

COMON SERUM ENZYME TESTS

Enzyme	Notes	↑						
<p>1- Creatinine kinase CK</p>	<ul style="list-style-type: none"> - Known as Creatinine Phosphokinase (CPK) - Found in ♥ muscle, skeletal & brain tissue - Diagnosis of myocardial or skeletal damage - Isoenzymes : CK-MB → ♥ muscle CK-MM → Skeletal Muscle CK-BB → Brain tissue - These isoenzymes differentiate source of damage + (Graph P.42) 	<ul style="list-style-type: none"> - CK : Vigorous exercise, fall or deep intramuscular injections - CK-MB : myocardial necrosis 						
<p>2- Lactate dehydrogenase LDH</p>	<ul style="list-style-type: none"> - Catalyzes the interconversion of <u>lactate & pyruvate</u> - 5 Isoenzymes : LDH₁ & LDH₂ → ♥ LDH₃ → Lungs LDH₄ & LDH₅ → Liver & Skeletal m. - This distribution helps in diagnosing: myocardial infarction, lung diseases and hepatic diseases. 							
<p>3- Alkaline phosphatase ALP</p>	<ul style="list-style-type: none"> - Produced in liver & bones 	<ul style="list-style-type: none"> - Biliary obstruction : partial or mild, extrahepatic (stone in bile duct) or intrahepatic - ↑ Osteoblastic activity : Paggets disease - Hyperparathyrodism - Osteomalacia 						
<p>4- Aspartate aminotransferase AST</p>	<ul style="list-style-type: none"> - Known as <u>SGOT</u> (Serum glutamic-oxaloacetic transaminase) - Found in ♥ & liver – Lesser extent in skeletal muscle, kidney tissue & pancreatic tissue 	<ul style="list-style-type: none"> - Heart damage (8 hrs after injury) - Acute hepatitis: ↑ markedly - Cirrhosis & Fatty liver: ↑ mildly - Passive Congestion of the liver (as in CHF) 						
<p>5- Alanine aminotransferase ALT</p>	<ul style="list-style-type: none"> - Known as <u>SGPT</u> (Serum glutamic-pyruvic transaminase) - Found in liver – lesser extent in ♥ , skeletal muscle & kidney - Specific to liver cell damage - <u>Less sensitive</u> than AST 	<ul style="list-style-type: none"> - Severe liver damage - Acute myocardial infarction: less consistently & less markedly than AST 						
<p>6- Cardiac troponins (I & T)</p>	<ul style="list-style-type: none"> - New method to identify myocardial cell injury → assist in diagnosis of acute myocardial infarction - Specific where <u>false-positive elevations of CK-MB</u> <table border="1" data-bbox="510 1365 2022 1528"> <tr> <td data-bbox="510 1365 688 1487">Troponin T</td> <td data-bbox="688 1365 1087 1487">In cardiac & skeletal muscle</td> <td data-bbox="1087 1365 2022 1487">Show prognostic values in <u>unstable angina</u> Detect minor myocardial cell injury with <u>greater sensitivity</u> than CK-MB</td> </tr> <tr> <td data-bbox="510 1487 688 1528">Troponin I</td> <td data-bbox="688 1487 1087 1528">In cardiac muscle <u>only</u></td> <td data-bbox="1087 1487 2022 1528"></td> </tr> </table>		Troponin T	In cardiac & skeletal muscle	Show prognostic values in <u>unstable angina</u> Detect minor myocardial cell injury with <u>greater sensitivity</u> than CK-MB	Troponin I	In cardiac muscle <u>only</u>	
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