

## Haptic Simulation of Venipuncture

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**Categories:** Other

**Keywords:**

**How to cite this poster**

Xia P, Sourin A (2013) Haptic Simulation of Venipuncture. Cureus 5(4): e557.

### Abstract

Extraction or drawing blood from veins is known as venipuncture. It is a dedicated and specialized skill that one can only become proficient after doing much observation and more important practice. This paper proposes a different image-based haptic simulation for venipuncture training. The actual photographs are used for a fast implementation of different arms with better visual immersion, and the function-based modeling method is provided for fast collision detection and computation.

**Open Access**

**Published 04/09/2013**

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