

Surgical Training in Spine

A [study](#) shows the first [phase](#) of [validation](#) of a new [model](#) for realistic [training](#) on [spine surgery](#), conducted from January [2014](#) to November [2015](#).

To propose and validate a new tool for neurosurgical education, associating virtual and realistic simulation (mixed reality), for spine surgery.

Surgical simulation is a relatively new field that has a lot to offer to neurosurgical education. Training a new surgeon may take years of hands-on procedures, increasing the risk to patient's safety. The development of surgical simulation platforms is therefore essential to reducing the risk of potentially serious risks and improving outcome.

Sixteen experienced spinal surgeons evaluated these simulators and answered the questionnaire regarding the simulation as a beneficial education tool. They evaluated the simulators in regard to dissection by planes, identification of pathology (lumbar canal stenosis), instrumentation and simulation of CSF leak and the relevant aspects of the CT imaging.

The virtual and physical simulators for spine surgery were approved by an expert surgery team, and considered adequate for educational purposes. The proportion of the answers was estimated by the confidence intervals.

The surgery team considered that this virtual simulation provides a highly effective training environment, and it significantly enhances teaching of surgical anatomy and operative strategies in the neurosurgical field. A mixture of physical and virtual simulation provided the desired results of enhancing the requisite psychomotor and cognitive skills, previously acquired only during a surgical apprenticeship. The combination of these tools may potentially improve and abbreviate the learning curve for trainees, in a safe environment.

LEVEL OF EVIDENCE: 3 ¹⁾.

¹⁾

Coelho G, Defino HLA, Andrade P. The Role of Mixed Reality Simulation for Surgical Training in Spine: Phase 1 Validation. Spine (Phila Pa 1976). 2018 Aug 31. doi: 10.1097/BRS.0000000000002856. [Epub ahead of print] PubMed PMID: 30180147.

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