

## INTRODUCTION TO ONE DIABETES TECHNOLOGIES

Grace Nelson, MD, Pediatric Endocrinologist

The technology surrounding diabetes has been advancing quickly for the past few years. Insulin pumps and continuous glucose monitors (CGMs) can now work together to improve blood sugar using a hybrid closed loop system. Let's start with reviewing insulin pumps:

- Insulin pumps deliver insulin just under the skin throughout the day. The amount of insulin is either based on a pre-entered rate or based on real-time input from the CGM (we will get to this in a minute). When the person is going to eat, they are able to input this information into the pump and get a larger dose of insulin at that time.

Now let's review continuous glucose monitors.

- Continuous glucose monitors work by checking your body's glucose levels every 3-5 minutes and predicting the trends. Using a CGM gives you the ability to see what your sugar level is at any given time and what you expect it will be in 15-20 minutes. This prediction of where the sugar level is heading can be used to prevent or lessen low and high levels.

Reacting to all the information from the CGM can be hard when you are asleep (or just busy). This is where a "hybrid closed loop system" comes in. This system works by taking sugar trends from the CGM and making insulin changes to keep sugar levels steady/in range. If it detects a rise in sugar, then the amount of insulin will be increased; if it detects a drop in sugar, then it will decrease the amount of insulin being given. If this system worked without any input from the user then we could call it a "closed loop". Even though the hybrid system means the user still has to enter carbs and pay attention to alarms, it can reduce the adjustments needed. The improvements to sugar levels are often noticed at night first, when we are not regularly checking and responding to a CGM reading.

As with all new technology there are downsides. When starting out on these new systems there is usually a "learning curve" or a period of time to get all the settings in the pump to work correctly. Sometimes this means things look worse before they look better. If this happens to you, it is important to reach out to your provider or Diabetes Educator (CDCES) for help! If after reading this introduction to diabetes technologies you have questions or just want more specific information, please let your provider and CDCES know!

## RECIPE

Tara Karr, MS, RD, LDN, CDCES



- 1 burrito-sized whole wheat tortilla
- 1 Tablespoon softened fat free cream cheese
- 1 Teaspoon Mrs. Dash seasoning (any flavor)
- 3 slices of turkey
- 1 thinly sliced tomato
- Small handful of spinach or lettuce

- Mix cream cheese and seasoning until smooth
- Spread the cream cheese to the edge of the tortilla and top with spinach or lettuce, turkey and tomato
- Tightly roll up the tortilla. Wrap in a damp paper towel and place in the fridge for 1 hour.
- Cut each roll into 6 pieces before eating

## NUTRITIONAL FACTS

Total Carbs: 17 grams  
 Fiber: 10 grams  
 Total Protein: 12 grams  
 Total Fat: 3 grams

