Beaumont

Beaumont Laboratory

Dearborn • Farmington Hills • Grosse Pointe • Royal Oak • Taylor • Trenton • Troy • Wayne

Laboratory Bulletin

High Sensitivity Troponin I

Dearborn, Farmington Hills, Grosse Pointe, Royal Oak, Troy Hospitals
Lenox and Livonia Emergency Centers

Effective Date: 12 Sep 2023

The Abbott ARCHITECT High Sensitivity Troponin-I (TnI) assay will be performed at the labs noted above beginning 12 Sep 2023. The current Troponin-I assay will be discontinued at these sites. All other Corewell Health East campuses will temporarily continue with the current TnI test but will move to high-sensitivity TnI at a later date. High sensitivity Troponin I assay results will be reported separately from the current Troponin I results.

High sensitivity troponin assays are now the standard of care for biomarker detection of myocardial injury. The major advantages of the new assay are (1) earlier rule-out of acute myocardial injury when TnI is undetectable (< 4 ng/L) and (2) more accurate evaluation of myocardial injury in females due to sex-specific troponin reference intervals.

High sensitivity Troponin I is reported in whole numbers with units of **ng/L**. Examples of equivalent troponin levels:

CURRENT	**NEW**
TnI contemporary assay	High Sensitivity TnI assay
0.04 ng/mL	40 ng/L
0.30 ng/mL	300 ng/L
1.00 ng/mL	1000 ng/L

NOTE that TnI is elevated (above the 99th percentile of an apparently healthy reference population) in cases of severe myocardial injury such as MI, but may also be elevated in the absence of evidence of myocardial ischemia. For example, TnI elevations may be observed in heart failure, renal failure, chronic renal disease, myocarditis, arrhythmias, pulmonary embolism, stress cardiomyopathy, or other clinical conditions.

The myocardial injury is considered acute if there is a rise or fall of troponin values. When ordered as a panel, baseline and 2-h troponins will be collected and the difference (Δ, "delta" value) will be calculated and flagged in the EMR if significant. A single troponin order for the high sensitivity Troponin assay will be available as needed. Please see attached algorithm to guide Troponin evaluation.

Further education on hsTnI testing will be available in various formats to all care providers and staff members.

Date submitted: 17 Aug 2023
Submitted by:

Steven M. Truscott, PhD, DABCC, Technical Director, Clinical Chemistry, Royal Oak
Caitlin Schein, MD, System Medical Director, Chemistry, Corewell Health East

Beaumont

Beaumont Laboratory

Dearborn • Farmington Hills • Grosse Pointe • Royal Oak • Taylor • Trenton • Troy • Wayne

Laboratory Bulletin

The high-sensitivity TnI samples should be collected in a unique pearl-top K2EDTA plasma tube (BD 362788); lavender K2EDTA plasma tubes are also acceptable. High sensitivity TnI cannot be added on to other samples in the lab.

Synonyms	high sensitivity Troponin I, hsTnI, troponin, troponin panel, cardiac troponin, cTnI
Test Names and Codes	LAB8578 High Sensitivity Troponin I (standalone) LAB8579 High Sensitivity Troponin I Baseline with Reflex to 2 hour HS Troponin
Specimen Collection Criteria	One Pearl-top K2EDTA PPT plasma gel separator tube (BD 362788) or lavender K2EDTA plasma tube. (Minimum Whole Blood: 4.0 mL) Do NOT use any other blood tube or microtainer.
Physician Office /Draw Site Specimen Preparation	*Outpatient sites use only LAB8578 High Sensitivity Troponin I (standalone).* Invert tube 8 times for proper mixing of EDTA anticoagulant, then centrifuge immediately to separate plasma from cells, 1300 x g for 10 minutes (e.g., Drucker horizon mini E centrifuge). Refrigerate (2-8°C or 36-46°F) the centrifuged tube. (Minimum: 1.0 mL plasma)
Specimen Preparation for Courier Transport	• Centrifuged Pearl-top or lavender-top tube, refrigerated (2-8°C or 36-46°F). (Minimum: 1.0 mL plasma) • Labeled aliquot tube, refrigerated (2-8°C or 36-46°F). (Minimum: 1.0 mL plasma)
In-Lab Processing	Centrifuge Pearl-top or lavender top tubes received from inpatient locations to separate plasma from cells. For STAT troponin orders, centrifuge at 4000 x g for 3 minutes (e.g., StatSpin Express 4 centrifuge). For routine analysis, centrifuge at 1300 x g for 5 minutes. Specimens should be free of particulate matter. Deliver immediately to the appropriate testing station or add aliquoted labeled plasma sample to the automated line.

Date submitted: 17 Aug 2023
Submitted by:
Steven M. Truscott, PhD, DABCC, Technical Director, Clinical Chemistry, Royal Oak
Caitlin Schein, MD, System Medical Director, Chemistry, Corewell Health East

Laboratory Bulletin

Rejection Criteria	• Pearl-top or lavender top tubes with plasma not separated from cells within two hours of collection. • Specimens collected in inappropriate collection tubes. • Specimens collected in microtainer tubes. • Specimens not collected and processed as indicated. • Grossly hemolyzed specimens.
Performed	Dearborn Chemistry Laboratory Farmington Hills Chemistry Laboratory Grosse Pointe Chemistry Laboratory Livonia Main Laboratory Lenox Main Laboratory Royal Oak Automated Chemistry Laboratory Troy Chemistry Laboratory
Reference Ranges	< 4 ng/L for single-Troponin rule-out algorithm Female ≤ 17 ng/L (≤ 99th Percentile) Male ≤ 35 ng/L (≤ 99th Percentile) See attached algorithm for significant 2-hour delta Troponin values.
Critical Values	**> or = 200 ng/mL** **Delta Troponin > or = 10 ng/mL, positive or negative change**
Test Methodology	Automated Chemiluminescence Immunoassay
CPT Code	84484

Date submitted: 17 Aug 2023
Submitted by:

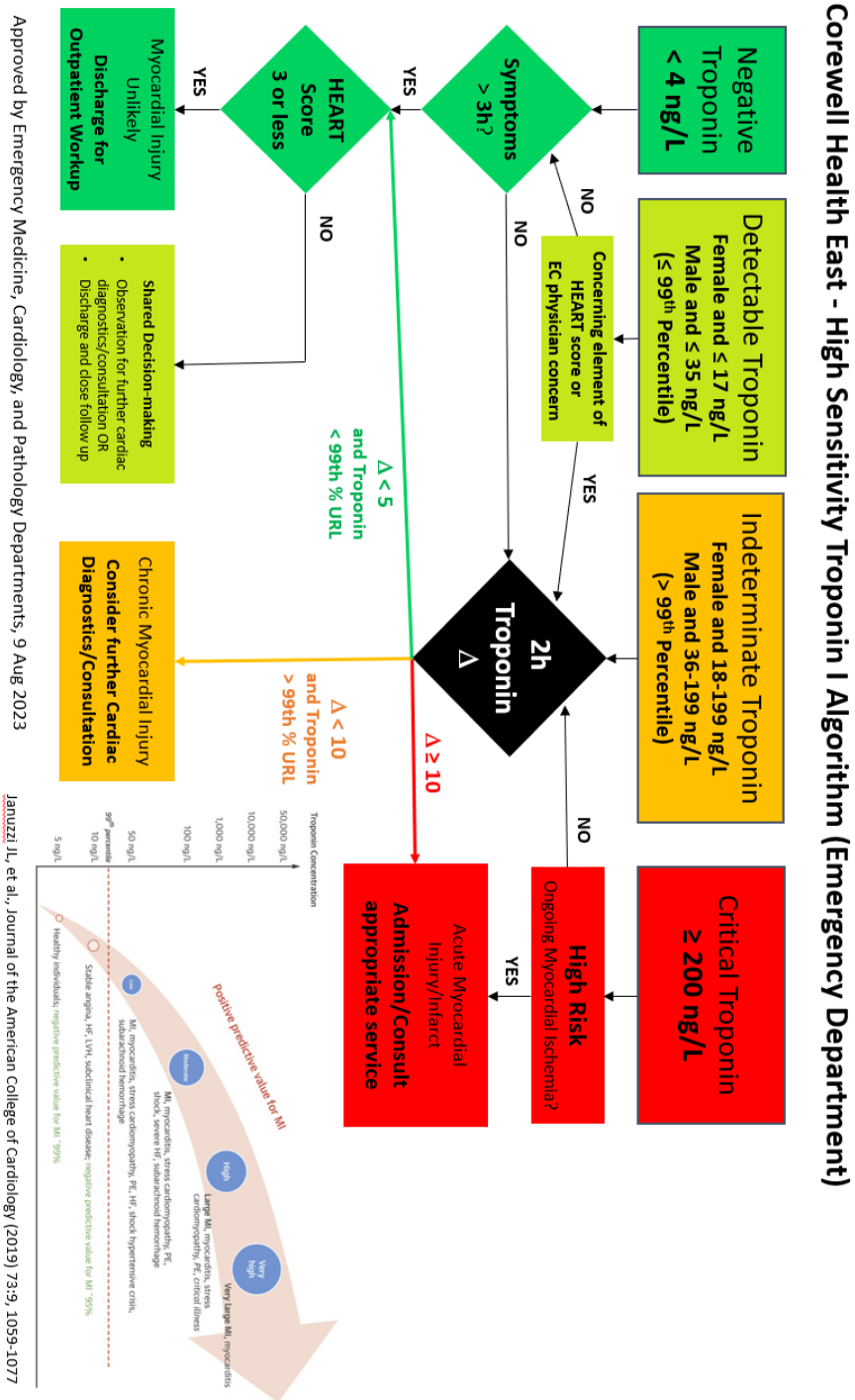
Steven M. Truscott, PhD, DABCC, Technical Director, Clinical Chemistry, Royal Oak
Caitlin Schein, MD, System Medical Director, Chemistry, Corewell Health East

Beaumont

Beaumont Laboratory

Dearborn • Farmington Hills • Grosse Pointe • Royal Oak • Taylor • Trenton • Troy • Wayne

Laboratory Bulletin



Approved by Emergency Medicine, Cardiology, and Pathology Departments, 9 Aug 2023

Januzzi JL, et al., Journal of the American College of Cardiology (2019) 73:9, 1059-1077

Date submitted: 17 Aug 2023

Submitted by:

Steven M. Truscott, PhD, DABCC, Technical Director, Clinical Chemistry, Royal Oak

Caitlin Schein, MD, System Medical Director, Chemistry, Corewell Health East