

The role of sports experience in audiovisual integration: a comparison between rackets players and swimmers

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Sports performance requires rapid and accurate reactions to several sensory information. Recent evidence has highlighted the informative role of auditory cues, such as the sound of racket-ball contact in tennis, additionally to visual ones. However, research on audiovisual integration in sports remains limited. Here, we focus on the multisensory integration of auditory and visual information, investigating whether prolonged engagement in sport modulates audiovisual abilities depending on the sport-specific requests. Three groups are compared: racket sport athletes (e.g., tennis players), who consistently make rapid decisions based on combined auditory and visual cues; swimmers, who train in an environment where sensory stimuli are attenuated by water; and a control group of non-athletes. The study employs two psychophysical tasks: the Temporal order judgment task and the Sound-induced double-flash illusion. Results suggest that racket sport athletes' performance reflects more precision than swimmers and controls in perceiving audiovisual stimuli. These findings indicate that sport-specific perceptual demands may refine multisensory abilities.

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Sharper minds, Smarter athletes: the Cognitive Side of Sports

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