

LAB ALERT

Date: September 16, 2022

New Test: High-Sensitivity Troponin I

Dear Regional Pathology Clients,

Effective September 20, 2022, the new High-Sensitivity Troponin I (hs TnI) will be replacing the current Troponin I assay. Please inactivate test code TROP at that time. Specimen requirements remain the same (one PST green lithium heparin tube).

The new reference range is ≤ 15 pg/ml for females and ≤ 20 pg/ml for males; results above these values indicate the possibility of myocardial infarction and require additional patient evaluation. An elevated and actionable value of hs TnI is ≥ 100 pg/mL for males and ≥ 75 pg/mL for females, and indicates an increased likelihood of myocardial damage.

In addition to the troponin values, a Delta value (change from previous result, represented by Δ) will be calculated and presented as a positive or negative change measured in pg/mL. For evaluation of chest pain patients, an initial (time 0) and a repeat (3 hour) troponin value are indicated to assess the Delta value. Patients presenting with a high or critical Delta value at the 3 hour troponin repeat indicates ongoing cardiac damage. Suggested patient management algorithms can be found here: [hs Troponin I Interpretation and Patient Management Algorithms](#)

The troponin values should be evaluated in the context of the patient's Heart Score to aid in clinical management (See Tables 1 and 2).

Note: Elevations of Troponin-I may be seen in congestive heart failure, pulmonary embolism, hypertension, sustained tachycardia, myocarditis/pericarditis, renal failure, cocaine abuse and hypothyroidism". The assay should not be used to evaluate patients younger than 21 of age (e.g. children, teens, etc). These patients will typically present with elevated but unchanging troponin values over time.

OrderCode	OrderName	ResultCode	ResultName	ResultUnits	LOINC	CPT
HSTROP	CARDIAC TROPONIN I	HSCTN	HIGH SENSITIVITY CARDIAC TROPONIN	ng/L	89579-7	84484
HSTROP	CARDIAC TROPONIN I	DELTA	DELTA	ng/L		

If you have questions or concerns about this change, please contact Dr. Sam Pirruccello (phone: 402-559-7707 or 402-763-3157, pager: 402-888-1640, e-mail: spirrucc@unmc.edu).

24/7 Client Services 1-800-334-0459

Table 1. Reportable Values, Flags and Associated Comments

	High Sensitivity Troponin				Delta	
	Normal Reference Range	Flag High	Flag High Elevated and Actionable	Critical	Flag High	Critical
Males	0-20 pg/mL	21-99 pg/mL	100-374 pg/mL	≥ 375 pg/mL	11-24 pg/mL	≥ 25 pg/mL
Female	0-15 pg/mL	16-74 pg/mL	75-349 pg/mL	≥ 350 pg/mL	11-24 pg/mL	≥ 25 pg/mL
Comment		Elevated value indicating possible myocardial injury. Elevated troponin values may be seen in congestive heart failure, pulmonary embolism, hypertension, sustained tachycardia, myocarditis, pericarditis and renal failure.	Actionable value indicating myocardial injury. Elevated troponin values may be seen in congestive heart failure, pulmonary embolism, hypertension, sustained tachycardia, myocarditis, pericarditis and renal failure.	Value consistent with myocardial infarction. Elevated troponin values may be seen in congestive heart failure, pulmonary embolism, hypertension, myocarditis, pericarditis and renal failure.	The Delta Value represents the absolute change in the Troponin value from the most recent previous value (within 7 hours). A Delta value increase of ≥11 pg/mL at 3 hours from the initial Troponin value indicates ongoing myocardial injury.	The Delta Value represents the absolute change in the Troponin value from the most recent previous value (within 7 hours). A Delta value increase of ≥11 pg/mL at 3 hours from the initial Troponin value indicates ongoing myocardial injury.

Table 2. Heart Score

Heart Score	
Variables	Points
History	
Highly Suspicious	2
Moderately suspicious	1
Slightly suspicious	0
ECG	
Significant ST-segment depression	2
Nonspecific Abnormalities	1
Normal	0
Age, years	
>65	2
45-65	1
<45	0
Risk Factors	
3 or more risk factors	2
1 or 2 risk factors	1
No risk factors	0
High Sensitivity Troponin I	
>3 x normal limit Males: >60 pg/mL Females: >45 pg/mL	2
1-3 x normal limit Males: >20 pg/mL but ≤60 pg/mL Females: >15 pg/mL but ≤45 pg/mL	1
≤ Normal limit Males: ≤20 pg/mL Females: ≤15 pg/mL	0
Total	Range 0-10
Low risk is 0 to 3 points, moderate risk 4 to 6 points, and high risk ≥7 points	

1. Six AJ, Backus BE, Kelder JC. Chest pain in the emergency room: value of the HEART score. *Neth Heart J*. 2008 Jun;16(6):191-6
2. Mahler SA, Riley RF, Hiestand BC, et al. The HEART Pathway randomized trial: identifying emergency department patients with acute chest pain for early discharge. *Circ Cardiovasc Qual Outcomes*. 2015;8:195–203.