

## Needle Gauge

### **Factors and Their Possible Consequences:**

Cannula bore gauge too large (lower gauge, e.g., 18G): Blood enters tube faster and more forcefully and may result in hemolysis and disruption of the vein.

Cannula bore too small (higher gauge, e.g., 25G): When used with a full draw tube, the RBCs may rupture due to excessive aspiration force. Blood travels through an extremely small opening under a great force. This may cause the RBC wall to shear.

### Corrective Action:

- Select an appropriate needle gauge for the vein size, location, and patient condition

### References:

1. Influence of the needle bore size used for collecting venous blood samples on routine clinical chemistry testing. Lippi G, Salvagno GL, Montagnana M, et al. Clin Chem Lab Med 2006;44:1009-1014.
2. Effectiveness of practices to reduce blood sample hemolysis in EDs. A laboratory medicine best practices systematic review and meta-analysis. Heyer NJ, Derzon JH, Wings L, Shaw C, et al. Clin Biochem 2012;45:1012-1032.