

Type 2 MI Compared to Demand Ischemia

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Demand ischemia should be reserved for when there is evidence of supply-demand mismatch causing ischemia **without an elevated troponin** above the 99th percentile (URL).

Type 2 MI should be diagnosedⁱ when:

- Myocardial injury as evidenced by cTn > 99th percentile upper reference limit (URL) **AND**
- A rise and/or fall in troponin **AND**
- Evidence of imbalance between myocardial oxygen supply and demand causing acute myocardial ischemia (one of the criteria below)
 - Symptoms of myocardial ischemia (chest pain, SOB, etc.)
 - New ischemic ECG changes
 - Development of pathological Q waves
 - Imaging evidence of new loss of viable myocardium or new regional wall motion abnormality in a pattern consistent with an ischemic etiology

	Demand Ischemia	Type 2 MI
Troponin level	< 99 th percentile (URL)	> 99 th percentile (URL) with rise and/or fall in level
Evidence of ischemia	Yes	Yes
Supply-demand mismatch	Yes	Yes
DRG impact	CC	MCC

Examples

1. 78-year-old male with an acute COPD exacerbation with a HR of 130 and RR of 34. He experiences chest pain which is believed to be secondary to an oxygen supply-demand mismatch. Troponin levels are as follows: 0.04 ng/ml, 0.05 ng/ml and 0.04 ng/ml (99th percentile URL = 0.08 ng/dl)
 - **Diagnosis: Demand Ischemia.** The patient has evidence of ischemia secondary to an oxygen supply- demand mismatch with **troponin values ≤ 99th percentile (URL).**
2. 78-year-old male with an acute COPD exacerbation with a HR of 130 and RR of 34. He experiences chest pain which is believed to be secondary to an oxygen supply-demand mismatch. Troponin levels are as follows: 0.04 ng/ml, 0.28 ng/ml and 0.17 ng/ml (99th percentile URL = 0.08 ng/dl)
 - **Diagnosis: Type 2 MI.** The patient has evidence of ischemia secondary to an oxygen supply-demand mismatch with **a rise in troponin values > 99th percentile (URL).**

ⁱ Alpert, Joseph S. "The Fourth Edition of the Universal Definition of Myocardial Infarction." *The American Journal of Medicine*, vol. 131, no. 11, 2018, pp. 1265–1266., doi:10.1016/j.amjmed.2018.06.016.