

# DKA Intravenous Fluids Calculations

• Must discuss admission & ongoing care with senior on-call medical staff.

Surname: \_\_\_\_\_  
 Forename: \_\_\_\_\_  
 DOB: \_\_\_\_\_  
 HN: \_\_\_\_\_  
 CHI: \_\_\_\_\_

**Start** ← Click Start before data entry or re-entry.

Date:  **Date** • If needed, use 10 ml/kg resuscitation bolus.  
• Repeat once, if needed, over 1-2 hrs.

Time:  **Time** Resusc. Fluid Volume:  **Resusc Vol** (ml/kg)

Age:  **Age** (years) Bicarbonate:  **Bicarb** (mmol/l)

A. Current Weight: On arrival in Emergency Department (in kg) →  **A** (kg)

B. % Dehydration: DKA Severity Bicarb (mmol/l) % Dehydration

|          |        |   |
|----------|--------|---|
| Mild     | > 10   | 3 |
| Moderate | 5 - 10 | 5 |
| Severe   | < 5    | 8 |

C. Estimated True Weight: Pre-dehydration weight

$$100 \times \frac{A}{100 - B} = \frac{100 \times A}{100 - B}$$

D. Weight Lost: Estimated True Weight *minus* Current Weight →  **D** (kg)

E. Maint. Fluid Volume: Age (yrs) ml/kg over 48hrs

|                |         |   |     |
|----------------|---------|---|-----|
| Over 48 hours: | 0 - 2   | → | 160 |
|                | 3 - 5   | → | 140 |
|                | 6 - 9   | → | 120 |
|                | 10 - 14 | → | 100 |
|                | > 14.9  | → | 60  |

Select ml/kg per 48 hrs according to age (e.g. 160, 140, 120, 100, or 60)

## Initial IV Fluid Rate Calculation

MAINTENANCE FLUID

**C** Est. True Weight (kg) (Pre-dehydration) ×  **E** Maint. Vol over 48 hrs (ml/kg/48 hrs)

FLUID DEFICIT

**D** Weight Lost (kg) × 1000 (ml/kg)

**C x E** Maintenance (ml/48 hrs)  
 PLUS  
 **D x 1000** Fluid Deficit (ml)  
 =

Initial IV Fluids to use:  $[Na]^+$  corrected for Glucose = Plasma  $[Na]^+$  +  $(([Gluc] - 5.5) \times 0.3)$

- If Glucose  $\geq 14$  mmol/l → NaCl 0.9%
- If Glucose  $< 14$  & Corrected  $[Na]^+ < 150$  mmol/l → NaCl 0.9% + Dext 5%
- If Glucose  $< 14$  & Corrected  $[Na]^+ > 150$  mmol/l → NaCl 0.45% + Dext 5%

RESUSCITATION FLUID

Total Resusc. Fluid Volume (ml)

Subtotal 1 (ml/48 hrs)  
 MINUS  
 **Resusc.** Resuscitation (ml)  
 =

IV Fluids Start Time: \_\_\_\_\_

IV Insulin Start Time: \_\_\_\_\_

◀ Delay IV insulin start 60-90 minutes after IV fluids start. Earlier start increases cerebral oedema risk x 12

Calculated by: \_\_\_\_\_

Checked by: \_\_\_\_\_

(Sign) \_\_\_\_\_

(Sign) \_\_\_\_\_

(Print) \_\_\_\_\_

(Print) \_\_\_\_\_

Subtotal 2 (ml/48 hrs)  
 ÷ 48 (hrs)  
 **IV Fluid** IV FLUID INFUSION RATE (ml/hr)

## Initial IV Insulin Rate Calculation

of 1 unit insulin per ml solution using soluble insulin (e.g. Actrapid)

0.1 units per kg per hour ×  **C** Est. True Weight (kg)

**IV Insulin** IV INSULIN INFUSION RATE (ml/hr)