

## EVALUATION AND VALIDATION OF A VIRTUAL REALITY BASED FLEXIBLE SIGMOIDOSCOPY TRAINER

V.K. Datta, M. Mandalia, S.D. Mackay, A.W. Darzi. *Academic Surgical Unit, Imperial College School of Medicine, St. Mary's Hospital, London, UK*

**Introduction:** Gastrointestinal endoscopy is currently taught by hands on training in the clinical setting. There are no adequate cadaveric or synthetic models to facilitate training. The PreOp™ (HT Medical) is a computer based virtual reality simulator for flexible sigmoidoscopy. It is able to record many different parameters of performance. There are six clinical modules.

**Methods:** Forty-five subjects participated in the study divided into three groups: novice (never performed lower GI endoscopy), intermediate (between 5-50, median 30), and trained (more than 200, median 747). Subjects received identical familiarisation and training on simulation modules 1 and 2, and were then assessed on module 4, which they attempted three times. Results are expressed as the geometric mean and 95% confidence intervals. Mann-Whitney U tests were used to compare each of the groups in turn.

**Results:** There was a significant difference between all three groups with respect to % mucosa visualised, procedural time, and the efficiency ratio (% mucosa/time). In addition, the novice group had a lower instrument path length score compared to the other two groups.

**Conclusion:** The results show that the PreOp™ virtual reality simulator is a valid discriminator of flexible sigmoidoscopic experience. Its effect on training needs to be explored.

	<i>Time (sec)</i>	<i>% mucosa visualised</i>	<i>Path length (cm)</i>	<i>Efficiency ratio</i>
Trained (T)	288 (158-604)	84.8 (75.5-94.1)	166 (76-245)	0.32 (0.19-0.50)
Intermed (I)	319 (157-481)	77.8 (66.5-89.1)	139 (37-241)	0.29 (0.14-0.43)
Novice (N)	475 (199-751)	71.0 (63.6-78.4)	80 (28-132)	0.16 (0.05-0.27)
Mann-Whitney	NvI p<0.01 IvT p<0.01	NvI p<0.01 IvT p<0.01	NvI p<0.01	NvI p<0.01 IvT p<0.05

(Note: **PreOp™** is now called the **AccuTouch® Endoscopy Simulator** and **HT Medical** became **Immersion Medical** as of February 2001)

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