

## **An Evaluation of the Effect of a Kinked Cannula on Intravenous Cannula Flow Rates**

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**Objective:** To determine to what extent a kink would affect rates of saline flow through different gauges of intravenous cannulae.

**Design:** An Observational Study.

**Setting:** RCSI-MUB Laboratory.

**Method:** The flow rates of normal saline through Becton Dickinson (BD) Venflon cannulae sizes 22, 20, 18, 16 and 14 gauges (G) were measured. A kink was introduced in all cannulae immediately proximal to the catheter hub, and the flow rates were measured again.

**Result:** Statistical analysis showed a confidence interval overlap for flow rates in non-kinked versus kinked catheters sizes 14 G, 16 G and 18 G indicating that kinking does not significantly alter flow rate in these catheters. Ambiguity in the 20 G catheter data suggests that a greater sample size should be examined. Analysis of the 22 G catheter data showed a statistically significant decrease in flow rate when kinked.

**Conclusion:** Kinking was shown to have negligible effect on flow rates in 14 G, 16 G and 18 G catheters. No definitive conclusion could be drawn from 20 G data, although it was found that kinking decreased 22 G catheter flow by 9.94% on average.

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