

Intravenous Fluid Guidelines for Adults

Based on NICE Clinical Guideline 174: Intravenous fluid therapy in adults in hospital (July 2017)
and on a flowchart created by University Hospitals Sussex NHS Foundation Trust

BEFORE PRESCRIBING

Is my patient **Euvolaemic? Hypovolaemic? Hypervolaemic?**

Can my patient have fluid enterally?

Why does my patient need IV fluid?

How much fluid does my patient need?

What type of fluid does my patient need?

FLUID STATUS ASSESSMENT

History: Limited oral intake, abnormal losses, co-morbidities.

Clinical Examination: Heart rate, BP, capillary refill, SpO₂, RR, JVP, oedema, postural hypotension, lung fields.

Clinical Monitoring: NEWS2, fluid balance, weight, CXR.

Laboratory investigations: FBC, U&E.

SPECIAL CONSIDERATIONS

Obesity: Use ideal body weight. Seek senior advice if BMI>40.

Frail, elderly, CCF: consider smaller volumes of maintenance fluid (20-25 mL/kg/day).

Bleeding: Replace with blood products if required.

Diabetes or patient on VRII: See VRII Protocol.

FLUID RESUSCITATION

Patients with fluid deficits, ongoing losses or abnormal distribution e.g. D&V, high output stoma, sepsis, who are shocked.

Give Hartmann's or sodium chloride 0.9%

ABCDE approach, early senior input.

Start with 500mL over 15mins, aiming for 30ml/kg over 3 hours (around 2 litres in average adult)

Halve volume of infusion if frail/elderly/CCF.

Seek advice from Critical Care if the patient has not responded to 2 litres of fluid on the ward.

FLUID REPLACEMENT

Patients with fluid deficits, ongoing losses or abnormal distribution e.g. D&V, high output stoma, sepsis, but **not** shocked.

Give Hartmann's or sodium chloride 0.9% (±KCl) in addition to routine maintenance fluids

Rate of replacement is often no more than an intelligent guess.

If dry with significant AKI, consider 30mL/kg over 6-8 hours then review.

Remember that 125mL/hr is unlikely to rehydrate anyone if dry.

Seek senior advice for complex patients.

MAINTENANCE FLUID

The fluid of choice for patients unable to take enteral fluids but with no abnormal losses is:

Sodium chloride 0.18% + Dextrose 4% 20-40mmol/Litre of Potassium Chloride

Omit the potassium if the patient is hyperkalaemic.

Sodium chloride 0.18% + Dextrose 4% is not suitable for hyponatraemic patients, neurosurgical patients or patients with high GI losses. Use sodium chloride 0.9% or Hartmann's for these patients.

Fluid (1 litre)	Na	K	Cl	Ca	Glucose
NaCl 0.18% + Dextrose 4% + KCl 40mmol	31	40	71	0	40g
NaCl 0.18% + Dextrose 4%	31	0	31	0	40g
Hartmann's	131	5	111	2	0
NaCl 0.9%	154	0	154	0	0
Dextrose 5%	0	0	0	0	50g

MAINTENANCE REQUIREMENTS

Component	Requirement
Water	30mL/kg/day 20-25 mL/kg/day in the elderly, frail, or those with CCF or renal impairment Round the daily requirement to the nearest 500mL bag.
Na ⁺ , K ⁺ and Cl ⁻	1 mmol/kg/day of each
Glucose	50-100g/day

Avoid more than 2500mL of Sodium Chloride 0.18% + Dextrose 4% per day as this may cause hyponatraemia.

If the patient requires a larger volume than this, refer to Fluid Resuscitation or Replacement.

Plan to deliver the daily routine maintenance volume over 12 to 16 hours.

REASSESSMENT

Reassess patients regularly and adjust the fluid prescription as required.

Seek senior advice if a patient is not responding to IV fluids as expected

Stop routine maintenance fluids when the enteral route is available