

Serum enzymes and other biomarkers in acute MI

From where	1- Creatine kinase (CPK)	2- Aspartate amino transferase (AST)\(SGOT)	3- Lactate dehydrogenase (LDH)	4- Cardiac troponins	5- Myoglobin as cardiac marker	Brain Natriuretic Peptide (BNP)
Normal level	10-50 U/L at 30°C	8-20 U/L at 37°C	55-140 U/L at 30°C			
Increase within	3-6 hours	sharply within the first 12 hours	12 to 24 hours		1 hour	
Reach peak level in	24- 30 hours	24 hours or over	48 hours (2 to 4 days) reaching about 1000 U/L			
Return to normal level in	2-4 days (usually in 72 hours)	3-5 days.	8 - 14 day			



Troponin	Early Rise(hrs)	Peak (Hrs)	Duration (Days)	Specificity	Sensitivity
Tn T	4-6	10-24	10-24	80%	>98%
Tn I	3-6	1-24	4-7	95%	>98%

ALT is found primarily in the liver.

- Normal level: 5-30 U/L

GGT in liver:

Normal serum value of GGT is 6-45 U/L in male and 5-30 U/L in female.

Aldolase in muscle disease:

Normal range of serum is 1.5-7 U/L

Serum enzymes in GI tract diseases

From where	1- Amylase	2- Lipase	3- Enolase	4- Prostate specific antigen (PSA)	5- Cholinesterase	6- Glucose-6-phosphate dehydrogenase
Normal level	50- 120 U/L	0.2-1.5 U/L		1 -5 µg/L	<ul style="list-style-type: none"> - Acetyl cholinesterase (true cholinesterase or Type 1 cholinesterase): 2-12 U/ml - Pseudocholinesterase or type II cholinesterase: 8-18 U/ml 	- Normal value of GPD in RBC is 125-250 U/1012 cells.
Increase within	Serum activity > 1000 units is seen within 24 hours	Levels as high as 2800 U/l are seen in acute pancreatitis and persists for 7-14 days	- Upper limit of NSE is 12 µg/ml.			
Marker to	<ul style="list-style-type: none"> 1- acute pancreatitis 2- perforated peptic ulcer 3- intestinal obstruction 	<ul style="list-style-type: none"> 1- acute pancreatitis 2- perforated duodenal and peptic ulcer 3- intestinal obstruction 4- mumps 	<p>NSE is a tumor marker for cancers associated with neuro – endocrine origin:</p> <ul style="list-style-type: none"> 1- small cell lung cancer, 2- neuroblastoma, 3- pheochromocytoma, 4- medullary carcinoma of thyroid 	-Values between 4-10 µg/L is seen in benign prostate enlargement; but values above 10 µg/l is indicative of prostate cancer		