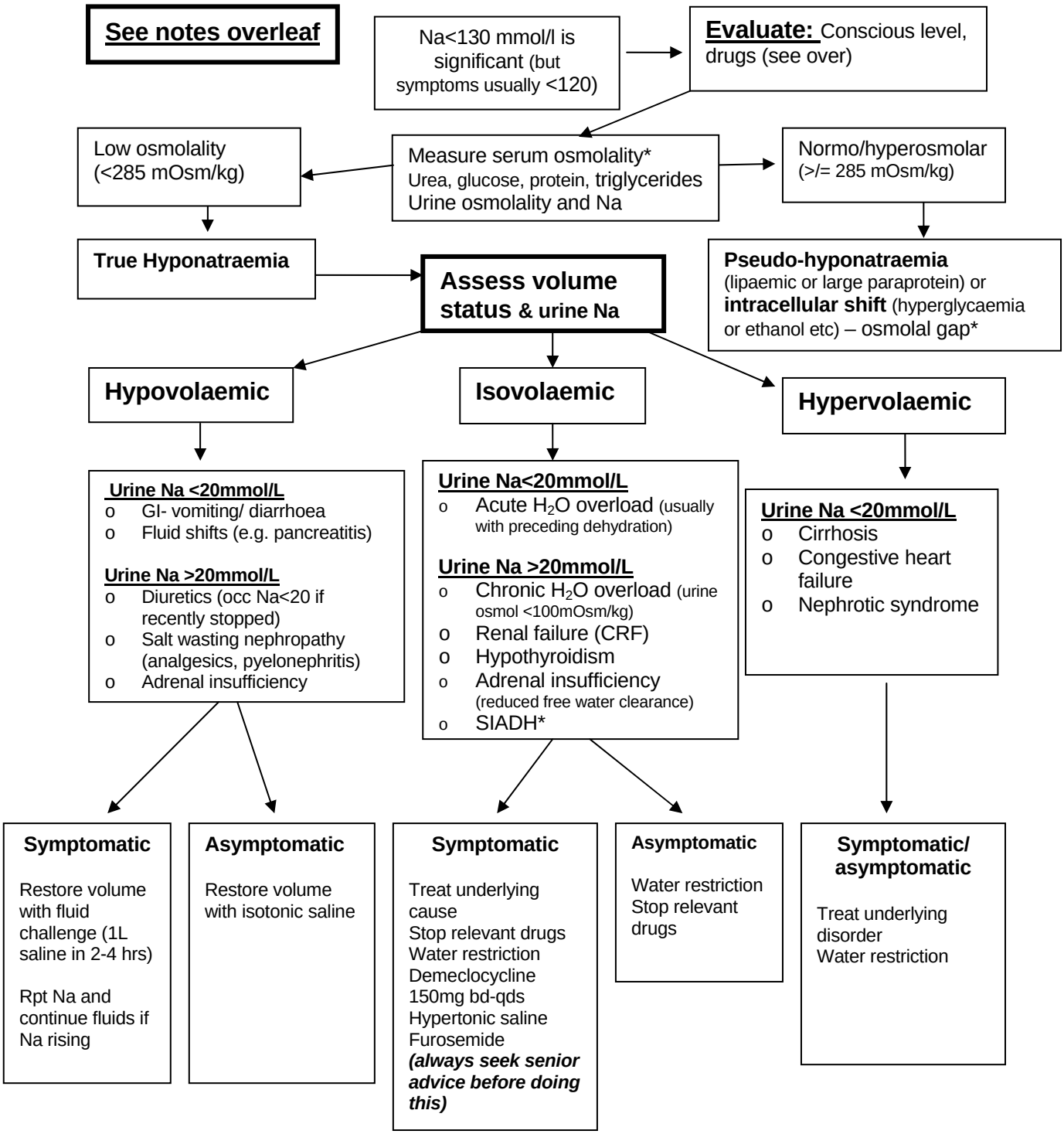
ALGORITHM FOR HYPONATRAEMIA ASSESSMENT & TREATMENT



MONITOR: Fluid balance regularly. **Na should not increase by >12mmol in 24 hours**
During active treatment serum Na should be reassessed every 2-4 hours
***See over for details on osmolality/ osmolal gap and SIADH**

NOTES ON HYPONATRAEMIA

Water balance is regulated by antidiuretic hormone, renal medullary concentrating ability and thirst. Hyponatraemia usually results from retention of water secondary to impairment of free water excretion.
Drugs such as diuretics (thiazides, amiloride/ Frumil, spironolactone), carbamazepine, ACE inhibitors and antidepressant SSRIs are notable causes.

Signs and symptoms

These primarily relate to the central nervous system.
Cerebral oedema can occur.
Early signs are anorexia, lethargy, apathy, nausea.
More advance signs and symptoms include: agitation, seizures, depressed reflexes, focal neurological deficits, coma.
Symptoms depend critically on rapidity of onset and severity of hyponatraemia

- **Acute hyponatraemia** can cause cerebral oedema and requires urgent treatment.
- **Chronic hyponatraemia** if corrected **too rapidly** can cause osmotic demyelination!

Diagnosis

- Careful history and assessment of **volume status** is critical
  - look for JVP, lying and standing BP, oedema, 3rd heart sound.
- Check blood pressure, pulse, weigh patient, and commence CNS observations in more severe cases.
- Obtain laboratory values of: serum osmolality, urine osmolality and most importantly **urinary sodium.**
- Also check urea, glucose, total protein, and triglycerides to exclude pseudohyponatraemia – if alcohol/ methanol/ glycol/ mannitol suspected can measure osmolal gap (measured osmolality – calculated osmolality):
  calculated osmolality = [2xNa+2xK+urea+glc]
- Commence strict fluid balance chart

Syndrome of Inappropriate ADH (SIADH):

- Urine Na>20
- Urine Osm >200
- No hypovolaemia
- Exclude thyroid, renal, adrenal, pituitary (cortisol), cardiac cause
- Exclude diuretics and other drugs as causes
- Response to fluid restriction

Treatment

- Depends on whether patient is symptomatic or not, and particularly on their volume status.
- **NB. When actively treating a patient always seek senior advice as patients can be made worse by active treatment.**

Dr Christopher Dyer/ Dr Andrew Taylor/ Dr Mark Mallet January 2004