Creatine Kinase (CK)

UKAS MEDICAL 7880 Accredited to ISO 15189:2012

Synonyms	Creatine phosphokinase, CPK
Clinical Indication	Used in the investigation of muscle pain, especially when this occurs in patients on statins. Serum CK begins to rise within 2 to 12 hours following the onset of muscle injury and reaches its maximum within 24 to 72 hours. Levels are raised in patients with muscle damage, e.g. rhabdomyolysis or after strenuous activity, e.g. marathon running, rugby. According to the NICE guidelines: CK should be measured before offering a statin if a patient has had persistent generalised unexplained muscle pain, whether associated or not with previous lipid-lowering therapy. Elevations in aminotransferases or lactate dehydrogenase may suggest the need for CK testing if it has not been performed in a patient in whom such abnormalities may potentially be due to muscle injury rather than hepatic injury or another cause.
Part of Profile / See Also	
Request Form	Combined Pathology manual Blood form or ICE request
Availability / Frequency of Analysis	On request.
Turnaround Time	Same day
Patient Preparation	None
Sample Requirements	
Specimen Type	Serum and plasma
Volume	2 ml
Acceptable Containers	 Yellow top (SST) tube  Green top (lithium-heparin) tube  paediatric orange top (lithium-heparin)  paediatric green top (lithium-heparin) Plain serum samples may also be used.
Reference Range & Units	Reference range Male: <320 iu/L Female: <200 iu/L

	Reference: Pathology Harmony Group, Clinical Biochemistry Outcomes, January 2011 Levels are higher in non-Caucasians and after strenuous exercise.
Interferences	Occasionally, a high CK may be the result of a patient having circulating macro-CK complexes. Please contact the laboratory to discuss if persistently raised CK level without obvious cause. Plasma samples may occasionally produce unpredictable rate reactions resulting in false low results
Interpretation & Clinical Decision Value (if applicable)	Raised CK levels are associated with muscle injury. CK concentrations in non-Caucasians may be 2 to 5 times higher than the reference range. Serum CK levels in rhabdomyolysis are usually at least five times the upper limit of normal, but range from approximately 1500 to over 100,000 iu/L. In relation to statin treatment: • Prior to starting: If CK levels are more than 5 times the upper limit of normal, re-measure CK after 7 days. If Ck levels are still 5 times the upper limit of normal, **DO NOT** start statin treatment. • If CK levels are raised but less than 5 times the upper limit of normal, start statin treatment at a lower dose. • Patients treated with a statin should seek medical advice if they develop muscle symptoms (pain, tenderness or weakness) and CK should be measured.
References	NICE CG187 Cardiovascular disease: risk assessment and reduction, including lipid modification (2014) Brewster et al. Distribution of creatine kinase in the general population: implications for statin therapy. Am Heart J. 2007;154(4):655
Test code	CK
Lab Handling	Analysed from primary tube and stored at 4°C Serum and plasma stable for 1 month at 2-8°C (WHO)