

Attainment of neuromicrosurgical [skills](#) is a challenge in [teaching hospitals](#) throughout [training](#). [Models](#) that mimic the [workflow](#), as well as [haptics](#), are time-consuming, expensive, unsuitable to serve as a routine platform.

Presenting a model and a set of [tasks](#), based upon a hard-boiled [egg](#), [microscope](#) and a [cavitron ultrasonic aspirator \(CUSA\)](#), which is cheap, easy to set up, and can be used for training [microsurgery](#) and [CUSA](#) skills, required for removal of deep-seated tumors.

The goal was to remove the [egg yolk](#) from within a hard-boiled egg, representing an [intrinsic brain tumor](#), surrounded by the egg's white, representing adjacent [brain tissue](#) while preserving it. The assessment was based on the yolk's exposure, completeness of removal and collateral damage, and [task](#) completion duration, with repeated trials (N=4), for validation purposes, for 6 operators with different experience levels.

Improvement in overall score (mean of 47.5 ± 19 in the 1st trial vs 80.0 ± 12 in the 4th trial, $p < 0.01$), and task duration completion (mean initial duration of $21:25 \pm 4:52$ minutes to $15:30 \pm 5:17$ minutes, $p < 0.01$) was observed. Parameters gradually improved on repeated attempts and the experience level of the operators correlated with scores.

The [egg model](#) is an easy-to-handle, cheap model that enables the acquisition of basic micro-neurosurgical skills and basic [workflow](#) required for removing [intrinsic brain tumors](#). The study of Doron et al. has validated and defined reproducible tasks that can be scored, correlated with performance. This model can be incorporated into a resident's routine and potentially provide an accessible training platform for neurosurgical trainees ¹⁾.

¹⁾

Doron O, Langer DJ, Paldor I. Acquisition of Basic Micro Neurosurgical Skills Using [Cavitron Ultrasonic Aspirator](#) in Low Cost Readily Available Models: The Egg Model. World Neurosurg. 2021 May 12:S1878-8750(21)00708-7. doi: 10.1016/j.wneu.2021.05.013. Epub ahead of print. PMID: 33991732.

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