

Aluminium (plasma/serum)

Description	Trace/toxic metal
Indication	Dialysis patients & occupational exposure (inhalation)
Additional Info	<p>Aluminium is not usually a problem in the majority of patients, but in those who have developed end stage renal disease (ESRD) and need dialysis, aluminium may present problems. This is because during dialysis, any aluminium in the water is introduced to the patient directly into the circulation, bypassing the usual safeguards of the intestinal system which normally shows little absorption. However, the recent introduction of reverse-osmosis purified water to prepare dialysate fluid has minimised the risk of exposure. In addition, aluminium hydroxide use as a phosphate binder in renal disease has been largely replaced by calcium-based binders or sevelamer. Both of these measures now significantly reduce the risk of aluminium toxicity in ESRD and dialysis patients.</p> <p>Aluminium toxicity can lead to dementia, anaemia and bone disorders.</p> <p>Treatment can be given to lower the body burden of aluminium, and so monitoring of aluminium levels is required.</p>
Concurrent Tests	N/A
Dietary Requirements	N/A
Interpretation	<p><0.5 µmol/L = Normal subjects (non-renal failure/dialysis)</p> <p>2.2 – 3.6 µmol/L = Excessive accumulation (adults)</p> <p>>3.7 = Cause for concern in adults</p>
Collection Conditions	<p>Serum tubes with clot activators containing Fuller's Earth should be avoided as they contain aluminosilicate.</p> <p>Lithium heparin (+/- gel) is the required specimen type at RLBUHT owing to the presence of Fuller's Earth in the Sarstedt serum collection tubes.</p>
Frequency of testing	<p>Regular monitoring of serum aluminium levels may not be required in ESRD and dialysis patients due to the reasons described above minimising the risk. However it should be considered if patients have any signs or symptoms of toxicity or have been exposed to contaminated water.</p>

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