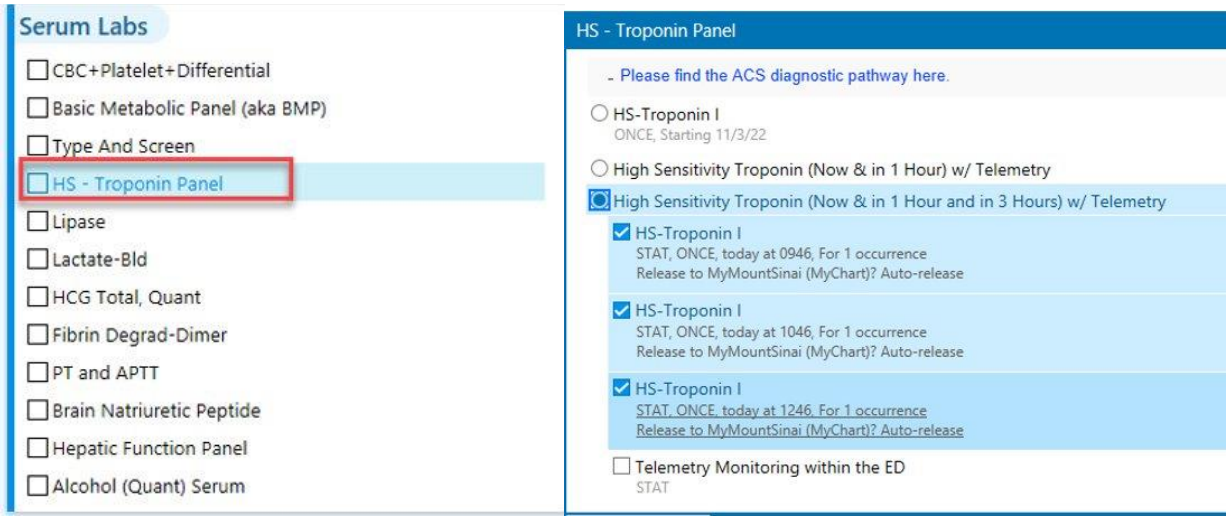
High Sensitivity Troponin Frequently Asked Questions

Which Troponin order should be selected?

The troponin order panel contains options for a single troponin, a 0- and 1-hour troponin, and a 0-, 1-, and 3-hour troponin. Patients who are getting troponin testing for non-ACS conditions (e.g. myocarditis, PE, etc.) should be ordered for a single troponin if ACS is not suspected. Patients being evaluated for ACS that are low to moderate risk should get a 0- and 1-hour troponin ordered. Based on the results the provider can subsequently order a scheduled 3-hour troponin. If a patient is low risk and symptoms have been >3 hours, a single high sensitivity troponin may be appropriate. Patients who are high risk or will likely fall in the grey-zone pathway should get a 0-, 1-, and 3-hour troponin ordered. If a patient is ruled out based on the pathway and additional troponins were scheduled, please ensure they are canceled prior to collection.



Which patients should be placed on a Cardiac Monitor or Telemetry Monitoring during an ACS work up?

Patients who are at moderate to high risk for ACS should be placed on cardiac or telemetry monitoring while being evaluated for ACS until it has been ruled out using the accelerated diagnostic pathway. Patients who rule in should be maintained on telemetry monitoring. Patients with a history of PCI or CABG within the last year, history of abnormal stress/cath within the last year, new regional ischemic EKG changes, frequent PVCs, new bundle branch block, and/or concerning signs or symptoms (Typical chest pain or anginal equivalent presentation) are especially high risk and should always be on a monitor. These patients should not have routine imaging ordered until their ACS work up is complete. Additionally, if patients must be transported, they should be maintained on a monitor and be accompanied by clinical staff.

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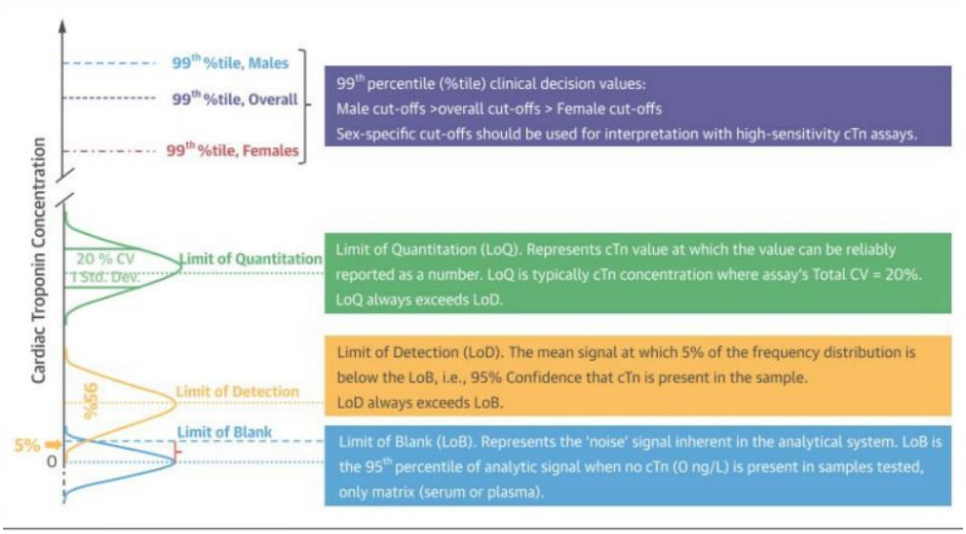
Is a Troponin above the cutoff value in the result section considered positive?

The cutoff values shown in the result represent the sex-specific 99th percentile. There are no longer positive or negative values, but instead values should be trended and used with the HEAR(T) score to appropriately risk stratify and disposition the patient.



An understanding of these terms facilitates transition to high-sensitivity cardiac troponin testing. %tile = percentile; cTn = cardiac troponin; CV = coefficient of variation; LoB = limit of blank; LoD = limit of detection; LoQ = limit of quantitation; Std. Dev. = standard deviation.

How do you apply sex-based cutoffs to patients who are transgender or non-binary? How do you apply sex-based cutoffs to patients who are unable to be identified and are registered as unknown or who prefer not to disclose their sex?

These patients should be evaluated using the lower cutoffs that are shown in the Accelerated Diagnostic Pathway. This is because limited data exist in the use of sex-based cutoffs for these populations and using the lower cutoffs will maintain sufficient sensitivity in order to avoid inappropriately discharging patients who could have an acute coronary syndrome.

How do we manage patients with a Troponin elevation who clinically do not have symptoms concerning for ACS?

Patients with rising or falling troponins that do not have signs of symptoms of active ischemia (e.g., chest pain, EKG changes, new wall motion abnormalities) are likely suffering from acute myocardial injury. Differentiating between myocardial injury and Type 2 MI will require clinical judgement and when the diagnosis is unclear should involve a Cardiology consult for definitive management recommendations.

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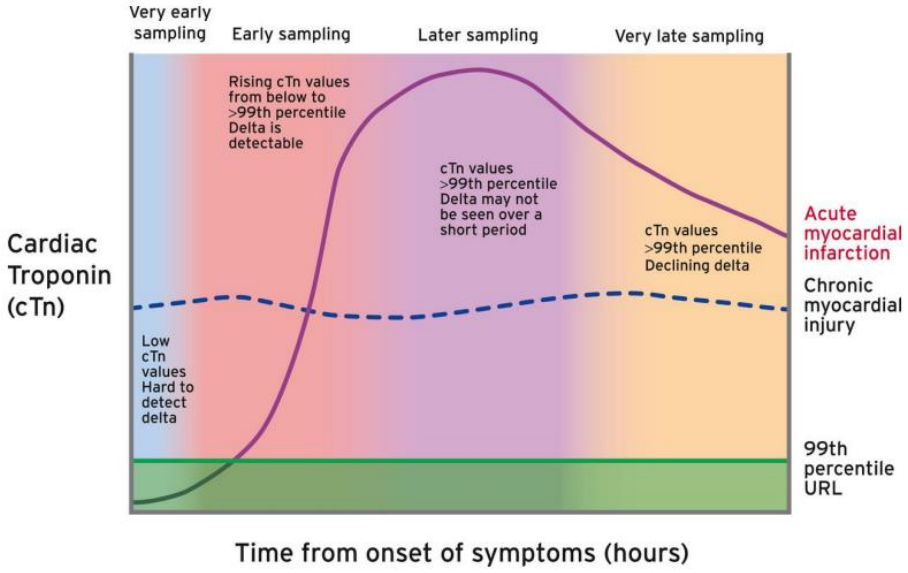
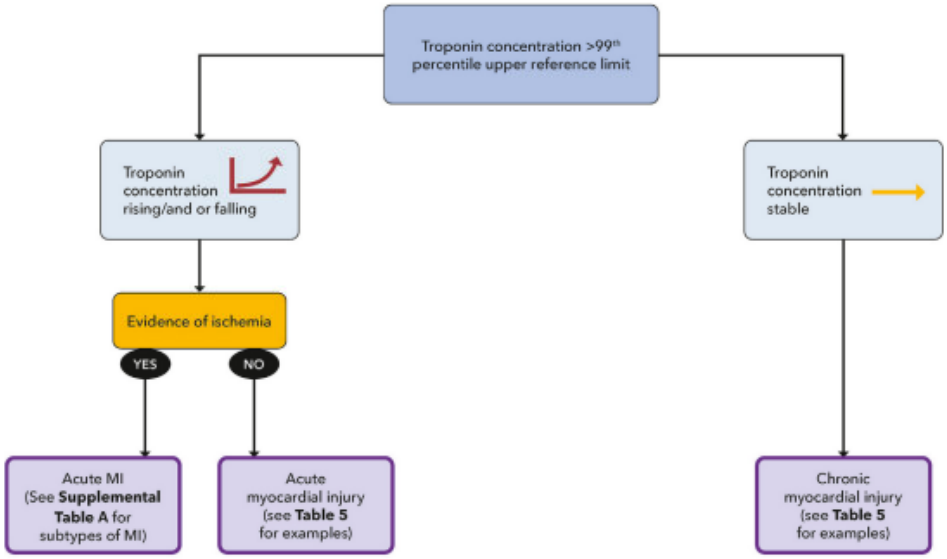


Kristian Thygesen et al. JACC 2018;j.jacc.2018.08.1038



Kontos M, de Lemos J, et al. 2022 ACC Expert Consensus Decision Pathway on the Evaluation and Disposition of Acute Chest Pain in the Emergency Department. J Am Coll Cardiol. 2022 Nov, 80 (20) 1925–1960. https://doi.org/10.1016/j.jacc.2022.08.750

Can we compare high-sensitivity Troponins to previous Troponin values?

There is no way to compare high-sensitivity Troponin values to non-high sensitivity Troponin values and converting units is not an appropriate method of comparing trends.

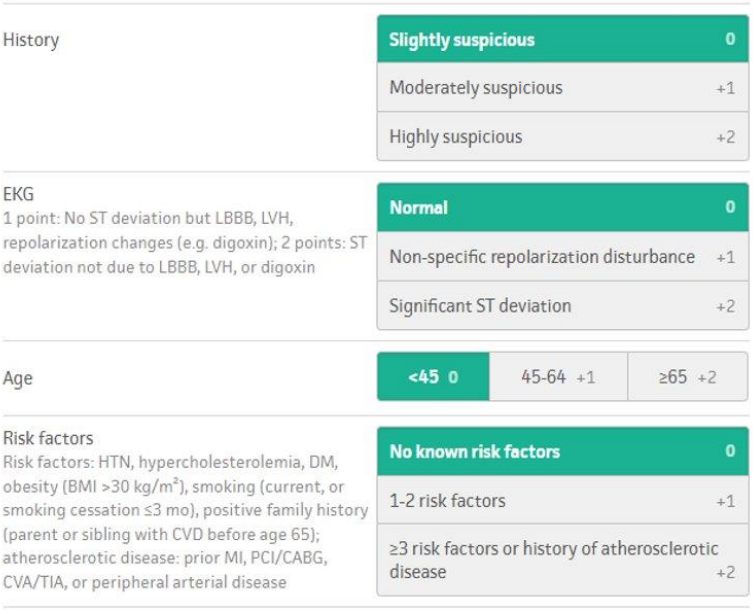
High Sensitivity Troponin Frequently Asked Questions

How do you calculate a delta Troponin?

The 1 hour delta should be calculated by subtracting the 0 hour troponin from the 1 hour troponin. The 3 hour delta should be calculated by subtracting the 0 hour troponin from the 3 hour troponin. The delta values shown in the pathway are an absolute value and therefore large positive or negative deltas are concerning for active myocardial ischemia.

How do you incorporate the Troponin result into the HEAR(T) Score?

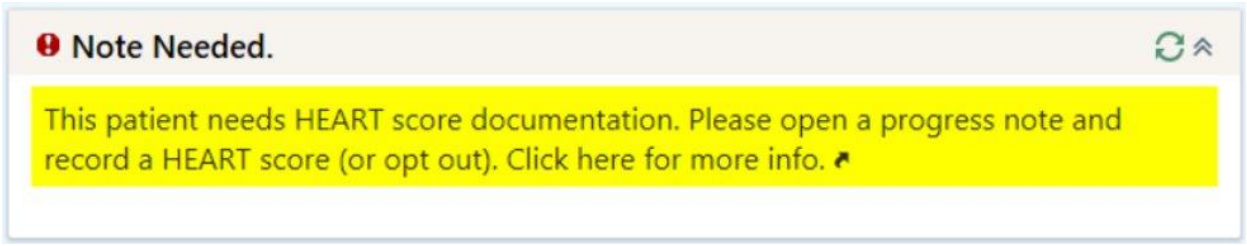
When calculating a HEAR(T) score, the Troponin is no longer included. This means the maximum score is 8 and only incorporates points for History, EKG, Age, and Risk Factors.

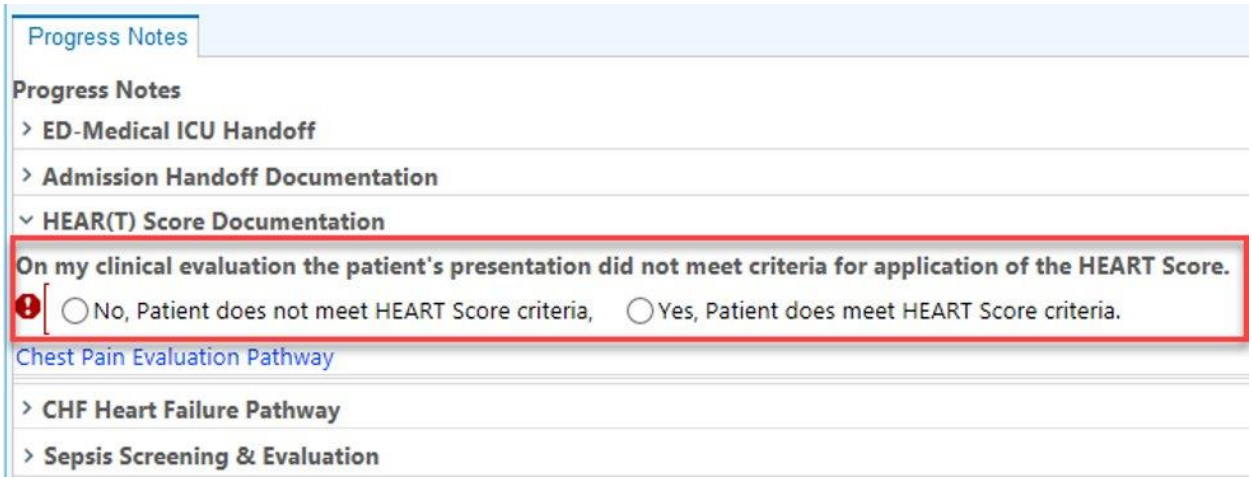


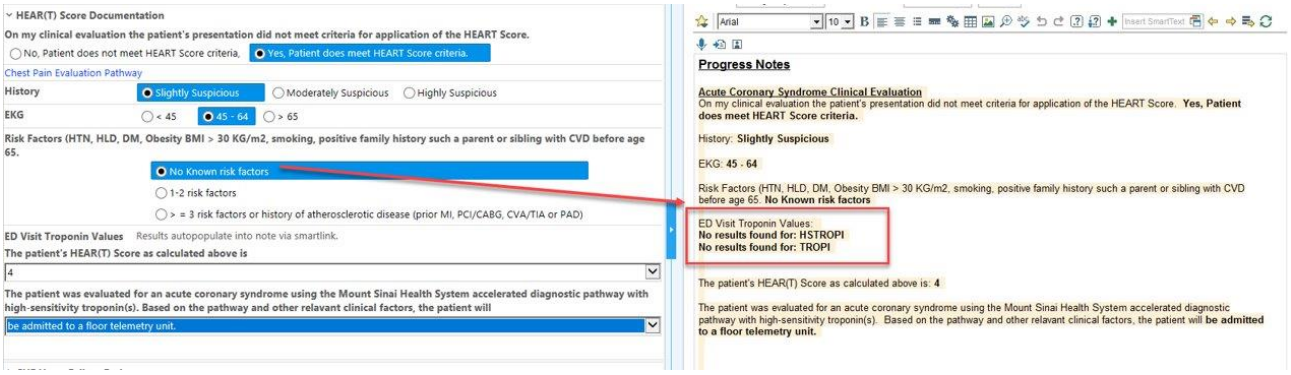
High Sensitivity Troponin Frequently Asked Questions

Why does my patient have a banner alert for HEAR(T) Score documentation?

Patients who present to the ED with symptoms concerning for ACS who have a Troponin ordered will trigger a banner alert recommending HEAR(T) Score documentation as shown below. If the provider believes this alert is incorrect, they can simply select “No, patient does not meet HEAR(T) Score criteria” to make the alert disappear. If the alert is correct, the provider should click the alternative option and complete the documentation as shown.







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How do we arrange 72 hour follow up for patients who are evaluated for ACS and are recommended for this based on their results and the accelerated diagnostic pathway?

Please refer to the separate 72-hour follow-up guide for arranging follow-up at your respective institution. This should be used for patients who do not have a cardiologist and are unable to independently arrange follow-up. Patients who have a primary cardiologist should attempt to contact their cardiologist and ensure they can be appropriately followed up. Patients who cannot be scheduled by the clinic over the phone should be considered for a same day work up in the hospital. Alternatively, the social work and care management team can be engaged to help with complex follow-up cases.