutes longer than simply working out alongside someone. However, Irwin added that the results look different over time.

"This was an average, but over time the difference got much bigger," he said. "In the beginning, the participants were exercising about a minute longer than the partner group. By the last session, participants in the team group were exercising almost 160 percent longer than those in the partner group, and nearly 200 percent longer than those exercising as individuals."

Irwin said this might be because those who believed they were exercising with a partner built a rapport over time and didn't want to let the partner down. He said the team was initially surprised at the drastic increase over time in [participants](#) working out with a teammate.

"If they're constantly working out with someone who's beating them, we wondered how motivated people would be to keep coming back and getting beat again," Irwin said. "It turned out to be exactly the opposite. Over time, it can be very motivating, as long as the conditions are right."

Irwin said research has shown that if an exercise partner or teammate is roughly at the same level or is exponentially better, the motivation disappears. He and his team found that a partner who worked at a level approximately 40 percent better was optimal.

"In certain fitness goals, like preparing to run a marathon, consider exercising not only with someone else, but with someone who is that much better," Irwin said. "For an extra boost, consider some type of team exercise that involves competition, like playing basketball at a regular time throughout the week."

In the future, Irwin wants to continue using virtual partners to increase the time and [intensity](#) of physical activity, but he hopes to move beyond false partners.

"I want to partner people up with actual individuals, not just prerecorded workout partners," he said. "Similar to matchmaking software for romantic relationships online, individuals from different sides of the country could be matched up based on their fitness goals and levels. Using technology, you could run with someone using your smartphones."

Irwin is currently researching this option and hopes to bring it to fruition within the next several years.

Provided by Kansas State University

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