

Virtual reality used to train surgeons

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A Case Western Reserve University scientist in Cleveland says he's developing a way to use virtual reality simulation to train brain and heart surgeons.

"Simulation is a popular training tool because it reduces the learning time and allows students to learn independently," said M. Cenk Cavusoglu, an assistant professor of electrical engineering and computer science.

Prior to joining Case in 2002, Cavusoglu helped develop laparoscopic and endoscopic tools at the University of California-Berkeley.

The challenge now, he says, is to expand such minimally invasive techniques to complex surgeries. He is also experimenting with soft tissue models and "haptics" technology to replicate the appearance and functions of the heart and brain, enabling enable surgeons to "feel" when they accomplish procedures correctly.

"Laparoscopy requires a different skill set than open surgery," Cavusoglu explains. "Surgeons typically view patients from the outside in. When a laparoscopic camera is inserted, they see patients from the inside out. Hand/eye coordination is difficult to master (so) practice on a simulator would allow surgeons to perfect their technique with no risk to patients."

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