

<h2>Sodium (serum)</h2>	
Description	Principal extracellular cation. Measured as part of U&E profile.
Indication	Assessment of electrolyte and fluid balance.
Additional Info	Serum sodium concentration is closely linked to water balance. Regulation is primarily by renal reabsorption of sodium and water via aldosterone and ADH respectively. Alterations in serum sodium concentration may be due to a disturbance in sodium and/or water balance.
Concurrent Tests	Part of U&E profile. Serum osmolality, urine sodium and osmolality.
Dietary Requirements	N/A
Interpretation	<p>Critical sodium concentrations are <120 mmol/L and >160 mmol/L. Interpretation of the serum sodium concentration should be made in combination with a clinical evaluation of the patient's hydration status. A random urine sodium and osmolality sample is also required to aid interpretation.</p> <p>See Trust Guidelines for the investigation of hyponatraemia and intravenous fluid therapy</p> <p><u>Hypernatraemia</u> Always associated with high serum osmolality. Usually due to overall water deficit e.g. inadequate water intake or excess water loss (diabetes insipidus). Inadequate intake typically presents with hypovolaemia and oliguria with concentrated urine, whereas with diabetes insipidus (cranial or nephrogenic) there is polyuria and the urine is not concentrated. Hypernatraemia with hypervolaemia indicates sodium and water excess e.g. mineralocorticoid excess or hypertonic IV therapy.</p> <p><u>Hyponatraemia</u> Iso-osmotic or hyperosmotic hyponatraemia indicates pseudohyponatraemia or the presence of osmotically active substances (e.g. glucose), respectively. True hyponatraemia is associated with hypoosmolality and is caused by either excess loss of sodium or excess water in comparison to sodium (dilutional hyponatraemia). Hyponatraemia in the presence of hypovolaemia indicates sodium and water loss i.e. renal loss (mineralocorticoid deficiency) or extra renal loss (gastrointestinal, skin).</p>

	Hyponatraemia in the presence of hypervolaemia indicates water +/- sodium excess e.g. CCF, renal failure or cirrhosis. Euvolaemic hyponatraemia may be due to acute water excess (e.g. psychogenic polydipsia, inappropriate IV fluid replacement) or chronic water excess, usually due to a failure of water excretion (e.g. SIADH).
Collection Conditions	N/A
Frequency of testing	As required