

Use this protocol for adolescent patients if age <15 or weight < 50 kg (cases can be discussed with paediatric team)

Age 1

- New presentation DKA
- has received 20mls/kg fluid bolus
- Bicarb- 5

DKA Intravenous Fluids Calculations

Date: 21/01/10 Time: 0900 Age: 1

- Must discuss admission & ongoing care with senior on-call medical staff.
- Use Current Measured Weight & Clinic Weight whenever possible.
- Use 10 ml/kg resuscitation bolus. Repeat once if necessary, over 1-2 hrs.
- If further resusc. volume thought necessary (to max. total 30 ml/kg) this must be discussed with on-call ED/Paediatric consultant (DKA signs mimic fluid loss).

A. Current Weight: Measured on Emergency Department arrival (kg):

11 A

Current Weight (kg)

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

Acidosis a better measure of dehydration severity than clinical assessment

Mild	> 10	3
Moderate	5 - 10	6
Severe	< 5	10

6 B

Dehydration (%)

C. True Weight: Pre-dehydration weight (if available from recent clinic Documented in Magistral* or casenotes)

OR

Est. True Weight: (use only if no recent clinic weight available)
 $(100 \times A) \div (100 - B)$

$$100 \times \frac{11}{100 - 6} = \frac{1100}{94} = 11.7$$

11.7 C

True Weight (kg)

D. Weight Lost:

$$11.7 - 11 = 0.7$$

1.17

x 0.1

0.7

Pick smaller value

Using smaller value ensures 10% maximum weight loss used to work out deficit volume

Weight Lost (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	→	60

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

160 E

Maint. Fluid Vol. (ml/kg per 48hr)

IV Fluid Rate Calculation

MAINTENANCE

$$11.7 \times 160 = 1872$$

1872

Maintenance (ml/48 hrs)

DEFICIT

$$0.7 \times 1000 = 700$$

700

Deficit (ml)

IV Fluids Start Time: _____

IV Insulin Start Time: _____

Delay start of IV insulin till 60-90 minutes after IV fluids start. Earlier start associated with 12 x increased risk of cerebral oedema

2572

Subtotal 1 (ml/48 hrs)

Calculated by: (Sign) _____

(Print) _____

RESUSCITATION Total Resusc. Fluid Volume (ml)

Example-10-20 mls/kg

220

Resuscitation (ml)

Checked by: (Sign) _____

(Print) _____

2352

Subtotal 2 (ml/48 hrs)

÷ 48

(hrs)

49

INFUSION RATE

Use this protocol for adolescent patients if age <15 or weight < 50 kg (cases can be discussed with paediatric team)

Age 3

New presentation DKA has received 10 mls/kg fluid bolus bicarb- 7

DKA Intravenous Fluids Calculations

Date: 21/01/10 Time: 0900 Age: 3

- Must discuss admission & ongoing care with senior on-call medical staff.
- Use Current Measured Weight & Clinic Weight whenever possible.
- Use 10 ml/kg resuscitation bolus. Repeat once if necessary, over 1-2 hrs.
- If further resusc. volume thought necessary (to max. total 30 ml/kg) this must be discussed with on-call ED/Paediatric consultant (DKA signs mimic fluid loss).

A. Current Weight: Measured on Emergency Department arrival (kg):

15

Current Weight (kg)

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

Acidosis a better measure of dehydration severity than clinical assessment

Mild	> 10	3
Moderate	5 - 10	6
Severe	< 5	10

6

Dehydration (%)

C. True Weight: Pre-dehydration weight (if available from recent clinic Documented in Magistral* or casenotes)

OR

Est. True Weight: (use only if no recent clinic weight available)
 $(100 \times A) \div (100 - B)$

$$100 \times \frac{15}{100 - 6} = \frac{1500}{94} = 16$$

16

True Weight (kg)

D. Weight Lost:

$$16 - 15 = 1$$

1.6

Using smaller value ensures 10% maximum weight loss used to work out deficit volume

Pick smaller value

1

Weight Lost (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	→	60

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

140

Maint. Fluid Vol. (ml/kg per 48hr)

IV Fluid Rate Calculation

MAINTENANCE

$$16 \times 140$$

2240

Maintenance (ml/48 hrs)

DEFICIT

$$1 \times 1000$$

1000

Deficit (ml)

IV Fluids Start Time: _____

IV Insulin Start Time: _____

Delay start of IV insulin till 60-90 minutes after IV fluids start. Earlier start associated with 12 x increased risk of cerebral oedema

3240

Subtotal 1 (ml/48 hrs)

Calculated by: (Sign) _____

(Print) _____

RESUSCITATION Total Resusc. Fluid Volume (ml)

Example-10-20 mls/kg

150

Resuscitation (ml)

Checked by: (Sign) _____

(Print) _____

3090

Subtotal 2 (ml/48 hrs)

÷ 48

(hrs)

64

INFUSION RATE

Use this protocol for adolescent patients if age <15 or weight < 50 kg (cases can be discussed with paediatric team)

Age 8
 - Known IDDM
 - has received no fluid bolus
 - bicarb- 11
 - Recent OPD weight- 28 kg

DKA Intravenous Fluids Calculations

Date: 21/01/10 Time: 0900 Age: 8

- Must discuss admission & ongoing care with senior on-call medical staff.
- Use Current Measured Weight & Clinic Weight whenever possible.
- Use 10 ml/kg resuscitation bolus. Repeat once if necessary, over 1-2 hrs.
- If further resusc. volume thought necessary (to max. total 30 ml/kg) this must be discussed with on-call ED/Paediatric consultant (DKA signs mimic fluid loss).

A. Current Weight: Measured on Emergency Department arrival (kg):

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

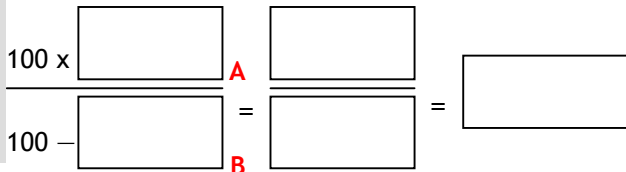
Acidosis a better measure of dehydration severity than clinical assessment

Mild	> 10	3
Moderate	5 - 10	6
Severe	< 5	10

C. True Weight: Pre-dehydration weight (if available from recent clinic Documented in Magistral* or casenotes)

Est. True Weight:
 (use only if no recent clinic weight available)

$$\frac{100 \times A}{100 - B} = \text{Est. True Weight}$$



D. Weight Lost:



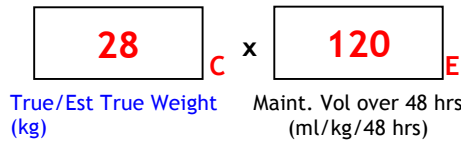
E. Maint. Fluid Volume: Age (yrs) ml/kg over 48hrs

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

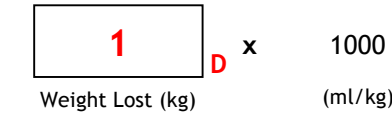
Select ml/kg per 48 hrs according to age (e.g. 160, 140, 120, 100, or 60)

IV Fluid Rate Calculation

MAINTENANCE



DEFICIT



IV Fluids Start Time: _____

IV Insulin Start Time: _____

Calculated by: (Sign) _____

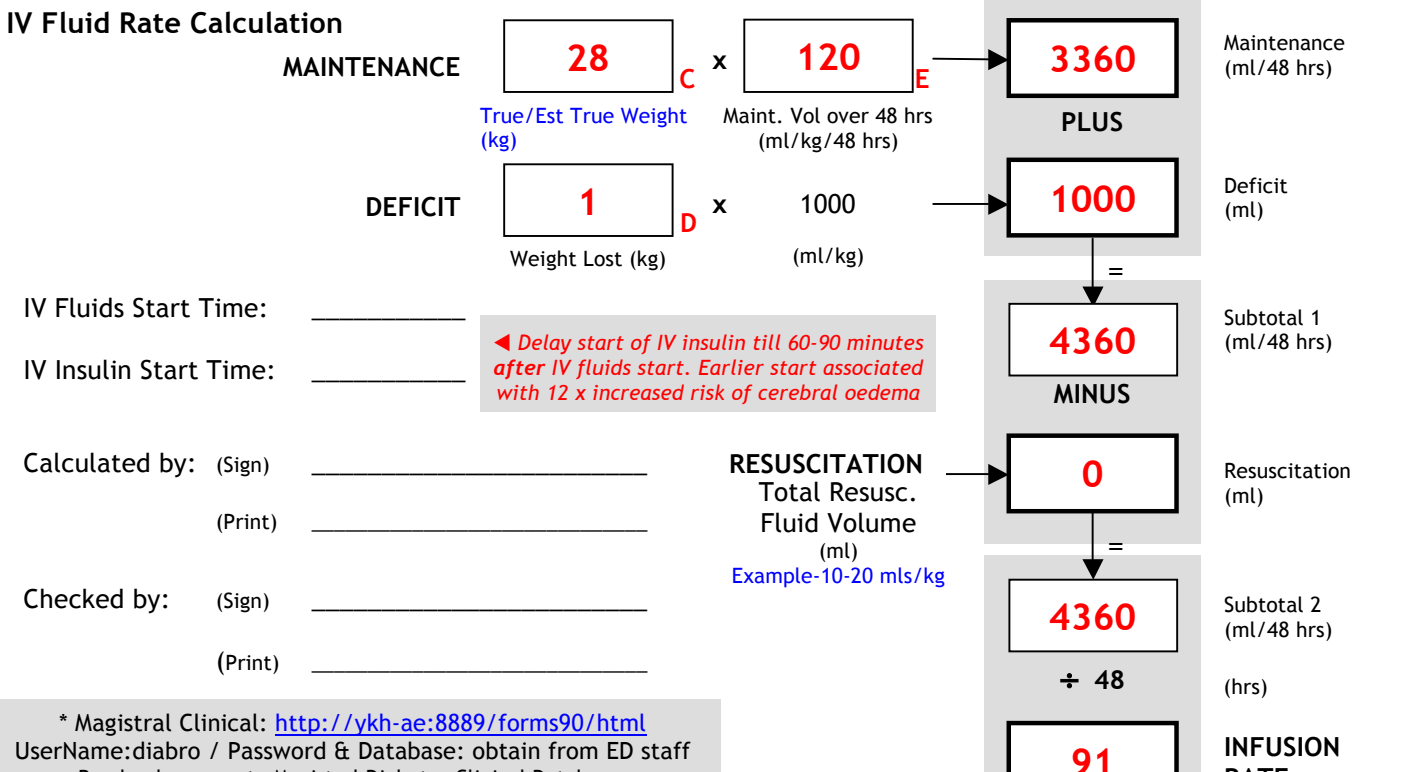
(Print) _____

Checked by: (Sign) _____

(Print) _____

◀ Delay start of IV insulin till 60-90 minutes after IV fluids start. Earlier start associated with 12 x increased risk of cerebral oedema

RESUSCITATION
 Total Resusc. Fluid Volume (ml)
 Example-10-20 mls/kg



Use this protocol for adolescent patients if age <15 or weight < 50 kg (cases can be discussed with paediatric team)

Age 14
 - Known IDDM
 - has received 20 mls/kg fluid bolus
 - bicarb- 2
 - recent OPD weight - 48 kg

DKA Intravenous Fluids Calculations

Date: 21/01/10 Time: 0900 Age: 14

- Must discuss admission & ongoing care with senior on-call medical staff.
- Use Current Measured Weight & Clinic Weight whenever possible.
- Use 10 ml/kg resuscitation bolus. Repeat once if necessary, over 1-2 hrs.
- If further resusc. volume thought necessary (to max. total 30 ml/kg) this must be discussed with on-call ED/Paediatric consultant (DKA signs mimic fluid loss).

A. Current Weight: Measured on Emergency Department arrival (kg):

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

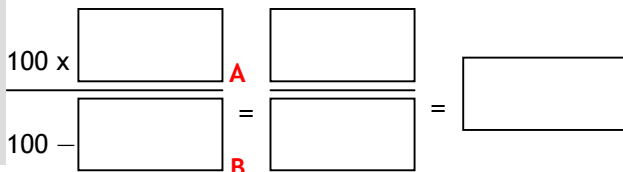
Acidosis a better measure of dehydration severity than clinical assessment

Mild	> 10	3
Moderate	5 - 10	6
Severe	< 5	10

C. True Weight: Pre-dehydration weight (if available from recent clinic Documented in Magistral* or casenotes)

Est. True Weight:
 (use only if no recent clinic weight available)

$$\frac{100 \times A}{100 - B} = \text{Est. True Weight}$$



D. Weight Lost:



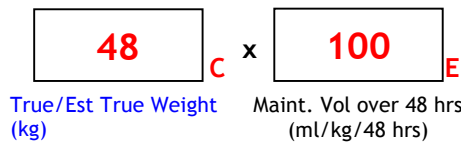
E. Maint. Fluid Volume: Age (yrs) ml/kg over 48hrs

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

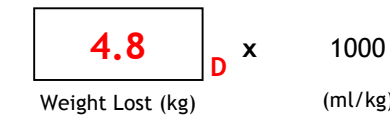
Select ml/kg per 48 hrs according to age (e.g. 160, 140, 120, 100, or 60)

IV Fluid Rate Calculation

MAINTENANCE



DEFICIT



IV Fluids Start Time: _____

IV Insulin Start Time: _____

Calculated by: (Sign) _____

(Print) _____

Checked by: (Sign) _____

(Print) _____

◀ Delay start of IV insulin till 60-90 minutes after IV fluids start. Earlier start associated with 12 x increased risk of cerebral oedema

RESUSCITATION
 Total Resusc. Fluid Volume (ml)
 Example-10-20 mls/kg

