

**LAB ALERT**

**Date: August 16, 2022**

**New Test: High-Sensitivity Troponin I**

Dear Regional Pathology Clients,

Effective August 23, 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.

The new reference range is  $\leq 15$  pg/ml for females and  $\leq 20$  pg/ml for males. An elevated and actionable value of hs TnI is  $\geq 100$  pg/mL for males and  $\geq 75$  pg/mL for females, and indicates an increased likelihood of myocardial damage requiring a repeat value at 3 hours, depending on the time from onset of chest pain.

In addition to the troponin values, a Delta value (change from previous result, represented by  $\Delta$ ) will be calculated and presented as a positive or negative change measured in pg/mL. For patients presenting with an elevated initial troponin, a second troponin value at 3 hours is indicated to assess the Delta value. For patients presenting with a positive Delta value  $\geq 11$  pg/mL at the 3 hour troponin value indicates ongoing cardiac damage.

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](mailto: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
<b>Males</b>	≤ 20 pg/mL	> 20 pg/mL but < 100 pg/mL	≥ 100 pg/mL but < 375 pg/mL	≥ 375 pg/mL	< 11 pg/mL	≥ 25 pg/mL
<b>Female</b>	≤ 15 pg/mL	> 15 pg/mL but < 75 pg/mL	≥ 75 pg/mL but < 350 pg/mL	≥ 350 pg/mL	< 11 pg/mL	≥ 25 pg/mL
<b>Comment</b>		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
<b>History</b>	
Highly Suspicious	2
Moderately suspicious	1
Slightly suspicious	0
<b>ECG</b>	
Significant ST-segment depression	2
Nonspecific Abnormalities	1
Normal	0
<b>Age, years</b>	
>65	2
45-65	1
<45	0
<b>Risk Factors</b>	
3 or more risk factors	2
1 or 2 risk factors	1
No risk factors	0
<b>High Sensitivity Troponin I</b>	
>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
<b>Total</b>	Range 0-10
<b>Low risk is 0 to 3 points, moderate risk 4 to 6 points, and high risk ≥7 points</b>	

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.