BASAL TESTING REQUIREMENTS
If any of these are not followed, the basal test may not be performed and needs to be cancelled & started over

1. **No food being digested**
   a. You may not eat for at least 4 hours before the basal test begins
   b. The meal/snack (that is more than 4 hours before the basal test) needs to be low in fat
   c. Do not eat during the basal test UNLESS blood sugar is less than 70*
   d. No caffeine beverages during the basal test but water or caffeine-free diet beverages (Crystal Light®, Diet Sprite®, diet root beer) are OK during the basal test

2. **No bolus insulin working during the basal test**
   a. Do not give bolus insulin (Humalog®/Novolog®) for at least 4 hours before the basal test begins
   b. Do not bolus during the test UNLESS blood sugar is above 250**

3. **There may be no changes in the body's normal glucose output**
   a. Avoid hypoglycemic episodes for at least 6 hours before the basal test begins
   b. No illnesses during the test (virus, stomach bug, fever, infection)
   c. No steroid medications may be used during the test
   d. Avoid performing the basal test during major stages of menstrual cycle if blood sugar changes are usually noted

4. **Allow basal insulin to be delivered uninterrupted**
   a. Do not put the pump into suspend
   b. Do not disconnect from the pump

5. **Maintain low to moderate activity level**
   a. Do not exercise starting 4 hours after last meal or snack
   b. You may perform light to moderate exercise soon after the last meal or snack if it is your normal time to do so
   c. Perform usual daily activities during the basal test

6. **Monitor blood sugar levels**
   a. Start testing blood sugar levels at least 4 hours after last meal/snack or bolus
   b. Use the same blood glucose monitor throughout the basal testing
   c. Check blood glucose level every 2 hours
   d. Testing may be performed for 4-12 hours

* For blood sugar readings <70, eat 10-15 gms of carbohydrate and stop the basal test.
** For any readings above 250, stop the basal test and check for ketones. If ketones are negative, bolus with the pump. If ketones are present, give an insulin injection and change the infusion set. Basal test should be stopped.
When blood sugars are less than 70 or greater than 250, blood sugar records must be faxed to Endocrinology office at (302) 651-5419

### APPROXIMATE BASAL TESTING TIMES:

<table>
<thead>
<tr>
<th>TEST</th>
<th>EAT AND BOLUS BY</th>
<th>CHECK BLOOD SUGAR AT:</th>
<th>OK TO EAT AND BOLUS AGAIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight</td>
<td>7 P.M. (skip nighttime snack)</td>
<td>11 P.M., 1 A.M., 3 A.M., 5 A.M.</td>
<td>5 A.M.</td>
</tr>
<tr>
<td>Morning</td>
<td>Night before</td>
<td>5 A.M., 7 A.M., 9 A.M., 11 A.M.</td>
<td>11 A.M.</td>
</tr>
<tr>
<td>Afternoon</td>
<td>7 A.M. (skip lunch)</td>
<td>11 A.M., 1 P.M., 3 P.M., 5 P.M.</td>
<td>5 P.M.</td>
</tr>
<tr>
<td>Evening</td>
<td>1 P.M.</td>
<td>5 P.M., 7 P.M., 9 P.M., 11 P.M.</td>
<td>11 P.M.</td>
</tr>
</tbody>
</table>

### YOUR BASAL TEST SCHEDULE:

<table>
<thead>
<tr>
<th>TEST</th>
<th>EAT (LOW FAT*) MEAL AND BOLUS BY</th>
<th>CHECK BLOOD SUGAR AT:</th>
<th>OK TO EAT AND BOLUS AGAIN AT:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overnight</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Morning</td>
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</table>

* For low fat meal, avoid fast food, fried foods, and foods with cheese, sauces and gravies. Stick with lean meat (skinless chicken, lean beef, seafood, pork tenderloin), vegetables of any kind, and carbohydrate without much extra butter, oil and/or margarine. Milk should be skim or 1% lowfat & fresh fruit of any kind is also acceptable.
SKIN CARE TIPS
Skin care is important for the prevention of infection, the maintenance of healthy tissue and the effective absorption of insulin.

Maintaining a healthy skin and tissue and preventing infection:

- Wash your hands with soap and water prior to inserting the infusion set
- Use an adhesive remover (like Uni-Solve®) if adhesive from the old set is not removed with soap and water
- Clean the site thoroughly with an IV prep wipe prior to inserting the infusion set. Be sure that the area is dry before insertion or it will not stick well. Avoid breathing or blowing directly on this area.
- If a skin irritation occurs after using the IV prep, try another brand of skin protection such as Skin-Prep™ Protective Dressing, 3M Cavilon™ No Sting Barrier Film or IV 3000.
- Do not touch the end of the infusion set (insertion needle), cartridge, or the top of the insulin vial.
- Change the infusion set every 2-3 days or as recommended by your health care provider
- Move the site at least one inch from the previous insertion site. Allow two inches from the navel. Working in a “W” pattern makes it easy to keep track of insertion sites.
- Monitor daily for any signs or redness at the insertion site

Enhancing the absorption of insulin

- Follow the healthy skin and tissue tips above
- Stay at least two inches (two fingers) away from the navel and an inch away from any scars
- Avoid scar tissue areas or areas where the underlying tissue feels hard. Insulin absorption can be unpredictable in these areas. They can be used again once it has healed
- Avoid inserting the infusion set near the belt or waistline
- Use the upper thigh or hip for your infusion set when the abdomen is not appropriate or not comfortable
- Ensure the tape sticks for uninterrupted insulin delivery. A product such as IV3000 by Smith & Nephew can be applied to the skin prior to the introduction of the infusion set (this is called sandwiching the dressing)
- There are several products on the market, such as Mastisol®, Drysol and Skin-Tac-H that can help the dressing adhere to the skin. These products help keep the skin dry, allowing the infusion set to stay in place.
- If there is excessive perspiration, there are other ways to help keep the sets in place such as using unscented antiperspirant spray around the site, tincture of benzoin, or Hollister Medical Adhesive spray.

Remember to discuss any problems you are having with the infusion set adhering to the skin with your diabetes team member!
If you are experiencing hyperglycemia (high blood sugar):

- If the blood sugar is greater than 250, check for ketones
- If ketones are negative, bolus using the appropriate correction formula and recheck blood sugar in 1-2 hours
- If blood sugar in 1-2 hours is still greater than 250, administer insulin by injection and change the entire pump setup including cartridge, tubing and catheter
- If ketones are positive, give insulin by injection every 2 hours until ketones are negative and change the entire pump setup including cartridge, tubing and catheter. You must also drink at least 8-12 ounces of calorie-free, carbohydrate free fluids every 30-60 minutes

After you have checked/done the above, double check the following:

- Check the basal settings for accuracy
- Check bolus and total daily doses (TDD) of insulin in the pump’s history
- While the pump is disconnected, bolus to confirm that the pump is properly primed and insulin is dripping from the end of the tubing
- Check the tubing for large air bubbles
- Review the error/alarm history
- Confirm calculation skills for Insulin: Carbohydrate ratio (I:C) and Correction Formula (CF)
- Confirm accurate carbohydrate counting

If you suspect Diabetic Ketoacidosis (DKA) - symptoms would be: Stomach pain, Vomiting, Fruity breath, Deep breathing, Drowsiness, Increased thirst, Urination

- Page the Endocrinologist on call and go to the closest emergency room, per MD recommendation
- Continue to check blood sugars every 2 hours and cover with Novolog/Humalog by injection until seen by a healthcare professional
- Continue to check for ketones and drink 8-12 ounces of calorie-free, carbohydrate-free beverages every 30-60 minutes

If your pump stops functioning:

- Disconnect from the pump
- Remove catheter site
- Return to multiple daily injections with Humalog/Novolog
- Give long-acting insulin (Lantus) based upon Endocrinologist’s recommendations
- Give short-acting insulin (Humalog/Novolog) every 2-3 hours per Insulin: Carbohydrate ratio and Correction Formula
- When your new pump arrives, set the date, time and basal rates. Then, reconnect the pump with insertion set.
LEARNING OBJECTIVES:
At the completion of this session, the learner(s) will be able to:

1. List symptoms & prevention of hypoglycemia
2. List symptoms & prevention of hyperglycemia
3. Explain the pump warranty guidelines
4. Explain symptoms & prevention of DKA
5. List what is the “unused bolus rule”
6. Describe proper skin preparation & site rotation
7. Describe how & when to properly disconnect from the pump
8. Describe how to cancel a bolus
9. Explain how to silence & set pump alarms
WHAT TO HAVE IN YOUR EVERYDAY PACK

The following is a list of items you will always need to carry with you since you never know what might happen when you are away from home...

- Glucagon emergency kit
- Emergency food source (glucose tablets, small juice box, small box of raisins, pack of Lifesavers®)
- Insulin pen or syringes
- Vial(s) of Humalog or Novolog insulin
- Infusion set and cartridge
- Skin prep for site change
- Current list of all insulin:carbohydrate ratios, correction factor and present basal rates
- Foil wrapped Ketostix®/Blood ketone strips
- Blood sugar meter and vial of test strips
- Extra batteries for your pump