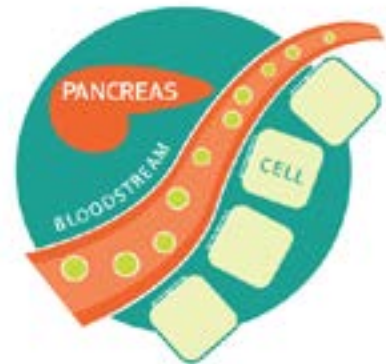


# Diabetes: Don't sugar coat it!

Diabetes is described as having too much sugar (glucose) in the blood. Foods containing carbohydrates (i.e. grains, fruit, starchy vegetables, and dairy products) are broken down during digestion into simple sugars called glucose which is used for energy by the body. Once food is broken down into glucose it enters the bloodstream causing blood glucose levels to rise. As blood glucose levels rise insulin (a hormone) is released by the pancreas. Insulin is like a key to the door of cells in our body. If enough insulin isn't available, or if the insulin has trouble opening cell doors, then blood glucose levels can rise to unhealthy levels. Elevated blood glucose levels over a long period of time can result in diabetes, which is divided into two main categories: type I and type II.

## Type I Diabetes

Type I diabetes occurs when the pancreas is no longer able to make insulin and is the most common form of diabetes in children. With type I diabetes there are no keys (insulin) in the blood to open cell doors. When this happens glucose remains in the bloodstream resulting in high blood glucose (blood sugar) levels. Type I diabetics must take insulin to stay healthy.



Diabetes Research Institute<sup>(1)</sup>



Diabetes Research Institute<sup>(1)</sup>

## Type II Diabetes

Type II diabetes occurs when the the pancreas does not make enough keys (insulin) to open up all the cell doors or the keys aren't working properly and have a difficult time opening cell doors for blood glucose uptake. When this happens glucose cannot move from the blood into the cells. Therefore, glucose remains in the blood stream resulting in high blood glucose (blood sugar) levels.

## Diabetes is one of the most common chronic diseases of childhood.

Between 2001 and 2009 diabetes in youth increased by 21%; an annual increase of 2.3% in type I diabetes incidence has been reported in children less than 5 years old.<sup>(2)</sup> Child care providers are very likely to have one or more children in their care at some point in time who have been diagnosed with diabetes. As child care providers, you have a responsibility to become more knowledgeable and prepared for providing proper care to diabetic children. The following pages include tips for reducing risk of developing diabetes, as well as tips for managing and treating diabetes.

# How can I prevent Diabetes?

Type II diabetes can be prevented by maintaining a healthy weight, eating a healthy and well-balanced diet, and staying active.

**Diet** With rates of chronic diseases such as diabetes on the rise, the 2015-2020 Dietary Guidelines for Americans include recommendations designed to help Americans follow a healthier diet.<sup>(3)</sup> The most recent guidelines focus on the following key points:

## Follow a healthy eating pattern across the lifespan.

The Dietary Guidelines for Americans encourage people of all ages to follow a healthy eating pattern to help achieve and maintain a healthy weight while reducing the risk of chronic diseases such as diabetes. Make a goal to eat a variety of whole vegetables and fruits, grains (at least half of which are whole grains), fat-free or low-fat dairy and/or fortified soybean milk, lean proteins (more plant-based, less meat), and heart-healthy fats every day.

## Focus on variety, nutrient density, and amount.

Following a healthy eating pattern includes choosing a variety of nutrient-dense foods more often and limiting calorie-dense foods. Nutrient-dense foods have many nutrients but relatively few calories, whereas calorie-dense foods are high in calories and low in nutrients. Carrots for example are nutrient-dense and potato chips are calorie-dense. Include a variety of fruits and vegetables in meal plans to ensure you and your children are getting all the important nutrients needed to stay healthy. Aim to fill half of the plate with non-starchy veggies, one-quarter with lean protein, and one-quarter with starchy foods like whole grains and corn.



## Limit calories from added sugars and saturated fats, avoid trans-fats, and reduce sodium intake.



Diets high in added sugar and saturated fat can make it hard to meet nutrient needs while staying within recommended calorie limits. Examples of added sugars include brown sugar, maple syrup, dextrose, fructose, glucose, high-fructose corn syrup, agave, and honey. Limiting foods and beverages that contain added sugar is especially important for diabetics because added sugar can lead to undesired spikes in blood glucose levels. Following a meal plan that limits the amount of added sugar, saturated fat, trans-fat and sodium is part of the Dietary Guidelines for improving health and reducing chronic diseases like cardiovascular disease (CVD) and diabetes.

## Support healthy eating patterns for all.

From home to school to work to communities, everyone has a role in helping to create and support healthy eating patterns. As a child care provider, you have an important role in cultivating and supporting healthy eating patterns in children. You can do this by following the Dietary Guidelines, encouraging children to try new foods, exploring healthy cooking methods, and involving children in meal preparation.

## Physical Activity



Children and adolescents are recommended to do at least 60 minutes (1 hour) of daily physical activity. Try different types of exercise to help keep it interesting. Most of the 60+ minutes a day should be either moderate- or vigorous-intensity aerobic physical activity and should include vigorous-intensity physical activity at least 3 days a week. Examples of aerobic exercise includes walking, swimming, bicycling, tennis, and dancing. As part of the 60+ minutes of daily physical activity children and adolescents should include muscle-strengthening and bone-strengthening activities such as running, jumping rope, doing sit-ups, and lifting weights on at least 3 days of the week. Encouraging young people to participate in physical activities that are enjoyable and appropriate for their age is so important and helps instill healthy habits for life.

## How can I manage and treat my diabetes?

### Blood Glucose Testing

Checking blood glucose levels is the main way to see how well diabetes is being controlled. Before a meal recommended blood glucose levels fall within a range of 80-130 mg/dL. One to two hours after the beginning of a meal the target blood glucose level is less than 180 mg/dL.<sup>(4)</sup> Checking blood glucose levels is simple with the use of a meter.



1. WASH HANDS AND INSERT TEST STRIP INTO METER.
2. USE LANCING DEVICE ON THE SIDE OF YOUR FINGERTIP TO GET A DROP OF BLOOD.
3. TOUCH AND HOLD THE EDGE OF THE TEST STRIP TO THE DROP OF BLOOD AND WAIT FOR THE RESULT.

## Medications

People with type I diabetes must use insulin. Some people with type II diabetes are able to manage their diabetes with a balanced diet and exercise. However, in some cases the doctor may prescribe oral medications and/or insulin to help meet target blood glucose levels. Following instructions and taking medications as prescribed by the doctor is important in order to maintain healthy blood glucose levels.



# Insulin

More than 20 types of insulin are sold in the U.S. The doctor will help find the type of insulin that works best for each individual on a case-by-case basis.



**Rapid-acting insulin** begins to work about 15 minutes after injection, peaks in about 1 hour, and continues to work for 2 to 4 hours. Types: Insulin glulisine (Apidra), insulin lispro (Humalog), and insulin aspart (NovoLog)

**Regular or Short-acting insulin** usually reaches the bloodstream within 30 minutes after injection, peaks anywhere from 2 to 3 hours after injection, and is effective for approximately 3 to 6 hours. Types: Humulin R, Novolin R

**Intermediate-acting insulin** generally reaches the bloodstream about 2 to 4 hours after injection, peaks 4 to 12 hours later, and is effective for about 12 to 18 hours. Types: NPH (Humulin N, Novolin N)

**Long-acting insulin** reaches the bloodstream several hours after injection and tends to lower glucose levels fairly evenly over a 24-hour period. Types: Insulin detemir (Levemir) and insulin glargine (Lantus)

**Combination Therapy** In some cases doctors may find that combination therapy is best for managing diabetes. This consists of combining therapies such as oral medications, and insulin treatment.

## Resources

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6. Caspero, A., Green Monster Popsicles. Retrieved from <http://www.foodandnutrition.org/September-October-2014/4-Kid-Friendly-Recipes/>
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# Cheesy Cauliflower Tots

Revised Recipe <sup>(5)</sup>

- 1 head cauliflower, trimmed
- 1 egg
- 1 egg white
- 4 oz reduced-fat sharp cheddar, shredded
- 1/3 cup breadcrumbs
- 2 scallions, minced
- 1/2 tsp salt
- fresh-ground black pepper to taste



Photo: American Diabetes Association

## Instructions

1. Preheat the oven to 400 degrees F. Coat one large baking sheet with cooking spray. Set aside.
2. Steam the cauliflower for 10-12 minutes or until soft. Set aside to cool. Once cool, mince the cauliflower and stir the remaining ingredients into the minced cauliflower, and let the mixture rest for 10 minutes.
3. After resting, stir the mixture again. Scoop cauliflower with a tablespoon measure onto the sprayed baking sheet. Form the ball into the shape of a tater-tot. Repeat to make 36 tots.
4. Spray the top of each tot with cooking spray. Bake for 15 minutes. Turn the tots and bake an additional 10 minutes or until golden brown.

## Crediting Information:

Recipe serves six 3-5 year olds (Snack):

Creditable Serving Amount of Each Food Group:

Milk: 0.00

Fruits/Vegetables: 2.00

Grains: 0.00

Meat/Meat Alternate: 1.00

# Green Monster Popsicles

Revised Recipe <sup>(6)</sup>

- 4 kiwifruits, peeled and roughly chopped
- 1 cup 100-percent white grape juice
- 1/2 cup seedless green grapes
- 1/2 cup frozen green peas



Photo: Food and Nutrition Magazine

## Instructions

1. Place ingredients into a high-powered blender and puree until smooth.
2. Pour into popsicle molds.
3. Freeze for 4 to 6 hours or until frozen through and serve as a refreshing treat!

## Crediting Information:

Recipe serves six 3-5 year olds (Snack):

Creditable Serving Amount of Each Food Group:

Milk: 0.00

Fruits/Vegetables: 1.00

Grains: 0.00

Meat/Meat Alternate: 0.00





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