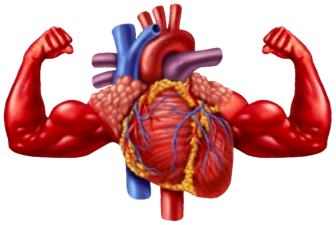
Troponin Quantitative Test

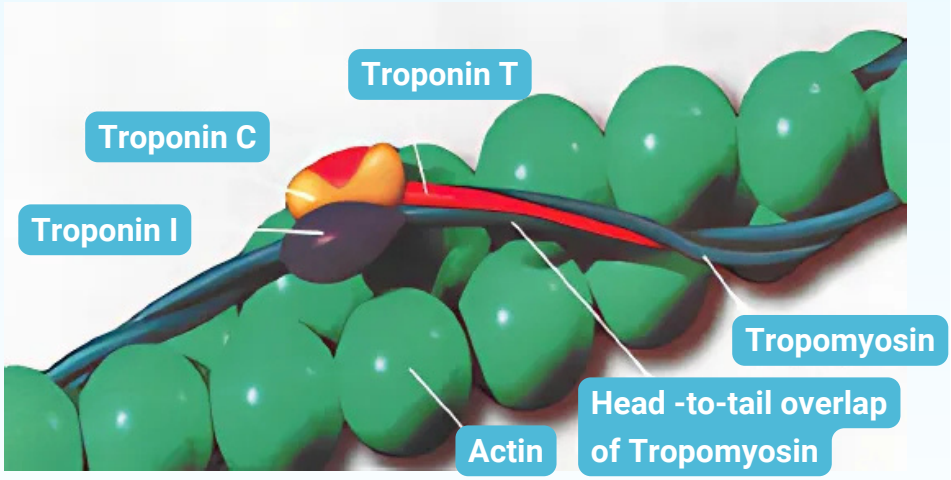


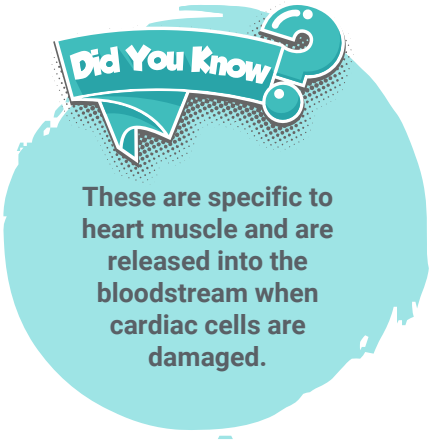
NEWSLETTER

Compiled by: International Clinical Laboratories (ICL)

What are Troponins?

Troponins are regulatory proteins involved in muscle contraction, particularly in skeletal and cardiac muscle. They help control the interaction between actin and myosin, the proteins responsible for muscle contraction. Their activity is calcium-dependent.





There are 3 Troponin subtypes in general:

Troponin C (TnC)	Troponin I (TnI)	Troponin T (TnT)
binds calcium	inhibits actin-myosin interactions	binds the troponin complex to tropomyosin

Troponin test is used for:

- Exclusion diagnosis of acute myocardial infarction
- Monitoring acute coronary syndromes and estimating prognosis
- Possibly monitoring patients with non-ischemic causes of cardiac injury

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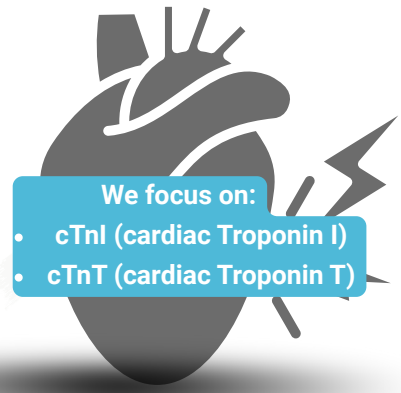
In the early stages of myocardial injury, troponin T is released from the unbound (free) pool within the cardiac muscle cells. As the damage progresses and myofibrils begin to degrade during irreversible myocardial injury, bound troponin T—which is structurally attached to the contractile apparatus—is gradually released.



We focus on:

- **cTnI (cardiac Troponin I)**
- **cTnT (cardiac Troponin T)**

The most common cause of cardiac injury is myocardial ischemia, particularly in the setting of an acute myocardial infarction (AMI). Following the onset of myocardial necrosis, troponin T levels begin to rise within 2 to 4 hours and can remain elevated for up to 14 days, making it useful for diagnosing both early and late presentations of AMI.

In contrast, troponin I is absolutely specific to cardiac tissue, making it an ideal biomarker for detecting myocardial injury with minimal risk of interference from skeletal muscle sources.

DIAGNOSTIC EVALUATION

(Normal Values)	(Abnormal Values)	(Interpretation)
<0.01 ng/mL Values > or =0.01 ng/mL have been shown to have prognostic value. Troponin test awith ARCHITECT SYSTEM-STAT high sensitive troponin-I the cut-o point is 15.6 pg/ml for females and 34.2pg/ml for males	**Levels greater than 2.0 ng/mL indicate a person has had a significant myocardial injury, such as an infarction, and is at an increased risk for future serious heart events. Levels between 0.5 and 2.0 ng/mL indicate a diagnosis of unstable angina, other heart disorders, or chronic kidney failure.**	**The upper limit for normal individuals is <0.01 ng/mL. Troponin T values > or =0.01 ng/mL are a prognostic sign in patients with ischemic heart disease and most other situations. All patients with > or =0.01 ng/mL troponin T are at increased risk for cardiac events.**

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