

# Video game experience mediates sex differences in spatial and navigation abilities

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## Abstract

Past research reveals sex differences in spatial ability measures. This study further examines this variation across a comprehensive range of spatial tasks and explores potential mediators. 259 participants completed psychometric measures, questionnaires, and navigation tasks in immersive and desktop virtual reality. Men performed significantly better on both small- and large-scale spatial tasks. Video game experience (greater in men) mediated sex differences on most spatial tasks. However, spatial anxiety and motion sickness (greater in women), and exploration tendencies and risk-behavior (greater in men), generally did not account for this variation. This study reveals significant sex differences across spatial navigation tasks and provides preliminary evidence that experiential factors contribute to this variation. This research has implications for everyday navigation and the effects of technology use (video game experience) on spatial performance.