

## This leaflet provides emergency information for Insulin pump users

In the event of insulin pump technical problems contact:

Medtronic 01923 205 167  
Ypsomed 03448567820

Tandem 0800 012 1560  
Omnipod 0800 011 6132

Diabetes Educators University Hospital Hairmyres: 01355 585230

University Hospital Monklands: 01236 712430

University Hospital Wishaw: 01698 366361

## If in any doubt relating to the pumps ability to maintain insulin delivery:

- change to insulin pen devices and
- remove insulin pump until replacement is sent from the company

It is **essential** you have a stock of

1. quick acting /bolus insulin
2. background /basal insulin
3. blood ketone testing equipment
4. a record of pump settings

Please check these items are always on repeat prescription

## Conversion Back to Insulin Pen Injections:

- In the event of an emergency situation, it may be necessary for you to convert back to your insulin pen injections.
- During pump technical problems, you may be unable to recall the information from your pump that you require to calculate doses of Background / Basal Insulin.
- It is **essential** to always keep an accurate written record of your Basal Rates, as these will be used to calculate starting doses of Background / Basal Insulin.
- Record Basal rates in your diary monthly or take a screenshot on your phone. Discuss your Emergency plan with your healthcare professional in order that you are prepared if required.

## How to Calculate Your Pen insulin doses of Background / Basal Insulin:

Converting back from pump Basal Insulin Rates to Background / Basal pen Insulin doses.

- Background / Basal Insulin will then be taken twice daily morning and evening.
- If possible, access active basal insulin pattern for the total basal dose for 24 hours.

*This information can also be accessed from your Carelink personal account if you have one.*

- Add 20% to your total daily **basal** dose then divide by two. This would be your dose for morning and evening Background / Basal Insulin.

For example, total basal rate is 20 units for 24 hours

- 20% of 20 units = 4
- Basal total 20 + 4 = 24 units of insulin
- divided by 2 = 12 units am + 12 units pm

- If planned removal of Insulin Pump, take Background / Basal Insulin one hour before you remove the pump.
- If the Insulin Pump stops working, take Background / Basal Insulin immediately.

## Meal Bolus Ratios:

Bolus insulin will remain as usual ratios for each meal or snack.

## Reconnecting to Insulin Pump:

- Time this to around one hour before the injected Background / Basal Insulin is due to run out (remember) this has a duration of approximately 12 hours.

## High Blood Glucose and Illness:

Illness and infection can both cause insulin resistance, which may need additional insulin to manage and prevent the development of ketones. When there is a pattern of unexplained elevated blood glucose or you are feeling unwell, it is important to implement the guidance given in the flow chart.

## High Blood Glucose and Illness:

If blood glucose (BG) level is above 13.0 mmol/l = check for ketones

### NEGATIVE

Urine ketones NEG – TRACE or  
Blood ketones 0 - 1.5 mmol/l

1. Take usual ratio for food if eating & correction via insulin pump as per sensitivity ratio on Bolus Calculator

2. Monitor BG and ketones 1 hour later to ensure BG has come down

3. If BG remains above 13.0 mmol/l: - correct with Bolus (QA) insulin via **insulin pen** and complete line cannula reservoir change
4. Remember Bolus Calculator will not be accurate until 4 hours after last pen injection of bolus insulin.
5. MONITOR 1 – 2 hourly until BG return to target range.
6. Consider temp basal increase 30 – 50% for two hours if BG remain above target.
5. Continue usual ratio for food if eating & correction as per sensitivity ratio
6. Reduce temp basal gradually as BG Improve

**If ketones develop follow POSITIVE ketones guidance above**

### POSITIVE

Urine ketones + OR ++      +++ OR ++++  
Blood ketones 1.5 – 3 mmol/l      >3 mmol/l  
= 10% TDD rule                      = 20% TDD rule

1. Take correction of Bolus (QA) quick acting insulin via **insulin pen** using 10% & 20% rule

**NB** Remember Bolus Calculator will not be accurate until 4 hours after last pen injection of bolus insulin.

2. Complete line cannula reservoir change as soon as pen correction administered
3. Apply temp basal rate 30 - 50% increase for two hours initially  
If needed, temp basal rate can be increased by 100%
4. Monitor BG and Ketones 1 - 2 hourly
5. Correct every two hours until ketones are negative or are significantly reduced
6. The first two corrections should be via your bolus (QA) insulin pen device
7. Take usual ratio for food if eating
8. Continue with above until ketones resolve
9. Reduce temp basal gradually as BG improve

**If high BG, ketones persist and/or you are vomiting and unable to keep any fluids down – attend A&E**

***Remember to contact your GP if you suspect infection or if illness last more than two days***

**This formula provides starting doses. Further adjustments must be made according to standard stepwise approach based on blood glucose results.**

### **10% AND 20% READY RECKONER**

Use the table below as a guide to help you to calculate 10% or 20% of your **Total Daily Dose of insulin (TDD)**.

<b>TDD</b>	<b>10%</b>	<b>TDD</b>	<b>20%</b>
15	2	15	3
20	2	20	4
25	3	25	6
30	3	30	6
35	4	35	7
40	4	40	8
45	5	45	9
50	5	50	10
55	6	55	11
60	6	60	12
65	7	65	13
70	7	70	14

**If you do not know where to find your TDD please refer to your pump user manual.**