



UNIVERSITY OF LEEDS

This is a repository copy of *A randomised controlled trial to assess the impact of patient specific mental rehearsal on surgical performance*.

White Rose Research Online URL for this paper:  
<http://eprints.whiterose.ac.uk/100963/>

Version: Accepted Version

---

**Proceedings Paper:**

Ricketts, H, Tang, M, Mushtaq, F et al. (4 more authors) (2016) A randomised controlled trial to assess the impact of patient specific mental rehearsal on surgical performance. In: British Journal of Surgery. SARS 2016, 06-07 Jan 2016, London, UK. Wiley , pp. 40-41.

<https://doi.org/10.1002/bjs.10158>

---

**Reuse**

Unless indicated otherwise, fulltext items are protected by copyright with all rights reserved. The copyright exception in section 29 of the Copyright, Designs and Patents Act 1988 allows the making of a single copy solely for the purpose of non-commercial research or private study within the limits of fair dealing. The publisher or other rights-holder may allow further reproduction and re-use of this version - refer to the White Rose Research Online record for this item. Where records identify the publisher as the copyright holder, users can verify any specific terms of use on the publisher's website.

**Takedown**

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing [eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk) including the URL of the record and the reason for the withdrawal request.



[eprints@whiterose.ac.uk](mailto:eprints@whiterose.ac.uk)  
<https://eprints.whiterose.ac.uk/>

## **A randomised controlled trial to assess the impact of patient specific mental rehearsal on surgical performance**

H. Ricketts<sup>1,2</sup>, M. Tang<sup>2</sup>, F. Mushtaq<sup>3</sup>, D. Jayne<sup>1</sup>, M. Mon-Williams<sup>3</sup>, D. Miskovic<sup>1</sup>, M. Yiasemidou<sup>1</sup>

<sup>1</sup>Academic Surgical Unit, St. James University Hospital, Leeds, <sup>2</sup>Medical Education and Simulation Hub, Mid Yorkshire NHS Trust, <sup>3</sup>School of Psychology, University of Leeds

**Introduction:** Empirical evidence demonstrates that rehearsing a task mentally enhances its subsequent performance. Several studies indicate these techniques to be applicable in surgery. This study aims to compare a patient specific mental rehearsal process to a generic one.

**Study design:** Through semi-structured interviews, experts will be asked to describe how they perform laparoscopic cholecystectomy, focusing on visual and kinaesthetic cues. According to the transcripts, a Structured Mental Rehearsal (SMR) checklist will be created. Sample size calculations show that 16 participants are required (Competency assessment tool – CAT - 3 versus 2). They will be randomised to two groups. All will perform 6 virtual laparoscopic cholecystectomies (VLC). Anatomy will vary for each procedure. Group 1 will be using the SMR checklist and an anatomy specific 3D model, prior to each procedure. Group 2 will be using the checklist only. The primary outcome of study will be surgical performance, which will be assessed using CAT for laparoscopic cholecystectomy.

**Pilot data:** To assess feasibility, a smaller scale pilot study was conducted. 3D models were compared to didactic videos. Trainees who performed SMR using a 3D model performed significantly better (number of movements - 553 vs. 1391.5,  $p=0.005$ , total path length of instrument tip 1540.24 vs. 2837  $p=0.007$  and time 667 s, vs. 1283s,  $p=0.003$ ).

**Forward plan:** This pilot study is expected to highlight the importance of patient-specific SMR as a tool of augmenting quality of surgery. As a secondary outcome, it will establish a scientifically tested methodology for the creation of SMR checklists in surgery.

**Take-home message:** This pilot study is expected to highlight the importance of patient-specific SMR as a tool of augmenting quality of surgery