

## **Type 1 Diabetic Hikers on the Pump**

When I first started my preparation for Philmont, my parents had already been thinking about how to cope with my diabetes out on the trail. They had been searching through books and on-line for as much advice and information on how to healthily conquer the 11-day backpacking trip through Philmont's mountains with this disease. Unfortunately, they found little information about hiking with diabetes, and much less information relating to Philmont. So, we were stuck with our own knowledge of diabetes, and with what advice our doctor's gave us. We did the best we could, and I came home from the trip safe and healthy. Once home, my dad asked me to write an article of advice to type 1 diabetics who have yet to tread Philmont's trails, since we were not able to find any. Unfortunately, I can only give advice to diabetics on insulin pumps, and not so much diabetics on multiple daily injections. Don't let that phase you, though, keep on reading for advice that can still help you. So here it is, with as much information that I can give to the world.

Supplies for the trail was, for me anyhow, one of the last things I thought about. I allowed my mom to take over that while I thought of gear and clothing for Philmont. Here are a few general ideas of how to pack.

- We at my house decided that there needed to be three people with supplies: myself, my advisor, and the health lodge at base camp. This was so that if I should run out of supplies, there was another person on the trail with backups, and if both of our resources should fail, we could radio base camp for more supplies.
- When packing the supplies to be taken in your backpack, pack more than you need. We estimated that I would use 4 Quicksets, so we packed 6 in my personal supplies. By the time I came home, though, I had used all of them. It's always good to pack extra.
- In the backup supplies, we decided an InDuo tester (which cleverly contained an insulin pen inside) would be wise, so that should my original tester fail, I had another tester, and should my pump fail, I had an insulin pen.
- Keep supplies for different people (i.e. myself, my advisor, the health lodge) separated. We did this easily by packing the supplies into Tupperware boxes.
- As for keeping insulin cool, don't fret. Insulin can be stored at room temperature for extended periods of time. Still, try to keep it from reaching extreme temperatures.
- If you are trying to switch from one treatment to another (i.e. insulin shots to insulin pump), try to get it switched at least six months before you leave, or else Philmont will not allow you to hike.

One of the first obstacles on my trip was the actual getting to Philmont. This meant getting through airplane security with my supplies, the actual plane rides, then the long bus rides to Philmont, and then what to do once at base camp. Simply enough, this is what I did.

- I took all my supplies, all contained in Tupperware boxes, in one tote bag. This made it easy for going through security. Take it as carry-on luggage. Putting your supplies in the carrier of a plane makes it inaccessible should you need it. Also, any insulin vials may burst due to the pressure and temperature changes as the plane increases in altitude.
- Should you have any trouble going through security, it's best if you bring along all of your prescriptions on paper, to prove that you are approved of having these supplies. Also, as good measure, have your endocrinologist write a letter stating that you are a diabetic and his/her patient.

- Throughout all of my plane and bus riding, I kept my supplies with me. This prevented it from getting lost or broken in the other entire luggage, and it prevented it from being stolen. Being hundreds of miles away from home without diabetic supplies is not a good situation.
- Once at base camp, your crew will eventually need to head down to the health lodge. Bring your supplies with you then. I was sent into a neighboring building where I explained to one of the staff there that I was diabetic, I was bringing my own supplies in my backpack, my advisor had a backup supply, and that I was leaving an emergency supply there at the health lodge. This was my situation; it may be different for others.

Once through the health lodge, you are now free to disperse the remaining supplies between you and your advisor, and pack it into your backpack.

- Keep your supplies in their containers. That could go without saying.
- The best place I found to keep my supplies was at the bottom of my backpack, sitting above my sleeping bag compartment. This kept it from getting in the way while setting up for camp, since I only needed it when I ran out of test strips or when I needed to change my insulin set. This also kept it warm from cold nights and cool from the hot sun. Also, it was protected from being broken.
- Supplies I needed to reach more often, such as my tester, I kept in a fanny pack which I would carabiner to the outside of my pack. I don't recall the fanny pack ever getting too hot from the sun, so it was a safe place for it.

Now for the moment we've all been waiting for: getting out on the trail. Here's a little idea of what to do out on the trail.

- The first idea I'll tackle is insulin adjustments. I had two theories out on the trail that I could mess around with. My first was when starting the hike get your sugar at a good number (less than 150), then adjust your basal rate to be about 75% of the original (if you have a MiniMed Paradigm 512, you can keep your original basal rate, create a new basal rate, and switch whenever you need to. Check out your pump for that feature.). My second idea was to start with a slightly higher number such as 190 and then keep your original basal rate. I found that my second theory of starting with a higher number worked out well for me. The other method of keeping my basal rate lowered, especially through night, usually resulted in high sugar numbers. To each their own, though.
- When eating, I would usually back off a unit or two of insulin. This gave me a safe blood sugar level to work off of and not result in hypoglycemia.
- Speaking of food, most meals out there will give you the carbohydrate count. Breakfast and lunch are made of packaged foods, but unfortunately, dinner consists of unlabeled packaged food that is cooked all together in one pot. My main methods were to either guess or wait a half hour or more to check my blood sugar and then correct it. Neither are doctor recommended methods, but it was what I had to do.
- When testing out on the trail, if you don't normally use alcohol swabs at home, now is the time to use them, Believe me, it stings when dirt gets into your lanced skin. Bring hand sanitizer, too. Sanitize your hands, swab your finger, and then test. It'll feel much better than if you don't. While we're on testing, if your tester is temperate-sensitive (mine is), try to keep it out of direct sunlight for long periods of time, but still in a warm area. I spent too many mornings and nights with my tester in my armpit trying to warm it up.
- Take care of your feet! This goes for anyone, but especially for diabetics. Treat your blisters, cut your nails STRAIGHT across (as I unfortunately learned with an ingrown toenail), let your feet out of the boots at camp, air them out, soak them in cold water, just take care of your feet!

- Make sure that your crew is educated about diabetes. Just let them know the basics, the dangers of high and low blood sugar, and what to do in an emergency. The lack of knowledge people have of diabetes still amazes me (You're going into diabetic shock? You need your insulin shot!), and going into the backcountry with a crew of people like that wouldn't feel very safe.

Of course, this wouldn't be a complete article without my experiences with hypoglycemia and hyperglycemia. I wouldn't think of leaving them out anyhow.

#### Low blood sugar:

- On shakedown hikes before leaving for Philmont, try to learn to differentiate your low blood sugar symptoms from regular hiking stress. For example, if a fast heartbeat is one of your regular symptoms, and you are not hiking at a strenuous pace, you might be low.
- Make sure that your crew and your advisors understand what low blood sugar is, why it will require a break on the trail, and how to treat it. Also, make sure at least one person is carrying a Glucagon kit and knows how to operate it, should the occasion occur.
- Common sense: Bring glucose tablets or gel. One package of glucose tablets did me fine, but if you are more prone to low sugar, bring more. If you happen to run out of glucose tablets on the trail, the next time you are at a staffed camp be sure to check out their "swap boxes." These are boxes filled with unwanted food that hikers toss in. I grabbed a few bags of gorp out of these boxes, just in case I felt low on the trail.
- If you are hiking and you feel low or aren't sure, don't be afraid to tell your crew leader to stop. Keeping quiet about how you feel won't make the situation better. Test, and if your sugar is low, take a 20-minute break to eat something and recover. Don't just settle for a 5-minute break. Eating something and then taking off does not give the sugar time to kick in, so you'll end up feeling worse.
- Once in camp, my Ranger permitted me to keep my blood tester and a pack of un-opened glucose tablets in my tent with me, should I become low at night. However, if your glucose tablets are opened or if you're just nervous of the bear threat put your tester and glucose up in the "oop's" bag, so it'll be easy to get down in the middle of the night. If you feel dangerously low, be sure to have a person who you can ask (or yell to) to get your supplies down. This could be your tent partner or advisor.

#### High blood sugar:

- As said above, be sure of your high blood sugar symptoms, in case they seem to mingle in with hiking stress symptoms. For example, if being thirsty is one of your symptoms, try to be able to tell whether it's normal, your sugar is high, or if you're dehydrated. In any case here, stop and drink something.
- If you are the kind of person who tends to forget to take insulin for your food (I admit to it), it may be best to have a person who reminds you at each meal to take your insulin. It may sound childish to have someone there to remind you, but it could definitely help.
- A good range to keep your sugar while hiking is higher than 140 but less than 220. While it is usually suggested to not exercise if your sugar is 200 or higher, I found that 200-220 was a reasonable source of sugar to hike with. Any higher was too high for me. If your sugar is too high, if possible, don't start hiking and get it corrected. When sugar is above 240, the sugar begins being sent out to different organs and deteriorates them. By exercising, this quickens the process. There is also the possible risk of ketoacidosis.
- Since illness and stress help to elevate sugar, try to eliminate the two as much as possible. Make sure that dishes are thoroughly washed, avoid rodents due to Hantavirus, purify water as needed, wear your raingear when it's raining, dress warm if heading up a cold mountain (like Baldy) and use the

other common sense your mother taught you. As for stress, all the more reason for your crew to get along!

Once off the trail, there isn't much more to say. You may stay a few more nights at base camp, then leave and head home. The days on the trail, even if they seem long at first, will pass by too quickly. Soon, you will have accomplished something to be proud of for years. Not only did you complete a tough hike, but you accomplished it with a chronic disease, which undoubtedly makes the trek a little harder for you than for your fellow hikers. When you finish with your adventure, be proud of yourself. I hope my article is helpful to any diabetic heading out to Philmont.

Zoe Yeaton  
622 A1  
swimmy388@hotmail.com

### Supply List:

This is a list of insulin pump and testing supplies I brought with me to Philmont. The supplies I left at base camp were supplies I would need if my insulin pump broke, or if I somehow ran out of or lost all supplies on the trail. The backup supplies were supplies that my advisor put in his backpack, and were supplies that could be used if I ran out of mine. My supplies were supplies we calculated to be more than enough for the trip to Philmont, the hike, and then back. This should act only as a guideline, not an exact list of what to bring. This was calculated from how fast I go through insulin reservoirs and how often I test.

#### **Base-camp:**

3 bags of BD Ultra-Fine syringes  
1 insulin pen  
1 glucagons kit  
2 Novolog pen reservoirs  
1 One Touch test strips  
2 BD Test strips  
1 vial of Novolog  
1 vial of Lantus  
1 AAA battery  
1 battery for tester  
1 Paradigm Quickset  
1 pump reservoir  
A bag of insulin pen needles and lancets  
A stack of alcohol swabs

#### **Backup supplies:**

2 BD test strips  
1 One Touch test strips  
1 battery for tester  
1 AAA battery  
1 Glucagon kit  
1 tester and insulin pen in one  
1 lancing device  
2 Paradigm Quick-Sets

1 Quick-Serter  
1 vial of Novolog  
2 pump reservoirs  
A bag of insulin pen needles and lancets

#### **My supplies:**

2 boxes of BD test strips  
1 vial of Novolog  
6 Paradigm Quick-Sets  
6 insulin pump reservoirs  
1 box of ketone strips  
A stack of alcohol swabs  
Zip-lock bag (for used sets)  
1 AAA battery  
1 battery for tester  
Lancets  
Sharpie box (Altoid boxes work great)  
1 tester  
1 Glucagon kit  
A fanny pack (to keep items such as testers accessible)