

Skin Apposition Techniques: Calculating Performance Score

The method of calculating the performance score is detailed below. Student scores for each of these factors were examined in the context of the different arms of the trial i.e.

- 3D stereoscopy ON, Tracking ON
- 3D stereoscopy ON, Tracking OFF
- 3D stereoscopy OFF (tracking therefore unavailable)

Error score: 100% for no collisions and correct beam alignment. Lose 20% for each collision and 2% per mm and/or degree inaccuracy in beam alignment to skin marks

Degree of skin apposition (defined as the standard deviation measurement available via the VERT software: $(\text{Benchmark SD} / \text{Student SD}) \times 100$)

Proximity of applicator to skin surface (defined as the mean measurement available via the VERT): $(\text{Benchmark mean} / \text{Student mean}) \times 100$

Time (in seconds) taken to achieve an 'acceptable' set-up: $(\text{Benchmark time} / \text{Student time}) \times 100$

Economy of movement - defined as the number of gantry/couch/collimator movements to achieve what the student deems to be an acceptable set up: $(\text{Total number of benchmark movements} / \text{Total number of student movements}) \times 100$

The overall set-up score was calculated as follows:

$(\text{error score} \times 0.3) + (\text{skin apposition score} \times 0.2) + (\text{applicator proximity score} \times 0.2) + (\text{set-up time score} \times 0.15) + (\text{economy of movement score} \times 0.15)$.