

Fluid Therapy in surgical children and babies

(Adapted from The Paediatric Handbook Chapter 23, Prof MD Bowie)

Fluid and electrolyte requirements can be divided into:

- Maintenance: to maintain hydration and replace normal ongoing losses.
- Replacement: To maintain hydration by replacing ongoing losses eg ng-tube on free drainage or abdominal wall defects with bowel exposed (gastroschisis)
- Resuscitation: To restore effective circulating blood volume following abnormal losses

MAINTENANCE REQUIREMENTS

Maintenance requirements ml/kg/day related to age or weight (Intravenous administration)

	AGE	VOLUME	WEIGHT	VOLUME
NEONATE	1 day	60ml		
	2 days	90ml		
	3 days	120ml		
	4 days and older	150-180ml		
Preterm babies	5 days	150-180ml		
	6 days and older	150-200ml		
INFANTS	<1 year	120ml	<10kg	100-120ml
	1-2 years	100ml	10-20kg	1 000ml
				+50ml/kg>10kg
	2-4 years	85ml		
	4-10 years	70ml	>20kg	1 500ml
				+20ml/kg>20kg
	10 years and older	2-3liter/d		

For infants under 1year of age, 150ml/kg is advised for oral feeds

REPLACEMENT REQUIREMENTS

In the surgical patient, important fluid losses occur through the inserted nasogastric tube. These losses should be measured 4 hourly and are then replaced over the next 4 hours with the same amount of normal saline (0.9% NaCl).

FLUID RESUSCITATION

A child who is dehydrated or in shock needs to be resuscitated. The universal resuscitation fluid is Ringerslactate. A Ringerslactate bolus of 10 – 20 mls/kg should be given and can be repeated once to twice.

Constant reassessment is necessary to keep ahead of continuing losses. The child's vitals should be monitored and a urinary catheter inserted.