Hypernatraemia in Primary Care

The most common cause of hypernatraemia is dehydration. Fluid intake and losses should be established prior to further investigation. This is of particular importance in elderly and Care Home patients. Other causes include excess sodium intake, renal failure, primary and secondary mineralocorticoid excess, Cushing's syndrome, cardiac failure, nephrotic syndrome, hepatic cirrhosis with ascites and renal artery stenosis.

Polyuria may be due to primary polydipsia, osmotic diuresis (e.g. due to undiagnosed/ poorly controlled diabetes) or diabetes insipidus.

Urgent Action Required:

Hospital admission should be considered if:

- **Serum Na is ≥155mmol/L or rising rapidly**
- **Oral rehydration is not practical**
- **In a child with serum Na > 145 mmol/L**
- **If the patient is on lithium therapy, a lithium concentration should be measured. Lithium therapy can induce nephrogenic Diabetes Insipidus (DI)**

Further Investigation:

- U&E should be repeated to exclude sampling/ laboratory errors and to establish trend (contamination from ESR/ coagulation tubes can cause a falsely elevated sodium concentration – chloride will be comparatively low)
- Calcium and glucose should be measured to exclude hypercalcaemia and diabetes
- Some antibiotics contain high amounts of sodium

Interpretation and Further Action:

- Stable sodium concentrations in the range 146-148 mmol/L in well patients with a normal hydration status may be an incidental finding of no clinical significance
- Changes of up to 5 mmol/L may be insignificant changes due to normal variation
- **Urine and serum osmolalities** should be requested if diabetes insipidus is a possibility. Urine will be inappropriately dilute in a dehydrated patient. DI is excluded by a urine osmolality of greater than 650mOsm/kg. Patients with suspected DI will require referral to endocrinology for a formal water deprivation test
- Mineralocorticoid or glucocorticoid excess should be considered – contact duty biochemist for further advice