

The Right Amount of Fluid at the Right Time

Table 1

Daily Requirements	Amount
Water	25-30 ml/kg
Sodium	1 mmol/kg
Potassium	1 mmol/kg
Glucose	50-100g (approx 100-200 calories)

Calories limit starvation ketosis & help prevent electrolyte abnormalities
 British Consensus Guidelines on Intravenous Fluid Therapy for Adult Surgical Patients (GIFTASUP). 2011.
 NICE clinical guideline 174: Intravenous fluid therapy in adults in hospital. December 2013.

Questions to ask before prescribing fluid

1. Is my patient euvoalaemic, hypovolaemic or hypervolaemic?
2. Does my patient need IVF?
Allow patients to eat and drink if possible
3. How much IVF does the patient need?
 (consider weight, daily maintenance, losses etc)
4. Have the U&E's been checked?
 (see daily electrolyte requirement) (See table 1)
5. What type of fluids does the patient need?
(Maintenance, replacement, resuscitation)

Maintenance

For patients without excess losses, they may require only part of their daily maintenance goal if receiving other fluids. Those fasting over 8 hours should start IV maintenance fluids


0.18% NaCl/ 4% Glucose+Potassium
IF SERUM SODIUM IS < 132mmol/l
USE PLASMA-LYTE 148 FOR MAINTENANCE


Maintenance requirement:
30ml/kg/24hours (see table 2)

Never give maintenance fluids at more than 100ml/hour

For the frail/elderly, patients with renal impairment or cardiac failure and patients who are malnourished or at risk of refeeding syndrome consider giving less fluid: 20-25ml/kg/day [NICE guidelines].

Replacement

Replacement of losses should occur only when necessary. It's better to wait for predicted losses rather than administer extra fluid in anticipation of losses that may not happen. This fluid is in addition to maintenance.


Plasma-Lyte 148
or 0.9% Sodium Chloride with Potassium
(for upper GI or bile loss)


Estimate Losses in the Past 24 Hours and Replace

Losses Include:

- ◆ Vomiting
- ◆ Diarrhoea
- ◆ NG suction
- ◆ GI drains
- ◆ Bile leaks
- ◆ High output stoma
- ◆ Fistulae
- ◆ Blood loss

(It's crucial to avoid Sodium Chloride in other situations, as its high chloride concentration may lead to fluid retention due to the body's natural response.)

Table 2

Never give 0.18% NaCl 4% Glucose (+/-) KCL at over 100mls/hr:

Risk of Hyponatraemia

Weight (kg)	Maintenance Requirement/24hr (30ml/kg/24hrs)	Rate (ml/hr)	Approximate Equivalence to over x hours
35-44	1200ml	50	500ml 10 hrly
45-54	1500ml	65	8 hrly
55-64	1800ml	75	7 hrly
65-74	2100ml	85	6 hrly
≥75	2400ml	100 (max)	5 hrly

Resuscitation

The patient is hypovolaemic as a result of dehydration, blood loss or sepsis and requires urgent correction of intravascular depletion to correct their hypovolaemia/hypotension



Plasma-lyte 148
(or a colloid until blood products arrive)

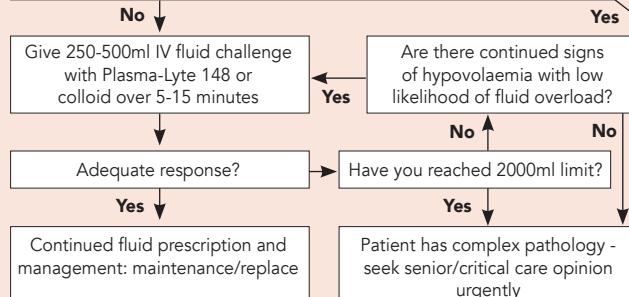


Fluid Challenge Algorithm

Hypovolaemia: low BP, tachycardia, low CVP/JVP, oliguria, reduced skin turgor, poor tissue perfusion, capillary refill time >4sec

Note patients with epidurals may need vasoconstriction rather than fluid but must be assessed for other causes of hypotension

Is there a concern regarding fluid challenge e.g. severe LV dysfunction/ cardiogenic shock? Fluid must be assessed for other causes of hypotension



References: Southampton Fluid Guidance 2009
 NICE Intravenous Therapy in Adults in Hospital, Guideline 174 Dec 2013
 GIFTASUP Guidelines 2009: www.bapen.org.uk/pdfs/bapen_pubs/giftasup.pdf