

**On Tuesday May 16, 2023 at 7:00 AM, the Johns Hopkins Hospital’s Core Laboratory will switch from our current “conventional” troponin I test to high-sensitivity cardiac troponin I (HsTnI).**

“High-sensitivity” cardiac troponin (HsTnI) tests have been successfully implemented across our healthcare system and demonstrate several advantages over “conventional” cardiac troponin (Tn) assays. The use of HsTnI tests allow for the rapid detection of myocardial injury and implementation of accelerated diagnostic pathways. The HsTnI tests detect troponin at much lower concentrations in the blood than conventional tests and accomplishes this with superior analytical precision.

The adoption of the HsTnI assay will bring about several key changes:

1. **Change in reporting units**
  - a. HsTnI will be reported in ng/L
  - b. To convert the current assay units (ng/mL) to the new HsTnI units (ng/L), multiply x 1000
  - c. For example: 0.04 ng/ml (from the current assay) = 40 ng/L HsTnI

2. **HsTn assays may detect troponin in normal individuals. The assays allow for improved sensitivity in detecting elevated troponin using the upper reference limit – also known as the 99<sup>th</sup> percentile.**

JHH HsTnI Interpretation				
	Undetectable	Detectable	Elevated	Critical
Male		4 – 20 ng/L	21 – 99 ng/L	
Female	<4 ng/L	4 – 12 ng/L	13 – 99 ng/L	≥ 100 ng/L
Unspecified		4 – 18 ng/L	19 – 99 ng/L	

3. **A single HsTnI value above the 99<sup>th</sup> percentile in isolation is NOT enough to differentiate between chronic myocardial injury (ex. myocarditis, chronic kidney disease) versus acute myocardial infarction (ex. Type 1 MI). If there is concern for acute myocardial infarction or injury, it is important to complete serial testing to assess the Delta Value.**
  - a. Delta Value = Change (rise or fall) in the HsTnI value over time. The delta value may be significant whether the change in troponin is positive or negative.
4. **JHH-specific ED and inpatient HsTnI diagnostic protocols are accessible in **AgileMD** to help risk-stratify patients that have chest pain concerning for ACS or an acute cardiac condition.**
5. **The orderable test will be named “hs-Trop-I (JHH BMC)”**. There will be a few ordering options:
  - a. **“Standalone” order** (Delta Values will not be calculated with these orders).
  - b. **Timed series** (Delta Values will generally be calculated when the series are ordered and drawn on time).
    - i. ED-specific timed series: Samples drawn at 0 hours, 1 hour, 3 hours.
    - ii. Inpatient-specific timed series: Samples drawn at 0 hours, 3 hours.
  - c. Because of the time sensitive nature, **it is not possible to add-on** HsTnI assay to existing samples.

- d. The HsTnl needs to be sent on a new different tube type: lithium heparin plasma tubes: Light Green preferred; although dark green tubes acceptable.

**We strongly recommend that you review the AgileMD Guidelines to help facilitate a successful transition and promote the best utilization of HsTnl testing. An educational [deck](#) and [video](#) are also available.**

The JHH transition to high-sensitivity troponin team (including key stakeholders from emergency medicine, cardiology, hospitalist medicine, pathology, nursing and IT).

For questions related to this transition, please email your inquiries to:

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