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Proceedings of the Annual Meeting of the Cognitive Science Society

Title

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Permalink

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Journal

Proceedings of the Annual Meeting of the Cognitive Science Society, 41(0)

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Publication Date

2019

Peer reviewed

Exploring the role of visuospatial processes in surgical skill acquisition: A longitudinal study

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Abstract

Surgical error is the most frequent and costly type of medical error, posing a direct threat to patient safety. Surgical errors have been described as a 'cognitive phenomenon', as it is largely the shortcomings of the surgeons cognitive processing that leads to error. In laparoscopic surgery, visuospatial processes are known to be crucial for skill acquisition, although it remains unclear as to which exact processes are important, how these develop over time and intraoperatively, and how they influence competency development. We will report interim spatial cognitive baseline results of 35 surgeons, 17 residents and 18 specialists, taking part in an on-going longitudinal study at two major hospitals in Germany. Our results offer new insight into the role of visuospatial cognition in domain-specific expertise, and shed new light on the malleability of visuospatial processes in the skill acquisition process.