

How to avoid these errors

Mix the sample in two dimensions by rolling it between the hands AND inverting it vertically

- If the sample is visibly sedimented it needs mixing for several minutes

How to avoid these errors

- Use at least two patient identifiers
- Ensure that the sampler has an ID label attached
- Always enter patient ID into the analyser

Patient ID

Inadequate Mixing
 ↑ ↓
 (ctHb)

Diluted sample
 ↑ pO₂, cNa⁺, cCl
 ↓ pCO₂, cK⁺, cCa²⁺,
 ctHb, Lac, cGlu

How to avoid these errors

- Discard at least 3 times the dead space when you are sampling from catheters
- Draw the blood gas sample with a dedicated blood gas sampler containing dry electrolyte balanced heparin
- If in doubt of the quality of the sample, consider resampling

**Avoiding Preanalytical Errors
 In blood gas Testing**

Storage
 ↓ pH, pO₂, cGlu
 ↑ pCO₂, cCa²⁺, Lac

Air bubbles
 ↑ pH, pO₂, sO₂
 ↓ pCO₂

How to avoid these errors

- Visually inspect the sample for air bubbles
- Dislodge any bubbles by gently tapping the sides of the sampler
- Expel air bubbles
 - Right after sampling
 - Before mixing

How to avoid these errors

Cellular metabolism continues even after blood has been collected in the sampler.

This will give you a falsely reduced glucose and falsely elevated Lactate

How to avoid these errors

Do not store the sample directly on ice cubes

- Do not mix vigorously

Haemolysis
 ↑ cK,
 ↓ cNa⁺, cCa²⁺

Clotting
 ↑ cK⁺

How to avoid these errors

- Use samplers that are preheparinised with dry electrolyte-balanced heparin to avoid:
 - clotting
 - Bias on electrolytes
- Mix the sample in two dimensions by rolling it between the hands AND inverting it vertically