

# Playing video games reduces sex differences in spatial skills

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University of Toronto researchers have discovered that differences between men and women on some tasks that require spatial skills are largely eliminated after both groups play a video game for only a few hours. The research, to be published in the October issue of *Psychological Science*, suggests that a new approach involving action video games can be used to improve spatial skills that are essential for everyday activities such as reading a map, driving a car, assembling a barbeque or learning advanced math.

"Our first experiment discovered a previously unknown sex difference in spatial attention," said Jing Feng, a psychology doctoral student and lead author of the study.

"On average, women are not quite as good at rapidly switching attention among different objects and this may be one reason why women do not do as well on spatial tasks. But more important than finding that difference, our second experiment showed that both men and women can improve their spatial skills by playing a video game and that the women catch up to the men," Feng added. "Moreover, the improved performance of both sexes was maintained when we assessed them again after five months."

Professor Ian Spence, director of the engineering psychology laboratory in the Department of Psychology, speculates that the action video game experience "may cause the expression of previously inactive genes which control the development of neural connections that are necessary for

spatial attention. Clearly, something dramatic is happening in the brain when we see marked improvements in spatial skills after only 10 hours of game playing and these improvements are maintained for many months.”

“One important application of this research could be in helping to attract more women to the mathematical sciences and engineering. Since spatial skills play an important role in these professions, bringing the spatial skills of young women up to the level of their male counterparts could help to change the gender balance in these fields that are so important to our economic health,” Spence added.

Source: University of Toronto

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