Evaluation of Lactate Dehydrogenase Isoenzymes (LDI)

Increased Lactate Dehydrogenase (LDH)
Exclude in vitro haemolysis
Perform Isoenzymes (if cause of LDH elevation is unclear)

Elevation of LD1
Myocardial infarction
Red blood cell diseases (e.g. haemolytic anaemia), B12 deficiency (↑ MCV)
Some muscle dystrophies (e.g. Duchenne muscular dystrophy)
Kidney disease
Kidney transplant rejection
Testicular/Germ cell tumours/rare neuroendocrine tumours
Intense exercise training

Elevation of LD2
Infections
Lung diseases (LD 2 & 3)
Congestive heart failure
Lymphocyte turnover (e.g. lymphomas/EBV) (LD 2 & 3)

Elevation of LD3
Skin (psoriasis)
Lung disease/injury
Lymphocyte turnover (e.g. lymphomas/EBV)
Splenic disorders (infarct)
Platelet destruction

Elevation of LD4
Placenta disorders

Elevation of LD5
Liver diseases: hepatitis, toxins (paracetamol)
Skeletal muscle diseases/injuries
Some intestinal problems
Pleural fluid: neutrophils (LD 4 & 5)

Elevation of multiple LDIs
Elevation of LD1, LD2, and LD5 may be caused by strenuous exercise.
Elevation of all the LDIs may be caused by injury to multiple organs (e.g. congestive heart failure, advanced cancers, autoimmune diseases, or shock).

Increases in Midzone Levels
Malignant pattern (crescendo-decrescendo pattern)

Storage
Marked LD4/LD5 decrease occurs if sample stored below room temperature. If liver/skeletal muscle LD1 is suspected, a fresh specimen is recommended.

Extra isoenzyme bands
Macrocomplex (usually benign)