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Delicious Diabetes Dishes

Osama Alkhalili
Wayne State University School of Medicine, fv5388@wayne.edu

Kiana Cabasa
Wayne State University School of Medicine, hf5986@wayne.edu

Sikander Chohan
Wayne State University School of Medicine, ga7975@wayne.edu

Carly Conway
Wayne State University School of Medicine, gt5511@wayne.edu

David Huynh
Wayne State University School of Medicine, ep8328@wayne.edu

See next page for additional authors

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Authors
Osama Alkhalili, Kiana Cabasa, Sikander Chohan, Carly Conway, David Huynh, Cassandra Keinath, and Lavina Desai

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Delicious Diabetes Dishes

Recipes and Resources for the Type 1 Diabetes Management of Detroit’s Youth

by Osama Alkhalili, Kiana Cabasa, Sikander Chohan, Carly Conway, David Huynh, Cassandra Keinath and Lavina Desai
This cookbook and resource guide was created by a team of Wayne State University School of Medicine students, with the guidance of physician mentor Dr. Lavina Desai. The goal of this cookbook and guide is to help children with Type 1 Diabetes better manage their care. By maintaining a balanced diet and properly calculating meal time insulin dosages, blood glucoses levels can be better controlled resulting in both healthier happier children. The recipes in this book are all diabetes-friendly, tasty, and affordable.

While having a balanced diet is a challenge for many, we also recognize the added burden those who experience food insecurity may face. Our hope is that the recipes included in this book are accessible to all. As such, additional local resources on food banks and food pantries operating in our Detroit community can be found here as well.
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A **bolus** is a dose of insulin taken to manage an increase in blood glucose levels. Bolusing correctly is especially important when eating, as food is known to raise a person’s blood sugar.

When calculating mealtime insulin dosages, several variables are important to consider. Such factors include knowing your target blood glucose, correction factor and personal insulin to carb ratio. These numbers will typically be assigned by your physician. A **target blood glucose** is exactly what it sounds like, it is your target, or goal, glucose level. A **correction factor** is a number that tells you how much one unit of insulin will generally lower your sugar. This is an important part of calculating the units of insulin you need to bring you back to your target. Lastly, your **insulin to carb ratio** is the number that tells you how many units of insulin to take for a specific amount of carbohydrates.

Once you know your personal target, correction factor and insulin to carb ratio, these numbers can be plugged into the following equations to calculate **total units of insulin** needed at mealtime.

**How to Bolus:**

1. **Current Blood Glucose**
2. **Target Blood Glucose**
3. **Amount to Correct**
4. **Correction Factor**
5. **Grams of Carbohydrates**
6. **Carbohydrate Ratio**
7. **Correction Bolus**
8. **Carbohydrate Bolus**
9. **Total Units of Insulin**

\[
\text{Current Blood Glucose} \quad - \quad \text{Target Blood Glucose} = \text{Amount to Correct}
\]

\[
\text{Amount to Correct} \div \text{Correction Factor} = \text{Correction Bolus}
\]

\[
\text{Grams of Carbohydrates} \div \text{Carbohydrate Ratio} = \text{Carbohydrate Bolus}
\]

\[
\text{Correction Bolus} + \text{Carbohydrate Bolus} = \text{Total Units of Insulin}
\]
"Wellness is associated with happiness. When you're happy, you're feeling good in your mind and body. That ties into being healthy, eating well, and exercising regularly. It also ties into being excited about things - like getting up in the morning and having a healthy breakfast"

STELLA MAXWELL
Ingredients:
- 1.5 Tbsp peanut butter (no sugar added)
- 1/2 banana
- 1 slice whole grain bread

Directions:
- Toast the bread
- Spread peanut butter on toast
- Slice half of peeled banana in thin circles
- Place banana slices on bread
- Enjoy!

Nutritional Information:
- Serving Size: 1 slice
  - Calories per serving: 291
  - Fiber: 4.2 g
  - Total Fat: 14.6 g
  - Protein: 9.9 g
  - Total Carbohydrates: 31.9 g

Bolus Calculation:
- (grams of carbs=31.9) / (I:C ratio) = carbohydrate bolus
- (BG) - (target BG) = amount to correct
- (amount to correct) / (correction factor) = correction bolus
- carbohydrate bolus + correction bolus = total units of insulin
**BERRY AND SPINACH SMOOTHIE**

**Ingredients:**
- 1/2 cup frozen blueberries (add ice if using fresh berries)
- 1/2 banana
- 1 cup raw spinach
- 1/2 cup skim milk

**Directions:**
- Peel and slice banana in half
- Add blueberries, 1/2 banana, and spinach to blender
- Pour in skim milk
- Blend until smooth
- Serve immediately and enjoy!

**Nutritional Information:**
- Serving Size: 1 cup
  - Calories per serving: 143
  - Total Fat: 0.8g
  - Protein: 6.3g
  - Total Carbohydrates: 34g
  - Fiber: 3.3g

**Bolus Calculation:**
- (grams of carbs=34) / (I:C ratio) = carbohydrate bolus
- (BG) - (target BG) = amount to correct
- (amount to correct) / (correction factor) = correction bolus
- carbohydrate bolus + correction bolus = total units of insulin
Lunch

"Ask not what you can do for your country. Ask what's for lunch"

ORSON WELLES
**Personal Pizza**

**Ingredients:**
- 1 Low carb tortilla (Carb Balance)
- 3 TBSP tomato sauce
- Dash of Italian seasoning blend
- Dash of salt
- 1/2 ounce pepperoni
- 1 ounce mozzarella cheese

**Directions:**
- Heat oven to 450F
- Place tortilla on a baking sheet
- Combine tomato sauce and seasonings in a bowl
- Spread tomato sauce mix onto tortilla
- Top with cheese and pepperoni
- Bake at 450F for 10 minutes

**Nutritional Information:**
- Serving size: 1 pizza
  - Calories per serving: 210
  - Total Fat: 12 g
  - Protein: 10.3 g
  - Fiber: 10.8 g
  - Total Carbohydrates: 16.5 g

**Bolus Calculation:**
- \( \frac{\text{grams of carbs}}{\text{(I:C ratio)}} = \text{carbohydrate bolus} \)
- \( \text{BG} - \text{(target BG)} = \text{amount to correct} \)
- \( \frac{\text{amount to correct}}{\text{(correction factor)}} = \text{correction bolus} \)
- \( \text{carbohydrate bolus} + \text{correction bolus} = \text{total units of insulin} \)
Ingredients:

- 1 low carb tortilla (Carb Balance)
- 2 oz turkey deli meat
- 1 slice of tomato
- 1 ounce shredded cheese
- 1/4 cup shredded lettuce
- 1 TBSP ranch dressing

Directions:

- Lay tortilla out flat on a plate
- Place turkey meat on tortilla
- Place slice of tomato on top of turkey
- Sprinkle shredded cheese on tortilla
- Sprinkle shredded lettuce on tortilla
- Pour ranch dressing over tortilla
- Roll tortilla to make a wrap

Nutritional Information:

Serving Size: 1 Wrap
Total Fat: 13.4 g
Calories per serving: 245
Protein: 15 g
Fiber: 10.3 g
Total Carbohydrates: 17.4 g

Bolus Calculation:

- \( \frac{\text{grams of carbs} = 17.4}{\text{I:C ratio}} \) = carbohydrate bolus
- \( \text{(BG)} - \text{(target BG)} \) = amount to correct
- \( \frac{\text{(amount to correct)}}{\text{(correction factor)}} \) = correction bolus
- \( \text{carbohydrate bolus} + \text{correction bolus} \) = total units of insulin
"The dinner hour is a sacred, happy time when everyone should be together and relaxed"

JULIA CHILD
Ingredients:

- 2 tsp olive oil
- 1 cup baby spinach
- 1/2 shredded rotisserie chicken
- 8 oz whole wheat spaghetti pasta
- 1 tsp of lemon juice, lemon zest
- Salt ans pepper as needed

Directions:

- Add uncooked pasta to boiling water for 8 minutes
- Heat olive oil in large nonstick skillet
- Add spinach and chicken; cook 3-5 minutes
- Add cooked spaghetti, lemon juice, and lemon zest
- Add salt and pepper to taste

Nutritional Information:

<table>
<thead>
<tr>
<th>Serving Size: 2</th>
<th>Calories per serving: 350</th>
<th>Fiber: 4.2 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat: 15.3 g</td>
<td>Protein: 28.6 g</td>
<td>Total Carbohydrates: 26.9 g</td>
</tr>
</tbody>
</table>

Bolus Calculation:

- \(\text{grams of carbs} = 26.9\) / \((\text{I:C ratio})\) = carbohydrate bolus
- \(\text{BG} - \text{(target BG)} = \text{amount to correct}\)
- \(\text{(amount to correct)} / \text{(correction factor)} = \text{correction bolus}\)
- carbohydrate bolus + correction bolus = total units of insulin
Preheat oven to 425 F

In a large bowl, combine potatoes, broccoli, onion, oil, 3/4 tsp salt, and 1/2 tsp pepper; toss to coat

Transfer to baking pan coated with oil/cooking spray

In a small bowl, mix 1 tsp salt, paprika, and 1/2 tsp pepper.

Sprinkle chicken with paprika mix

Roast for 35-40 minutes

Remove chicken, roast vegetables until tender (8-10 minutes longer)

Serving Size: 4
Calories per serving: 352
Total Fat: 13.8 g
Protein: 27.6 g
Fiber: 5.7 g
Total Carbohydrates: 30.7 g

Bolus Calculation:

- (grams of carbs = 30.7) / (I:C ratio) = carbohydrate bolus
- (BG) - (target BG) = amount to correct
- (amount to correct) / (correction factor) = correction bolus
- carbohydrate bolus + correction bolus = total units of insulin
Dessert

"Desserts are the fairy tales of the kitchen—a happily-ever-after to supper"

TERRI GUILLEMETS
Ingredients:

- 1 cup peanut butter
- 1 egg
- 1/2 teaspoon vanilla extract
- 2/3 teaspoon zero-calorie sugar substitute (ex. splenda)
- 1/2 teaspoon baking soda

Directions:

- Preheat the oven to 350°F.
- Place all ingredients in a bowl and mix until smooth
- Scoop the dough with a spoon and roll into 12 evenly sized balls.
- Arrange dough balls on a cookie sheet around 1 inch apart
- Use a fork to flatten the tops of the dough balls just a little
- Bake for 12-15 minutes or until the edges turn brown.
- Remove from the oven and let the cookies sit for 2 minutes

Nutritional Information:

<table>
<thead>
<tr>
<th>Servings: 12 cookies</th>
<th>Calories: 140</th>
<th>Fiber: 1.2 g</th>
</tr>
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<tbody>
<tr>
<td>Total Fat: 10.4 g</td>
<td>Protein: 5.9 g</td>
<td>Total Carbohydrate: 4.2 g</td>
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</tbody>
</table>

Bolus Calculation:

- (grams of carbs=\(4.2\)) / (I:C ratio) = carbohydrate bolus
- (BG) - (target BG) = amount to correct
- (amount to correct) / (correction factor) = correction bolus
- carbohydrate bolus + correction bolus = total units of insulin
STRAWBERRY LEMONADE POPSICLES

Ingredients:
- 1/4 cup rolled oats
- 4 oz. low fat cottage cheese
- 4 cups whole strawberries
- 4 oz. of lemon juice, (about 4 lemons)
- 5 drops of liquid sweetener (ex. stevia)
- Popsicle molds

Directions:
- Place oats in a blender and blend until they become powder
- Add strawberries, lemon juice, cottage cheese, and liquid sweetener into the blender
- Continue blending until smooth texture forms
- Pour mixture into six popsicle molds
- Freeze popsicles for 3 hours or until solid

Nutritional Information:

<table>
<thead>
<tr>
<th>Servings: 6 popsicles</th>
<th>Calories: 73</th>
<th>Fiber: 2.0 g</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Fat: 0.5 g</td>
<td>Protein: 3.5 g</td>
<td>Total Carbohydrate: 14 g</td>
</tr>
</tbody>
</table>

Bolus Calculation:
- (grams of carbs=14) / (I:C ratio) = carbohydrate bolus
- (BG) - (target BG) = amount to correct
- (amount to correct) / (correction factor) = correction bolus
- carbohydrate bolus + correction bolus = total units of insulin
Snacks

"Food is really and truly the most effective medicine"

DR. JOEL FUHRHAM
Baby Carrots and Spicy Cream Dip

Ingredients:
- 1/3 cup sour cream (fat-free)
- 3 tbsp reduced-fat tub-style cream cheese
- 3/4 tsp hot pepper sauce
- 1/4 tsp salt
- 48 baby carrots

Directions:
- Stir the sour cream, cream cheese, pepper sauce, and salt together until well blended
- Let stand at least 10 minutes to develop flavors and mellow slightly
- Serve with carrots

Nutritional Information:
Serving Size: 2 Tbsps. dip plus 12 baby carrots
- Calories: 73
- Total Fat: 2.0 g
- Protein: 3.0 g
- Total Carbohydrate: 10 g
- Fiber: 3.0 g

Bolus Calculation:
- \((\text{grams of carbs} = 10) / (\text{I:C ratio}) = \text{carbohydrate bolus}\)
- \((\text{BG} - \text{target BG}) = \text{amount to correct}\)
- \((\text{amount to correct}) / (\text{correction factor}) = \text{correction bolus}\)
- \(\text{carbohydrate bolus} + \text{correction bolus} = \text{total units of insulin}\)
NO MAYO EGG SALAD

Ingredients:

- 12 hard-boiled eggs
- 4 Laughing Cow Light Creamy Swiss Cheese Wedges
- 1 tbsp Dijon mustard
- 1 tsp horseradish
- 1/2 tsp salt (optional)
- 1/4 tsp black pepper
- 4 cups arugula

Directions:

- Crack and peel the hard-boiled eggs. Slice the eggs in half and discard the yolks.
- In a medium bowl, mash together egg whites, cheese wedges, mustard, horseradish, salt (optional) and ground black pepper using a potato masher or sturdy whisk. Pulse until combined but still slightly chunky.
- Serve 1/2 cup egg salad mixture on top of 1 cup arugula.
- You could also serve with arugula on toasted whole wheat bread for an open-face sandwich.

Nutritional Information:

Serving Size: 1/2 cup egg salad on top of 1 cup arugula
- Calories: 100
- Total Fat: 2.0 g
- Protein: 13 g
- Total Carbohydrate: 3.0 g
- Fiber: 1.0 g

Bolus Calculation:

- \( \frac{\text{grams of carbs}}{\text{I:C ratio}} = \text{carbohydrate bolus} \)
- \( \text{BG} - \text{target BG} = \text{amount to correct} \)
- \( \frac{\text{amount to correct}}{\text{correction factor}} = \text{correction bolus} \)
- \( \text{carbohydrate bolus} + \text{correction bolus} = \text{total units of insulin} \)
If you are someone you know if struggling with food insecurity, know you are not alone. According to the United States Department of Agriculture, 13.6% of households with children experienced food insecurity prior to the Coronavirus pandemic. This represents about 5 million children. However, as the pandemic progressed nearly 13.9 million children lived in households that struggled with food insecurity.

For children with diabetes, having access to good quality, nutritious food is essential for maintaining steady glucose levels and preventing episodes of hyperglycemia (high sugar) or hypoglycemia (low sugar).

As such, utilization of the following Detroit resources can be helpful in order to ensure adequate access to food. The recipes in this guide are relatively basic, and therefore, some ingredients for these recipes may be able to be acquired from local food banks or pantries.
1. **Gleaners Community Food Bank**  
   2131 Beaufait Street  
   Detroit, MI 48207  
   Phone: (866) 453-2637

2. **Covenant House of Michigan**  
   2959 Martin Luther King Jr., Blvd  
   Detroit, MI 48208  
   Phone: (313) 463-2000

3. **Wits Community Service**  
   11638 Whittier Ave  
   Detroit, MI 48224  
   Phone: (313) 371-3930

4. **Trinity Food Pantry**  
   4849 W. Outer Dr.  
   Detroit, MI 48235  
   Phone: (313) 342-2288

5. **St. Vincent de Paul Food Pantry**  
   4311 Central Street  
   Detroit, MI 48210  
   Phone: (313) 841-0783

6. **St. Paul United Methodist**  
   8701 W. 8 Mile Rd  
   Detroit, MI 48221  
   Phone: (313) 342-4656

7. **St. Patrick Food Pantry**  
   58 Parsons Street  
   Detroit, MI 48201  
   Phone: (313) 833-7080

8. **St. Jude Catholic Parish Food Pantry**  
   15889 East Seven Mile Rd  
   Detroit, MI 48205  
   Phone: (313) 527-0380

9. **Spirit of Hope**  
   1519 Martin Luther King Blvd.  
   Detroit, MI 48208  
   Phone: (313) 964-3113

10. **Grab Community Outreach**  
    19264 Conant  
    Detroit, MI 48234  
    Phone: (313) 452-2797

Please note that days of service and hours of operation vary by location. For additional information, please call the associated telephone numbers listed for each location.
References:


