



# Introductions of technological innovations in neurosurgery

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The paper by Roethe et al., partially supported by the company that manufactures the exoscope/microscope instrument evaluated in the study, compares and contrasts surgery performed using an exoscope versus a “conventional” microscope. No solid rationale is given to what is the cogent clinical question the exoscope should be poised to address [6].

The granular evaluation performed showed that the exoscope performed better than the microscope only in 1 category, upper body posture. A more synthetic evaluation showed that there was a 50% switch from exoscope to microscope, with 0% switch from microscope to exoscope.

An objective evaluation of the data seems to suggest that, at this point in time, the exoscope, an expensive piece of equipment, should be rejected from use. However, the authors’ conclusions, especially as worded in the abstract, seem to shy away from this logical assessment that is nevertheless supported by their own data.

Negative results are as important, although not as glamorous, as positive ones and should be reported as such.

Innovation for innovation sake does not advance Neurosurgery although may advance the bottom line of medical equipment producers.

At the moment, innovations are introduced in neurosurgery in a rather unstructured way, with new procedures and devices being continuously proposed and introduced with little or no oversight and without any clear evidence that they benefit patients. When innovative procedures are marketed as “minimally invasive” or “no scar” surgery or “robotic,” they generate a demand in the public for that particular procedure obviously co-opting the practicing neurosurgeon to offer it to maintain his referral base and livelihood. This creates a vicious cycle not dissimilar from that used in marketing any non-medical product or service [1–3].

Hopefully, we learned something from the introduction of endoscopes in neurosurgery, introduction that was heavily supported by the medical industry and by their anointed “medical experts” although thin on solid evidentiary data [4, 5].

## References

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This article is part of the Topical Collection on *Neurosurgical technique evaluation*

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