

# SaTH DKA Management Chart

Results should be entered in the unshaded boxes.

Hours from start:	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38		
Clock time:																																									
<b>BLOOD GLUCOSE (mmol/l)</b>	[Monitoring chart with shaded 'Baseline observations' area and 'Target zone' indicated]																																								
Insulin units/hr																																									
Blood ketones																																									
Venous bicarbonate																																									
Potassium																																									
Venous pH																																									
Urine output (min 0.5ml/kg/min)																																									
Pulse/Temp																																									
Blood pressure																																									

PAS sticker/patient details

Date/time DKA treatment initiated:

Diabetes team contacted at:

Aim for resolution of ketoacidosis by 12 hrs. If persists, see box below.

### Intravenous fluid prescription chart

Date	IV fluid	Volume	Rate	Potassium supplement: complete as appropriate	Prescriber's signature	Set up/checked	Time started	Batch no
	0.9% saline	1000ml		Usually no potassium in 1 <sup>st</sup> litre				

### Fixed rate intravenous insulin infusion (IVII)

Add 50 units Actrapid to 50 ml 0.9% saline in 50ml syringe

Start insulin infusion at 0.1 units/kg/hr (eg 7ml/hr if 70kg)

Continue Lantus (glargine) or Levemir (detemir) insulin at usual time

Calculate rate of fall of ketones hourly – if not falling by at least 0.5 mmol/l/hr increase IVII rate by 1 unit/hr until rate achieved.

Continue fixed rate IVII until ketoacidosis resolved. Resolution defined as ketones <0.3 mmol/l with venous pH >7.3 (or venous bicarbonate >18 mmol/l).

Date	Time	Initials

Fluid type	Typical IVI rates (for 70kg adult)	Supplemental IV potassium								
<p>Start with 0.9% saline</p> <ul style="list-style-type: none"> <li>Establish IV access with large bore cannula</li> <li>IV bicarbonate should not be used routinely</li> <li>When blood glucose &lt;14 mmol/l add 10% glucose at 125 ml/hr. 0.9% saline infusion rate may be slowed if needed to prevent overload</li> <li>Add supplemental potassium to saline as needed</li> </ul> <p>Add 10% glucose solution when blood glucose &lt;14 mmol/l</p>	<p>1 L over 1 hr</p> <p>1 L over 2 hrs x2</p> <p>1 L over 4 hrs x2</p> <p>Reassess need</p> <ul style="list-style-type: none"> <li>Start infusion as chart as a guide only</li> <li>If initial SBP &lt;90mmHg give initial 500ml 0.9% saline over 10-15 mins – can repeat if no improvement</li> <li>Subsequent fluid replacement should be influenced by hydration status and electrolyte results</li> <li>Avoid replacing fluid too quickly as cerebral oedema may result</li> <li>CVP monitoring may be required</li> </ul>	<p>No potassium in first litre</p> <p>Prescribe further K<sup>+</sup> according to serum levels (checked as protocol)</p> <table border="1"> <thead> <tr> <th>Serum K<sup>+</sup> (mmol/l)</th> <th>Added KCl</th> </tr> </thead> <tbody> <tr><td>&gt; 5.5</td><td>None</td></tr> <tr><td>3.5 – 5.5</td><td>40 mmol/l</td></tr> <tr><td>&lt; 3.5</td><td>Seek advice</td></tr> </tbody> </table> <ul style="list-style-type: none"> <li>Always use prepared fluid bags when KCl required - never add KCl to infusion bags</li> <li>Use cardiac monitor if large amounts KCl required</li> <li>Seek advice if serum potassium remains below 3.5 as higher infusion rates will be required.</li> </ul>	Serum K <sup>+</sup> (mmol/l)	Added KCl	> 5.5	None	3.5 – 5.5	40 mmol/l	< 3.5	Seek advice
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> 5.5	None									
3.5 – 5.5	40 mmol/l									
< 3.5	Seek advice									

### Resolution of ketosis

- Check venous pH, bicarbonate, potassium, blood ketones and glucose at 6 hours
- Assess for resolution of ketoacidosis

Resolution of ketoacidosis defined as:

Blood ketones <0.3 mmol/l with venous pH >7.3  
or  
Blood ketones <0.3 mmol/l with venous bicarbonate >18 mmol/l

### Restarting usual insulin

- Conversion to subcutaneous insulin is ideally managed by the specialist diabetes team
- If not already involved, the diabetes team should be informed and the patient reviewed within 24 hrs of admission
- If patient newly diagnosed, it is essential they are seen by a member of the specialist diabetes team prior to discharge

If diabetes team not available:

- Preferably start previous regime
- Basal-bolus: Long-acting insulin should have been continued, so provide rapid-acting insulin before next meal – take IVII and fluids down 30 mins later.
- Twice daily premix: Provide usual insulin with breakfast or evening meal. Take IVII and fluids down 30 mins later.
- CSII: Recommence at usual basal rate; continue IVII until next mealtime bolus given.

