

“Blood sampling via an intravenous catheter was significantly associated with an increase in the likelihood of sample haemolysis compared with sampling with a needle.” Barnard et al (2014).

Reference:

Barnard, E.B., Potter, D.L., Ayling, R.M., Higginson, I., Bailey, A.G. and Smith, J.E. (2014) Factors affecting blood sample haemolysis: a cross-sectional study. European Journal of Emergency Medicine. August 2nd. .

Haemolysis of a blood samples? IV catheter or needle? [@ivteam](http://ctt.ec/kg984+) #ivteam

Click To Tweet

Abstract:

OBJECTIVE: To determine the effect of blood sampling through an intravenous catheter compared with a needle in Emergency Department blood sampling.

METHODS: We undertook a prospective, cross-sectional study in a UK university teaching hospital Emergency Department. A convenience sample of 985 patients who required blood sampling via venepuncture was collected. A total of 844 complete sets of data were analysed. The median age was 63 years, and 57% of patients were male. The primary outcome measure was the incidence of haemolysis in blood samples obtained via a needle compared with samples obtained via an intravenous catheter. Secondary outcome measures defined the effect on sample haemolysis of the side of the patient the sample was obtained from, the anatomical location of sampling, the perceived difficulty in obtaining the sample, the order of sample tubes collected, estimated tourniquet time and bench time. Data were analysed with logistic regression, and expressed as odds ratios (95% confidence intervals; P-values).

RESULTS: Blood samples obtained through an intravenous catheter were more likely to be haemolysed than those obtained via a needle, odds ratio 5.63 (95% confidence interval 2.49-12.73; $P < 0.001$).

CONCLUSION: Blood sampling via an intravenous catheter was significantly associated with an increase in the likelihood of sample haemolysis compared with sampling with a needle. Wherever practicable, blood samples should be obtained via a needle in preference to an

intravenous catheter. Future research should include both an economic evaluation, and staff and patient satisfaction of separating blood sampling and intravenous catheter placement.

Other intravenous and vascular access resources that may be of interest (External links - IVTEAM has no responsibility for content).

- [Guide for intravenous chemotherapy and associated vascular access devices from Macmillan.](#)
- [CancerUK IV chemotherapy information.](#)

