LP is a 45-year-old female with type 1 diabetes diagnosed in her 20s. She is in excellent physical condition and enjoys a variety of outdoor pursuits during her down time. She works hard at controlling her diabetes, has recently attended an accredited Diabetes Self-Management Program, and sees her diabetes educator at each office visit.

Lifestyle

- Swims twice weekly in morning before work and goes to a spin class every Sunday afternoon.
- Works during the week in an office setting and walks the half-mile to and from work daily
- Eats healthy foods and maintains BMI of 22.

Diabetes treatment

- Glargine at bedtime.
- Pre-meal doses of aspart based on carb intake along with an added amount of insulin based on her correction factor and glucose target. Sometimes corrects at bedtime. She does the math before dosing and is competent at carb counting.
- Frequent readings below 70mg/dL during and after exercise and some nocturnal hypoglycemia.
- Often spikes over 200mg/dL post meal.
- PCP says her A1c of 7% is acceptable but she is unhappy with the hypoglycemia, feels she is doing all she can do, and wants to try something different.
- Checks blood sugar 4-8 times daily

What good things could LP expect from an insulin pump?

- Basal rates are highly customizable as to timing and amount based on individual needs. *In LP's case she could set an "exercise" rate that would automatically lower her rate during exercise sessions*.
- The pump, once programed, will suggest bolus dose amounts according to current blood sugar and meal contents. This is based on the individual's calculated insulin to carb ratio and correction factor* which are programmed into the pump*. LP is noticing frequent post meal spikes over 200 and the pump allows for variable bolus options that will allow her to simply punch a button or touch a screen to accurately administer a bolus dose.*
- Smart pumps are also able to prevent the common problem of "stacking" insulin by automatically calculating insulin on board*. *LP's pump would warn her about administering a bolus if a previous bolus was still in effect therefore reducing the chances of hypoglycemia.*
- If paired with certain continuous glucose monitor (CGM) systems, *she could take advantage of the closed loop and advanced hybrid closed loop systems that automatically adjust insulin doses based on blood glucose levels.*
- *She and her provider would have access to a plethora of useful reports via data download.*

What are some of the potential barriers to pump use?

- Objection to wearing the device 24 hours a day.

- Psychological impact of dependence on the technology.
- Cost of pump and monthly supplies.
- Person must be capable of using it and able to be trained.
- Without CGM integration there is still the need for multiple daily SMBG checks.
- Infusion sets must be changed every 2-3 days or insulin delivery may be impaired.