

Efficacy of AccuVein to Facilitate Peripheral Intravenous Placement in Adults Presenting to an Emergency  
Department: A randomized Clinical Trial  
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**Introduction:**

Peripheral IV insertion is the most frequently performed intervention in the emergency department. It can sometimes have its challenges, especially in the dehydrated and very sick, obese, and extremes of age. Ultrasound guidance has become a helpful adjunct in the placement of more difficult adult peripheral lines. In many of the pediatric emergency departments, they have multiple tools in their belt, using the new laser and infralight technology to digitally trace veins for cannulation. This study looked at the use of one of these vein light tracers (AccuVein) in the adult population, a study to the authors' knowledge that has never been performed in the past. They hypothesized that the AccuVein was superior to direct visualization in vein cannulation.

**Methods:**

This was a randomized control trial involving adults only in a single center in France. There was no financial conflict in this study and the study was not blinded. Nurses were given a brief lesson on the use of the AccuVein and allowed to practice on each other before use on patients. A research assistant was then present during all of the IV placements to help hold the device, as the device requires 2 operators for use. The research assistant also collected pre and post questionnaires from both the patient and the nurse about the ease of placement and the nurse's perception on its difficulty. The time was also recorded for comparison between the two groups.

**Results:**

The primary outcome showed that there was no statistical time difference between direct visualization and the use of the AccuVein. Secondary outcomes showed there was a higher incident of movement during the procedure with the AccuView and nursing staff were dissatisfied with the use of the AccuView when compared to the standard method.

**Discussion:**

Although pediatric studies show an improvement in first time cannulation of veins using the light-laser enhanced tools, there did not appear to be any benefit in the adult population. This may be due to multiple factors, including poor training of nursing staff on the use of this tool, limited time, and the tool itself being more difficult to use. The fact that the study was not blinded, limited its usefulness as a generalizable study and likely biased staff to its use. The 2D nature of the AccuView is most likely its limitation when compared to US.

**Conclusion:**

While some of these alternate tools have found their place in certain hospital settings, they do not appear to change the speed in which IVs are placed. Their use therefore is limited.

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