

Insulin Pump Failure: A Guide for Families

Pump Site Failure

This is the most common cause for insulin pump failure. The site may have disconnected or kinked stopping the flow of insulin.

When to suspect pump failure:

- Consider pump failure when blood sugars continue to be high even though you are giving correction boluses through the pump
- Consider pump failure with moderate or large ketones noted while on the pump

What to do:

- Check blood sugar and ketones
 - If blood glucose is persistently high and there are no ketones, consider changing pump site and giving a blood sugar correction via injection
 - If ketones are moderate or large, give your typical ketone correction (as per sick day guidelines from the clinic) via injection and change the pump site.

If the pump itself appears broken, gives an error message, or will not turn on, proceed to the next section

Insulin Pump Failure

Like any electronic device, insulin pumps can fail due to a problem with the pump itself.

Sometimes this occurs after office hours. It is important to have a plan in place. When your pump fails, you must inject insulin another way. Make sure you have back up supplies for injections with you at home and also if you travel.

At each office visit, write down any changes to your settings. If you upload, settings can be found in your account, but it is still helpful to keep a written copy or take a picture of it.

- Keep track of the following insulin pump settings:
 - Basal: rates, times, total daily basal insulin

- Bolus: carb ratios and times, sensitivity (correction) factor and times, target blood glucose (BG) and times
- Contact Your Insulin Pump Company:
 - Know the telephone number of your insulin pump company. Call them right away when your pump fails
 - They can usually send you a new pump within 24 to 48 hours
- Access to long-acting (basal) insulin and injection supplies during insulin pump failure
 - Long-acting insulin (e.g. glargine, detemir, degludec, etc.) needs to be given daily
 - Keep a vial or insulin pen of long-acting insulin on hand for pump failure or at least have a prescription available.
 - You will also need either syringes or insulin pen needles.
 - At every office visit, confirm your current long-acting insulin dose.
 - **Please call your diabetes care team if you do not have access to long-acting insulin**
- Manual injections until a new insulin pump arrives
 - You must give yourself insulin injections until your new pump arrives.
 - Before meals, use your carb ratios to cover the food you are about to eat.
 - If blood glucose is above target range, also calculate a correction dose. Be aware that the insulin-on-board (or active insulin) feature that your pump uses will not be there if you are not wearing your pump. Therefore, there is the possibility of stacking insulin and having a low blood sugar if you are dosing corrective doses less than every 2 hours.
 - Replace your insulin pump basal with long-acting insulin.
 - When the new pump arrives, you may reconnect 24 hours after your last manual dose of long-acting insulin.
 - OR you may reconnect and enter a temporary basal of 0% until 24 hours

after your last manual dose of long-acting insulin.

- Program the new insulin pump with your normal settings. By having your settings
- written down, a pump company representative can help you program the new insulin pump.
- Communicate with your diabetes care team
 - Let your team know when your insulin pump fails, what your backup plan is, and ask any questions you may have.

References

1. Grunberger G, Abelseth JM, Bailey TS, Bode BW, Handelsman Y, Hellman R, Jovanovič L, Lane WS, Raskin P, Tamborlane WV, Rothermel C. Consensus Statement by the American Association of Clinical Endocrinologists/American College of Endocrinology insulin pump management task force. *Endocr Pract.* 2014 May;20(5):463-89. doi: 10.4158/EP14145.PS. PMID: 24816754.
2. Carter T, Isfort A, Vogt K, Emerick J. DKA, Quality, and Costs: How a Written Back-Up Plan Saves Money and Lives. *AADE in Practice.* 2017;5(2):18-23. doi:10.1177/2325160316682944

