Overview
Lactate slides are for use on the IDEXX VetTest® Chemistry Analyzer.

Description
• Lactate production is a normal physiologic process and occurs in all animals.
• Lactate is the result of anaerobic metabolism. While its presence does not indicate any particular disease, elevated amounts of lactate are an indicator of significant metabolic derangement.
• Lactate levels are usually increased because of hypoxia or hypoperfusion.
• Lactate can also be used to characterize fitness levels in performance animals.

Sample Collection and Handling
• Serum samples should not be used. Use lithium-heparin or fluoride-oxalate plasma samples. Separate plasma from red cells within 5 minutes when using lithium-heparin.
• Overdilution with anticoagulant can cause artificially low results.
• Restraint and prolonged venous occlusion can cause mild increases.
• Whole-blood lactate values can increase steadily over time due to glycolysis if samples stay in contact with red blood cells after collection.
• Plasma samples can be kept on ice for up to 30 minutes prior to separation from the red cells.

Reference Ranges
- Canine: 0.5–2.5 mmol/L (Provisional)
- Feline: 0.6–2.5 mmol/L
- Equine: 0.5–1.78 mmol/L

Suggested diagnostic ranges for canine and feline:
- Normal: <2.5
- Mild increase: 3–5
- Moderate increase: 5–7
- Severe increase: >8

Note: Reference ranges for lactate concentrations in puppies can be higher than those in adult dogs.

Values Below Reference Range
Not clinically significant

Values Above Reference Range
- Common Causes
  - Shock (hypovolemic, cardiogenic and septic)
  - Cardiovascular insult
  - Excessive muscular activity, especially seizures
  - GDV (gastric dilatation/volvulus)
  - Hit by car
  - Ischemia of the spleen
  - Aortic thromboembolism
  - Cancer
  - Primary hypoxemia
  - Severe anemia
  - Asthma
  - Adverse drug reactions
  - Carbon monoxide poisoning
  - Diabetes mellitus

Related Findings
- Serial lactate values have been shown to be a prognostic indicator for survival of critically ill patients.

Other Laboratory Tests
- Electrolytes and blood gases
- CBC, clinical chemistry profile and urinalysis

Unit
- mmol/L to mg/dL = mmol/L • 9.01

Conversion
- mg/dL to mmol/L = mg/dL • .111

References