**Interpretation of 5th Gen Troponin T Results**

See algorithm for complete details

<table>
<thead>
<tr>
<th>0 hour result</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F:</strong> ≤10ng/L</td>
<td>Acute myocardial injury ruled out</td>
</tr>
<tr>
<td><strong>M:</strong> ≤15ng/L</td>
<td>Acute myocardial injury ruled out</td>
</tr>
<tr>
<td>&amp; Pain onset &gt; 6 hrs</td>
<td>Indeterminate: 2-hour test recommended</td>
</tr>
<tr>
<td>&gt;100ng/L</td>
<td>Acute myocardial injury ruled in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2 hour change</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤3 ng/L</td>
<td>Not changing: Acute myocardial injury ruled out</td>
</tr>
<tr>
<td>4-9ng/L</td>
<td>Indeterminate: 6-hour test recommended</td>
</tr>
<tr>
<td>≥10ng/L</td>
<td>Changing: Acute myocardial injury ruled in</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>6 hour change</th>
<th>Interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;12ng/L</td>
<td>Not changing: Acute myocardial injury ruled out</td>
</tr>
<tr>
<td>≥12ng/L</td>
<td>Changing: Acute myocardial injury ruled in</td>
</tr>
</tbody>
</table>

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**Colored**

**F**

**M**

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### Effect Date: April 9 2019

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**5th Generation Troponin T Major Points**

Troponins are released during myocyte necrosis and/or increased permeability of the cell wall. Generally they are cardiac specific, however are not specific for MI.

5th Generation troponin T is a high-sensitivity troponin T test and is the biomarker of choice to test for possible myocardial injury. Elevation begins early after myocardial injury and may remain elevated for more than 14 days.

Interpretation and risk stratification requires the integration of clinical data.

Elevated values may not be due to acute myocardial infarction however may indicate myocardial injury (acute or chronic). A rising and/or falling pattern distinguishes acute from chronic myocardial injury.

Patient’s with stable increases in 5th gen troponin are at increased long term risk however should not require hospitalization based solely on a single lab result.

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**CAUSES OF ↑ TROPONIN T (EXCLUDING ACS)**

1. Sepsis
2. Renal failure
3. Acute respiratory failure
4. Shock/hypotension/hypoperfusion
5. Heart failure
6. Pulmonary embolism
7. Stroke
8. Severe hypertension
9. Malignancy

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**No interference seen up to**

- Skeletal muscle troponin T 10000 ng/L
- Skeletal muscle troponin I 100000 ng/L
- Cardiac troponin I 10000 ng/L
- Human troponin C 80000 ng/L

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**Samples showing visible signs of hemolysis may cause interference.**

Falsely depressed results are obtained when using samples with free hemoglobin concentrations > 0.1 g/dL.

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The algorithm and information were assembled by and with the assistance of Dr. Robert Schneider Chief of Medical Residents, Internal Medicine, Dr. Clint Hawthorne Associate Medical Director Emergency Department UnityPoint DSM and Dr. Larry Anderson, Medical Director UnityPoint Labs, DSM. Information was obtained from Mayo Medical Laboratories website and Allan S. Jaffe, MD Department of Cardiovascular Diseases Mayo Clinic

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Yader Sandoval, MD, Allan S. Jaffe, MD. Using High-Sensitivity Cardiac Troponin T for Acute Cardiac Care . The American Journal of Medicine (2017) 130, 1358–1365