

Fourth Universal Definition of Myocardial Infarction

The fourth universal definition focuses on identification of myocardial injury—elevated troponin—and the process of determining the mechanism as ischemic (infarction) or non-ischemic.

An **acute** myocardial infarction (AMI) is defined as **acute** myocardial injury with:

- **Troponin** rise and fall, or fall of already elevated troponin value (with one value above the 99th percentile URL) ***and***
- **At least one** of the following:
 - Symptoms of myocardial ischemia;
 - ECG – New ischemic changes;
 - ECG – Development of pathologic Q waves;
 - Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality in a pattern consistent with an ischemic etiology;
 - Identification of a coronary thrombus by angiography or autopsy (not for types 2 or 3 MIs).

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| Type 1 MI | A coronary artery event via plaque disruption or dissection |
| Type 2 MI | <i>Not</i> a coronary artery event. Myocardial oxygen demand is not met by oxygen supply. Coronary artery plaque may or may not be present but is unchanged. |
| Demand Ischemia | Cardiac demand ischemia is the same thing as angina, supply-demand mismatch without infarction: <ul style="list-style-type: none"> • Angina + elevated troponin = AMI • Demand ischemia + elevated troponin = type 2 AMI |

Acute myocardial injury is defined as $\geq 20\%$ variance in troponin values (to distinguish from stable elevation).

Coding Rules allow qualifying a diagnosis as “**likely**,” “**probable**,” “**suspected**” at the time of discharge (i.e., discharge summary).

Source: Thygesen K, et al. **Fourth universal definition of myocardial infarction (2018)**. *Circulation*. 2018