A basic guide for

Managing Your Child's Diabetes

Parent Handbook

For Type 1 Diabetes

KAISER PERMANENTE®

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- Glucose meter, testing supplies, glucagon emergency kit, insulin, and syringes.
- Prescriptions for all diabetes supplies will be sent to the pharmacy. Fill your prescriptions before leaving the medical facility.

Diabetes Support Team

Diabetes Clinic

Your Pediatric Diabetes Team includes a:

- Pediatric Endocrinologist
- Certified Diabetes Educators (Nurse Practitioner, Registered Nurse, Dietitian)
- Pediatric Social Worker

You will be scheduled with the Pediatric Diabetes Team soon after diagnosis. Please bring with you:

1. Your child's blood glucose logbook and daily food diary
2. The blood glucose meter
3. School forms, and
4. Any questions or concerns you may have.

Calling the Diabetes Team

You should keep in touch with the Diabetes Team for the first few weeks after diagnosis. A doctor or diabetes educator will review your child's blood glucose. He or she will help you determine how much insulin you will be giving your child every day.

It is normal for insulin doses to change from day to day right after being diagnosed with diabetes. The blood glucose will eventually come down into the target range and you will not need to call as often.

When you begin to feel comfortable, call the Diabetes Team as needed for illness, high and low blood glucose levels, or questions. When calling, please have the following information ready:

- Insulin doses for the last 24 hours
- Blood glucose readings for the last 24-48 hours
- Changes made to the meal plan (adding or subtracting carbohydrate grams)
- Any exercise or physical activity done in the last few days
- Any illness and/or new medications in the last few days

Phone numbers

Pediatric Endocrinology Department (Mapunapuna)……808-432-2000
Diabetes nurse educator (non-urgent messages only)……..808-432-5735
After-hours advice……..808-432-7700
For emergencies, call 911 or go to the nearest Emergency Room.

What is Diabetes?

Type 1 Diabetes Mellitus is a condition in which the body does not produce the hormone insulin. The pancreas is an organ that sits inside the abdomen. Special cells in the pancreas called “beta cells” or “islet cells” make insulin. Insulin is a hormone that allows the body to use glucose (sugar) for energy.

Glucose comes most rapidly from the carbohydrates (carbs) in the foods we eat. Without insulin, glucose builds up in the blood stream. In Type 1 Diabetes, insulin must be given for the body to use glucose.

How do you get Diabetes?

We know that Type 1 Diabetes is not contagious, like a cold. We also know that it is not caused by eating too much sugar. The exact cause is not fully understood but 3 risk factors seem to be important:

- Inherited or genetic factors
- Self-allergy (autoimmunity)
- Environmental damage such as from a virus or chemical

Currently, there is no proven way to prevent or delay the start of Type 1 Diabetes.

Symptoms of Diabetes

The symptoms of diabetes include:

- ❖ Increased/uncontrollable thirst
- ❖ Increased or decreased hunger
- ❖ Increased urination
- ❖ Bedwetting or increased urination at night
- ❖ Mood changes
- ❖ Weight loss
- ❖ Dizziness
- ❖ Headaches
- ❖ Blurry vision
- ❖ Fatigue

Treatment of Type 1 Diabetes

Type 1 Diabetes requires treatment with **insulin which is given as an injection**. A person with this type of diabetes cannot take a pill to control it. On the other hand, Type 2 Diabetes can often be treated with pills. For more information about Type 2 Diabetes, go to **kp.org/diabetes.**

Blood Glucose Testing

You will be testing your child's blood glucose at home using a blood glucometer and test strips. Your child will be given a glucometer and instructions on how to use it before you leave the medical facility.

Blood glucose levels should be checked at least 4 times a day and as needed when symptomatic:

- **Before breakfast**
- **Before lunch**
- **Before dinner, and**
- **At bedtime**
- **Between 2-3 a.m. (during the first few weeks after diagnosis or dose change)**
- **As needed, for example, during illness or vigorous exercise**

Blood Glucose and the "Target Range"

There are many factors that affect blood glucose levels including:

- ❖ Length of time since diagnosis
- ❖ Illness
- ❖ Type/amount of carbs eaten
- ❖ Medications
- ❖ Stress
- ❖ Exercise
- ❖ Puberty
- ❖ Sleep

The following blood glucose levels are ideal:

Fasting and Before Meals	2 Hours After the Start of Meals	Bedtime
80-130	Under 180	110-150

It takes time to get blood glucose levels to fall into this range. Initially, there may be a lot of fluctuation. Please be patient and continue to work with your Diabetes Team.

At diagnosis, insulin requirements may be very high, and your Diabetes Team may change it daily. Insulin dosage is determined by:

- Current blood glucose level
- Age

- Weight
- Meal plan

Hemoglobin A1C (HbA1C or A1C)

Longer term blood glucose control can be monitored by a measurement called Hemoglobin A1C (HbA1C). The HbA1C reflects your average blood glucose level over the past 90 days. This test is usually done every 3-6 months before your child's doctor visit.

Target A1c for children under 18 years of age is less than 7.5 percent.

Insulin

How does insulin work?

Our diet consists of carbohydrates (carbs), fats, and proteins. Carbs breakdown into sugar molecules or glucose. The pancreas senses the blood glucose and releases insulin. The insulin allows glucose in the blood to enter the body's cells where it can be used for energy.

In Type 1 Diabetes, little to no insulin is made by the pancreas. Without insulin, the body cells cannot use glucose and it remains in the blood stream. Glucose is then eliminated in the urine (normally void of glucose) which causes increased thirst, urination, and possible dehydration.

Insulin dose

The insulin dose is unique to each child. In time, you will learn how to adjust your child's insulin doses but for now, you may need help.

Once your child has been discharged from the medical facility, you will need to contact your Diabetes Team. Be prepared to provide the current insulin doses along with blood glucose readings from the previous 48-72 hours for help with insulin does adjustments.

Types of insulin

There are many different types of insulin.

- “Rapid-acting”
- "Short-acting"
- "Intermediate-acting"
- "Long-acting"

Action	Class	Insulin	Onset	Peak	Duration
Bolus	Rapid acting	Aspart (Fiasp)	2.5 minutes	60 minutes	3-5 hours
Bolus	Rapid acting	Aspart, Lispro, Glulisine (Novolog, Humalog, Apidra)	5-15 minutes	30-90 minutes	<5 hours
Bolus	Short acting	Regular	30-60 minutes	2-3 hours	5-8 hours
Basal	Intermediate	NPH	2-4 hours	4-10 hours	10-16 hours
Basal	Long acting	Determir (Levemir)	3-8 hours	None	6-24 hours
Basal	Long acting	Glargine (Lantus/Basaglar)	2-4 hours	None	20-24 hours
Basal	Long acting	Degludec (Tresiba)	1 hour	None	<42 hours

How often is insulin given?

People with Type 1 Diabetes usually require three or more injections of insulin per day. This is sometimes referred to as MDI or **Multiple Dose Injection Therapy**.

The most common regimen consists of a long-acting (basal) insulin dose injected 1-2

times a day, plus a short- or rapid-acting (bolus) insulin dose injected before each meal and as needed to treat high blood glucose. The amount of short- or rapid-acting insulin given before eating will depend on the carbohydrate content of the meal or snack.

Insulin storage

- Insulin should be stored in the **refrigerator** and warmed to room temperature 5–10 minutes prior to giving the injection. This makes the insulin less likely to sting, burn or leave a red spot.
- Avoid storing insulin at room temperature. Doing so may decrease its potency.
- Keep insulin away from direct sunlight.
- Insulin will not work correctly if it gets above 86ºF (30ºC) or if it freezes.
- **Throw insulin vials and pens away after being open/used for 30 days**.

Insulin Injections

How to prepare and give insulin:

NOTE: Before injecting insulin, take the bottle out of the refrigerator and let it warm to room temperature (5-10 minutes).

Step 1: Gather your supplies.

Step 2: Wash your hands.

Step 3: Flip the cap off the bottle and clean the top with alcohol.

Step 4: Remove the cap on the insulin syringe and pull back on the plunger. Draw air equal to amount of insulin dose that will be given.

Step 5: Inject the air in the syringe into the bottle.

Step 6: Turn the bottle upside down and draw the prescribed insulin dose. *To avoid getting bubbles, slowly draw some insulin into the syringe and push it back into the bottle quickly, then draw the correct insulin dose.

Step 7: Remove the needle from the insulin bottle.

Step 8: Prepare to give injection.

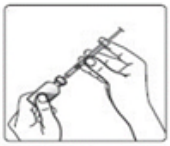
a. Clean the site with alcohol
b. Gather the skin and inject the insulin at a 45-degree angle. Once the needle is in the skin, push the plunger to deliver the insulin dose.
c. Slowly count to 5 before removing the needle to prevent insulin leakage.
d. Remove the needle from the skin and dispose of it in the designated container.

NOTE: DO NOT rub the injection site. There is no need for an adhesive bandage.

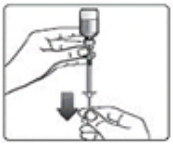
Step 3

Step 4

Step 5



Step 6



Step 7

Step 8

Using an Insulin Pen

Prepare pen

1. Remove pen cover or cap.
2. Pull the paper tab off the pen needle.
3. Screw the needle onto the insulin end of pen.
4. Remove the outer needle cover.
5. Remove the inner needle cover so the needle is exposed.
6. Throw the inner needle cover in the trash.

Prime pen <u>before each use</u>

Priming the pen and clearing air from the needle is important for accurate insulin dosing.

1. Turn the dose selector knob at the end of the pen to 2 units (equals 2 clicks).
2. Hold the pen with the needle pointing upward.
3. Press the dose knob down completely. You should see an insulin drop or stream appear.
4. Repeat, if necessary, until insulin is seen at the needle tip.

Dial in the dose

1. Turn the dose knob to "dial in" your insulin dose. The pen will allow you to receive only the amount of insulin you have selected.
2. Count the clicks and double-check the window to make sure you have the proper dose.

Injecting insulin

1. Curl your fingers around the upper end of the pen to hold it securely.
2. With your free hand, gently pinch up your skin.
3. Quickly insert the needle at a 90-degree angle.
4. Release the pinch.
5. Use your thumb to press down on the dose knob until it stops (the dose will go back to zero in the window).
6. Leave the needle in place for 5-10 seconds. This helps prevent insulin from leaking out of the injection spot.

Prepare pen for next use

1. Place the outer needle cover over the needle. Twist to remove the needle from the pen.
2. Throw the used needle away in a sharp’s container.
3. Put the pen cover (cap) back on the pen.

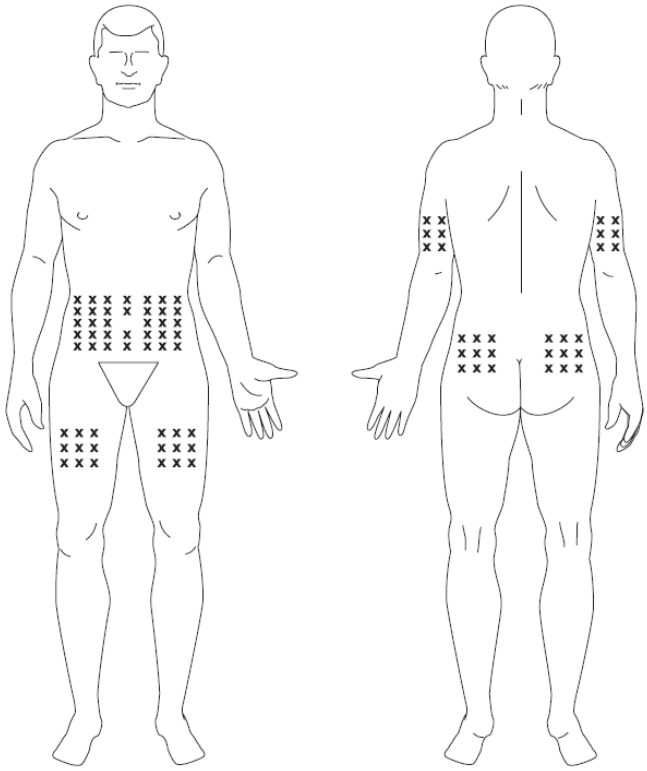
Where should I inject the insulin?

On the front of your child's body there are 2 places where you can inject the insulin:

- Top of the thighs
- Abdomen area – avoid injecting too close to the belly button

On the back of your child's body there are 2 places where you can inject the insulin:

- Top outer area of the buttocks
- Upper arms



NOTE: Each injection needs to be given about 2 finger widths from the last place. Remember to rotate injections sites.

Low Blood Glucose (Hypoglycemia)

What is low blood glucose?
A low blood glucose is less than 70 mg/dl.

What causes low blood glucose?
Low blood glucose is caused by too little food, too much insulin, or extra exercise.

Common symptoms of low blood glucose include:

- ❖ Hunger
- ❖ Sweating
- ❖ Shaking
- ❖ Confusion
- ❖ Dizziness
- ❖ Mood change
- ❖ Headache

How to treat low blood glucose
The goal is to raise your child's blood glucose level quickly to a normal level of 70-150mg/dl.

Step 1. Have your child eat or drink **15 grams** of fast acting sugar:

- 4 ounces of any fruit juice OR
- 4 ounces of regular soda OR
- 3-4 glucose tablets OR
- 1 small tube of cake gel

Step 2. Wait **15 minutes** and retest blood glucose:

- If your child's blood glucose is still under 70mg/dl, repeat step #1 above.
- 2-3 treatments may be needed to get low blood glucose above 70mg/dl.

Step 3. If it's not time to eat a meal: have your child eat a **15-gram** carb snack with protein or fat such as cheese and crackers, peanut butter and bread, or light yogurt.

Step 4. Write down the blood glucose level and how it was treated in your child's logbook. Call the Diabetes Team for help in preventing further low blood glucose levels.

Severe low blood glucose symptoms

- **Loss of Consciousness:** The brain needs glucose to stay awake. When it is not getting enough, it shuts off and goes to sleep.
- **Seizure or Convulsion**

An untreated low blood glucose can become an emergency. PREVENTION is key! Always carry supplies including treatment snacks, with you.

Treating when your child is unconscious or seizing

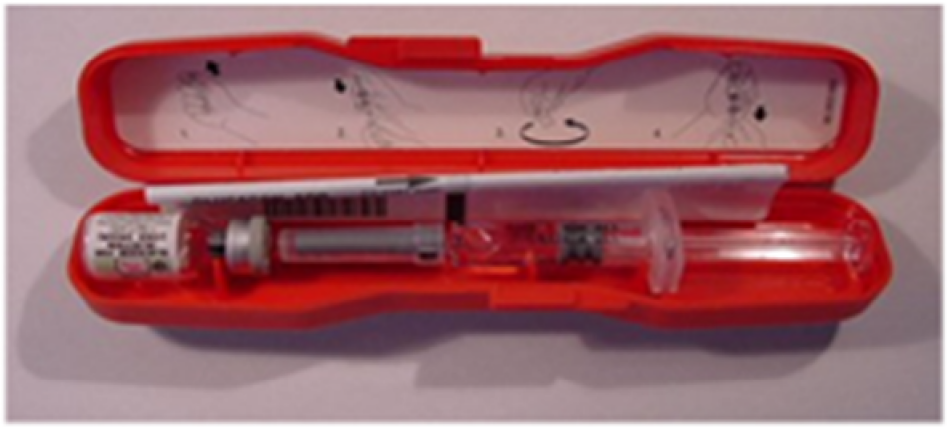
A severe low blood glucose reaction occurs if your child **completely loses consciousness and/or has a seizure**. If this occurs, **do not** attempt to put anything in your child's mouth as they might choke.

Instead, treat with an injection of glucagon. It releases glucose stored in the liver and causes blood glucose to rise quickly. Glucagon can be injected through clothing.

NOTE: A dry glucagon nasal spray (BAQSIMI) was recently approved to treat severe hypoglycemia in children over age 4. Ask your provider about this new form.

Helpful hints for administering glucagon

- Tape a 100-unit insulin syringe to the top of the glucagon box for easy access.
- Once drawn up and mixed, glucagon is stable in the refrigerator for 24 hours.
- Use your expired glucagon kit to practice so that during an emergency you already know how to use it.



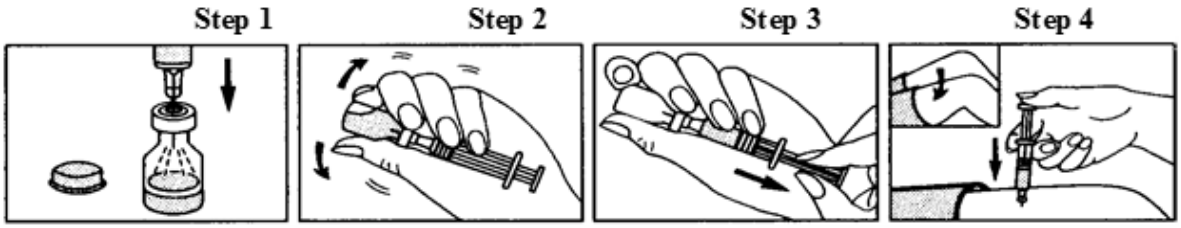
GLUCAGON: for Emergencies

What is glucagon?
Glucagon is an emergency treatment used for severe low blood glucose.

Use glucagon when:

- ☑ Your child's blood glucose is under 70 mg/dl **AND** your child cannot drink juice or eat glucose tabs.
- ☑ Your child is unresponsive because of a severe low blood glucose.

How to Give Glucagon



Do not panic. If you are unable to give glucagon, if there is no response to the glucagon, or if your child has difficulty breathing, call 911 immediately!

After a severe hypoglycemic reaction

- Vomiting may occur. If it does, make sure your child is lying on his or her side and that their head is turned to the side to avoid choking.
- As soon as he or she wakes up, give sips of juice, regular soda, or sugar water to help raise the blood sugar. After 10 minutes, encourage solid food (crackers and peanut butter, 1/2 cheese sandwich, etc.)
- Notify your Diabetes Team about the severe reaction, right away. Your child's insulin dose may need to be adjusted before taking their next insulin injection.

NOTE: Complete recovery may take 1 to 6 hours.

High Blood Glucose (Hyperglycemia)

It is important to recognize how your child may feel or act when they have high blood glucose.

Common symptoms of high blood glucose include:

- Increased thirst
- Flushed, dry skin
- Irritability / behavior changes
- Feeling nauseated
- Increased urination
- Headache
- Blurry vision
- Feeling unusually tired

Causes of high blood glucose

- Illness, infections, colds and flu
- Decreased exercise or activity
- Eating too many carbohydrates
- Puberty / Menstrual cycle
- Insulin that is old or has been exposed to heat
- Not taking enough insulin or missing a dose
- Stress or an emotional upset
- Shots given too frequently in the same spot
- Medications such as steroids

Hyperglycemia is treated with insulin. Adequate hydration is important as well. With prolonged hyperglycemia, ketones may appear in the blood and urine. Ketones are a by-product of fat breakdown. When the body does not have enough insulin to use sugar it will start to breakdown fat as an energy source. This can result in a dangerous condition called DKA or **diabetic ketoacidosis.**

Checking for Ketones in Your Child's Urine

Ketones are made when there is not enough insulin for the body to use sugar for energy.

When to check for ketones in your child's urine:

- ☑ When your child's blood glucose is repeatedly 300mg/dl or higher
- ☑ When your child is sick (e.g., cold, fever, diarrhea, vomiting, or stomach ache)

To check for ketones in your child's urine, follow the instructions below:

NOTE: If your child is not yet potty trained, place 2-3 cotton balls into their diaper to collect urine. Squeeze the urine from the cotton balls onto the test strip.

Once opened, ketone strips are only good for 6 months.

Basic Sick Day Management

Blood glucose, ketones and insulin

While your child is sick, check his or her blood glucose more often (every 2-4 hours). Being sick can often cause high blood glucose levels. On the other hand, vomiting or stomach problems can cause blood glucose to run low.

Check your child's ketones each time your child goes to the bathroom. Keep an accurate record of the ketone levels. If **moderate to large ketones** are present in the urine call for assistance.

If your child is unable to swallow solid foods, have them drink liquid carbs or suck on hard candy to help maintain blood glucose level. If your child has a low blood glucose that does not improve with fast acting sugar, give a **low dose of glucagon injection**:

- Children ages 1-15 years old: Give 1 unit of glucagon per year of age
- Children over 15 years of age: Give 15 units of glucagon

Repeat dose every 20-30 minutes until blood glucose is normal. If mixed and refrigerated, glucagon can be used within 24 hours before it turns into a gel.

Who do you call if your child is sick?

- If your child is unable to eat, call your Diabetes Team for treatment advice. Have the following information ready:
  - Urine ketones
  - Recent blood glucose readings
  - Insulin doses
  - Recent fluid and food intake
- If ketones are moderate or large and vomiting develops, you should take your child to the Emergency Room.

Medications while sick

- It is okay to give common over-the-counter medications such as Tylenol (Acetaminophen), Motrin/Advil (Ibuprofen), Benadryl, and cough medications to treat the symptoms of the illness.
- If your child cannot take pills yet, try to buy sugar-free or diabetic liquid forms of these medications, if available.

NOTE: A yearly flu shot for all children with Type 1 Diabetes is recommended.

School

Below are a few simple things to know and do as you prepare to send your child back to school:

- Notify the school nurse and teacher about the diagnoses. The teacher may want to educate the class about Type 1 Diabetes.
- Set up an appointment with the school to develop an Individual School Healthcare Plan (ISHP), Individualized Education Program (IEP), and 504 Plan to care for your child while at school.
- Have a "school form" signed by your Physician. This gives the school nurse/health clerk specific orders about how the diabetes is to be managed while your child is at school. This form will need to be updated each school year and each time insulin doses change.

- Provide diabetes supplies for school: blood glucose meter, test strips, lancet device, lancets, urine ketone test strips, insulin, syringes, and glucagon.
- Keep extra food and snacks on hand in case a low blood glucose happens at school. This can be as simple as 4-ounce juice boxes, glucose tablets, and prepackaged crackers and cheese.
- Ask for the school menu to help with meal/snack planning.

NOTE: Purchase a Medical ID bracelet for your child and make sure he or she wears it all the time!

Exercise

Exercise is an important component of healthy living. Patients with diabetes should have a plan which includes monitoring of blood glucose, use of snacks, and medication adjustment.

Each person's response to exercise will vary:

- Glucose tends to drop during and after aerobic exercise. (Think of exercise as causing increase insulin sensitivity for the next 12 to 16 hours).
- Anaerobic exercise (short duration, high intensity) may cause rises in glucose during or immediately after.
- You should not exercise if blood glucose is high (>300) and ketones are present.
- Experience is the best teacher, so testing blood glucose frequently - before, during and after exercise - is necessary.
- Always carry a source of sugar (rapid acting carbs) with you.
- Make sure others know and can help in the event of hypoglycemia.

Strategies to prevent hypoglycemia

Eat before exercise. The following general guidelines can vary from person to person.

- Each 15g of carbs will usually last for about 30 minutes of moderate exercise. Adding protein to the carbs consumed will last longer.

Blood Glucose	**Short exercise duration** (15 to 30 minutes)	**Moderate exercise duration** (30 to 120 minutes)	**Long exercise duration** (2 to 4 hours)
Less than 150	Have 15g carbs	Have 30g carbs	Have 15g carbs and full sandwich (30g carbs plus protein)
More than 150	No snack needed	Have ½ sandwich (15g carbs plus protein)	Have full sandwich (30g carbs plus protein)

- You may have to reduce insulin doses before exercise. Remember, rapid acting insulin (Humalog) peaks 90 minutes after the injection.
- Change injection sites: Exercises increases blood flow into the part of the body that is moving, which makes that area take up more insulin. So, do not inject insulin into the arm, for example, if playing tennis right after.

NOTE: Delayed hypoglycemia can happen up to 48 hours after exercise.

Traveling

A few things to remember when traveling with diabetes:

- Your child should always wear the Medical ID bracelet.
- Traveling by plane or by car for long periods of time, may cause your child's blood glucose to rise due to a lack of physical activity.
- When traveling by air have the prescription labels for your child's diabetic supplies, and medication with you. Your child's name must match the name on the prescription labels.
- Travel with extra diabetes supplies such as insulin, syringes, ketone strips, and test strips.
- Keep at least one set of medication and supplies in a carry-on bag. This includes the blood glucose meter, test strips, lancets, insulin syringes, insulin and glucagon.
- Travel with a bottle of water, snacks, and treatment for low blood glucose.
- When traveling to a different time zone ask your diabetes care provider to help adjust the timing and insulin amount to account for the time change.
- Keep the insulin at room temperature. Avoid allowing it to get too warm or to freeze.

Nutrition

When your child has been newly diagnosed with Type 1 Diabetes, it is important to:

- Try to follow a consistent meal plan for the first few weeks
- Avoid all juices, sodas, sugar-sweetened beverages, and concentrated sweets
- Avoid prolonged fasting. Eat 3 meals each day.
- Measure portions of milk, fruit, starches and vegetables
- Plan and prepare snacks including “free food” snacks (see page 29) and bedtime snacks.
- Keep a food diary to show your Diabetes Team.

Most children are **very hungry** for the first couple of weeks after diagnosis. When blood glucose levels begin falling into the target range, your child’s appetite will likely return to normal.

A nutritional diet is important for your child’s health and growth. The 3 main nutrients in food are carbohydrates, protein and fat

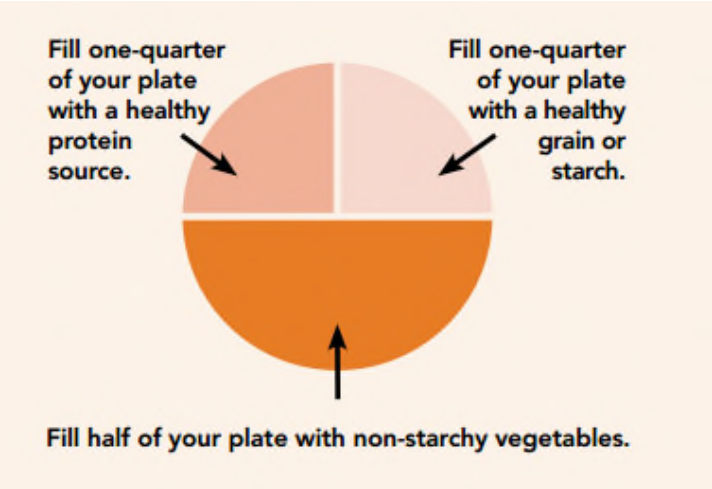
What are carbohydrates?

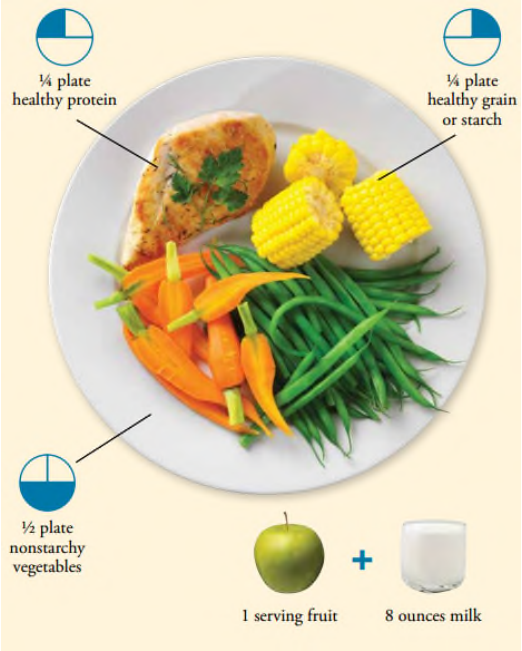
- The main source of energy for the body.
- The nutrient that breaks down quickly and turns into glucose in the body. Glucose is essential for providing energy to the body, especially the heart, the brain and the muscles.
- Carbohydrates are starches and sugars found in:
  - ❖ Fruit
  - ❖ Milk
  - ❖ Some vegetables
  - ❖ Starchy foods such as bread, pasta, rice, cereal tortilla, potato, corn, snacks
- About half of your child’s daily calories should come from carbohydrates.

Eating to Live Well

The Healthy Plate

Divide your child's plate in half, then divide one of the halves down the middle. Your child's plate should look like this:





- In the largest section of the plate, put non-starchy vegetables such as broccoli, spinach, green beans or carrots.
- In one of the smaller sections, place starches and starchy vegetables. Choose whole grains and foods in their purest form for the most fiber and nutrients.
- Put lean and healthy protein in the other small section.
- Add 1 cup of non-fat milk*, 1 small piece of fruit, and a green salad to have a complete meal.
- Use the portion sizes listed below to control the carbohydrates your child eats.

NOTE: If your child does not drink milk, talk to a dietitian about foods your child can use to make sure he or she gets enough calcium and protein.

Carbohydrate Counting

- Read food labels **(1 carb = 15 grams total carbohydrate)**
- Measure portions with measuring cups and/or scales

Carb count in homemade and restaurant foods

When a nutrition label is not available, use your preferred search engine (e.g. Google, Bing) to find nutrition information online. Enter the key words "nutrition information for (the name of the food you are looking for)" You can also check out these helpful websites:

- Calorie King **calorieking.com**
- USDA Food Data Central **fdc.nal.usda.gov**
- American Diabetes Association **diabetesfoodhub.org**

Eat a variety of foods and choose foods that are less processed. The following are some examples of carb servings.

Starch	
Guidelines: • No more than 2-3 servings per meal • Eat more beans and peas, choose whole grains most of the time • Low in fat, salt, and sugar	
1 choice = 15 grams of carbs / 80 calories	
Food	**Serving size**
Arare	¼ cup
Bagel	¼ large
Beans, baked	1/3 cup
Beans, peas, corn	½ cup
Biscuit, 2½-inch	1
Bread	1 slice
Bread, reduced calorie	2 slices
Breadfruit	¼ cup
Cereal, bran	½ cup
Cereal, unsweetened	¾ cup
Cereal, cooked	½ cup
Crackers, saltine	6
English muffin	½
Graham crackers	3 squares
Hot dog or hamburger bun	½
Lentils	½ cup
Mochi 1"x1"x3"	1

Pancake or waffle, 4-inch	1
Pasta, cooked	1/3 cup
Pasta sauce	½ cup
Pita bread, 6-inch	½
Poi	½ cup
Popcorn, reduced fat	3 cups
Potato, baked	¼ large
Potato, mashed	½ cup
Pretzels or baked chips	¾ oz
Rice, cooked	1/3 cup
Soup, broth-based	1 cup
Squash: winter, acorn, butternut	1 cup
Taro	1/3 cup
Tortilla, 6-inch	1
Yam or sweet potato	½ cup

Fruit

Guideline:

- At least 3 choices a day, 1 serving per meal
- Whole fruits more often than juices, eat edible peelings for fiber
- Choose fruits without added sugar, sweeteners, or syrups

1 choice = 15 grams of carbs / 60 calories

Food	Serving size
Apple	1 small
Apricots	4
Banana	1 extra small
Blackberries or blueberries	¾ cup
Canned fruit, unsweetened	½ cup
Cantaloupe	1 cup
Cherries	12
Dried berries, cherries, or raisins	2 Tbsp
Fruit juice	½ cup
Grapefruit	½ large
Grapes	17 smalls
Honeydew melon	1 cup
Kiwi	1 small
Mango	½ cup
Nectarine	1 small
Orange	1 small
Papaya	1 cup
Peach	1 medium
Pear	½ large
Pineapple, fresh	¾ cup
Plums	2 smalls
Raspberries	1 cup
Strawberries	1¼ cup

Tangerines	2 smalls
Watermelon	1¼ cup

Milk

Guideline:

- 2 choices a day of non-fat or low-fat milk or yogurt
- Choose unsweetened or artificially sweetened soy milk and low sugar nondairy yogurt

1 choice = 12 grams of carbs / 90-120 calories

Food	Serving size
Milk, regular, lactose-free, or soy (unsweetened)	1 cup
Chocolate or evaporated milk	½ cup
Yogurt, low-fat, sweetened	1/3 cup
Yogurt, plain or light	6 oz

Non-Starchy Vegetables, Proteins and Fats

- Does not usually have a lot of carbs so raises blood glucose very little.
- A combination of veggies, proteins and fats at each meal helps slow down how fast the carbs turn into sugar.
- Foods high in saturated fats can affect glucose levels and insulin requirements.
- Choose unsaturated fats, plant proteins, and lean meats to keep your heart and blood vessels healthy and protect your cells.

Fat

Guidelines:

- Limit to 3-5 servings a day due to high calorie count
- Avoid saturated and trans fats

Unsaturated

Food	Serving size
Almonds	6 nuts
Avocado	2 Tbsp
Cashews	6 nuts
Margarine, trans fat-free	1 tsp
Mayonnaise, light	1 Tbsp
Mayonnaise, regular	1 tsp
Nut butter, trans fat-free	½ Tbsp
Oil: Canola, Corn, Flaxseed, Grape seed, Olive, Peanut, Soybean	1 tsp

Olives, black	8 large
Peanuts	10 nuts
Pecans	4 halves
Pistachios	16 nuts
Salad dressing, regular	1 Tbsp
Seeds: Chia, Flax, Pumpkin, Sunflower, Sesame	1 Tbsp
Walnuts	4 halves
Saturated	
Food	**Serving size**
Bacon	1 slice
Butter	1 tsp
Coconut	2 Tbsp
Coconut milk	1½ Tbsp
Coconut oil	1 tsp
Cream: Half and Half, Sour cream	2 Tbsp
Cream cheese	1 Tbsp
Lard	1 tsp
Trans Fat (Hydrogenated oils)	
Food	**Serving size**
Shortening	1 tsp
Margarine	1 tsp
Protein / Meat	
Guidelines: • 4-6 servings a day or palm size per meal • Trim off visible fat or skin, limit high-fat meats and choose fish or lean meats most of the time • Bake, broil, or roast instead of frying	
Lean (3 grams or less fat per oz)	
Food	**Serving size**
Heart healthy:	
Beans, lentils, cooked (counts as 1 starch and 1 protein serving)	½ cup
Canned tuna, salmon, sardines, drained	1 oz
Others:	
Beef: Ground (93-95% lean), Roast (chuck, rib, rump), Steak (cubed, flank, round, sirloin, tenderloin, tri-tip)	1 oz
Cheese, low-fat	1 oz
Cottage cheese	¼ cup
Egg substitute	¼ cup
Egg whites	2
Sandwich meats preferably uncured including: Turkey, Ham	1 oz
Pork, loin cut	1 oz
Poultry, without skin including ground turkey	1 oz
Seafood including: Fish, Fishcake, Poke, Tako, Shrimp, Shellfish, Squid (Ika)	1 oz

Medium fat (4-7 grams fat per oz)	
Food	**Serving size**
Heart healthy:	
Peanut butter, no hydrogenated oil	1 Tbsp
Saba (Mackerel)	1 oz
Tofu	½ cup
Others:	
Beef: Ground (80% lean), Pipikaula, Steak (New York, Porterhouse, T-bone)	1 oz
Cheese: Feta, Mozzarella, reduced fat	1 oz
Egg	1
Pork: Char siu, Cutlet, Ground, Kalua, Shoulder roast	1 oz
Poultry with skin	1 oz
Sausage, chicken (fat varies)	1 oz

High fat (8+ grams fat per oz)	
Food	**Serving size**
Beef, rib eye	1 oz
Cheese, regular	1 oz
Chicken wing	2 pieces
Processed sandwich meats: Bologna, Hard salami	1 oz
Hot dog, most sausages	1 oz
Kalbi or rib meat	1 oz
Peanut butter	1 Tbsp

Non-Starchy Vegetables

Guideline:

- At least 4-5 servings a day
- Choose vegetables without sauces, fats, or salt
- A serving is 1 cup raw or ½ cup cooked

Artichoke	Eggplant	Pea Pods
Asparagus	Green Beans	Peppers
Beets	Greens	Radishes
Bell peppers	Kale	Sauerkraut
Bok choy	Luau leaves	Spinach
Broccoli	Marungay	Tomatoes
Cabbage	Mushroom	Turnips
Carrots	Mustard cabbage	Water chestnuts
Cauliflower	Okra	Won bok
Celery	Onions	Zucchini
Cucumbers	Pak choy	

Free Foods

Foods labeled “diet” or “sugar free” contain artificial sweeteners which can cause blood glucose to rise. You may want to limit them for your child.

<table>
<tr><th colspan="2">Free Foods</th></tr>
<tr><td colspan="2">Guidelines:
Limit to 3 servings a day but not all at once</td></tr>
<tr><td colspan="2">1 serving = 5 grams carbs or less / less than 20 calories</td></tr>
<tr><th>Snacks</th><th>Veggies</th></tr>
<tr><td>Cheerios, ¼ cup
Cheese, 2 ounces
Microwave popcorn, low-fat, 1 cup
Nuts, 1 ounce
Olives, 15 mediums (60 calories)
Oyster crackers, 8 smalls
Rice cakes, 2 minis
String cheese, 2 sticks</td><td>Raw veggies, 1 cup including:
Red pepper strips
Jicama
Cherry tomatoes
Cucumbers
Baby carrots
Raw veggies (1 cup) with 1 tbsp hummus or guacamole
1 large stalk celery or 5-10 pieces of celery
1½ medium dill pickles</td></tr>
<tr><th>Condiments</th><th>Fruit and other sweets</th></tr>
<tr><td>Barbeque sauce, 2 tsp
Cream cheese, 1 Tbsp
Ketchup, 1 Tbsp
Mayonnaise, 1 Tbsp
Margarine, 4 Tbsp
Non-dairy liquid creamer, 1 Tbsp
Salad dressing, 1 Tbsp
Sour cream, 1 Tbsp</td><td>Blueberries, ¼ cup
Cantaloupe cubes, 1/3 cup
Raspberries, 1/3 cup
Sugar-free fruit flavored popsicle
Sugar-free hard candy
Sugar-free jam, 2 Tbsp
Watermelon cubes, 1/3 cup</td></tr>
<tr><th colspan="2">Drinks</th></tr>
<tr><td colspan="2">Diet V-8 Splash, 1-2 cups
V-8 juice, ½ cup
Unsweetened Almond Milk, ½ cup (40 calories or less)</td></tr>
<tr><th colspan="2">The foods listed below may be eaten in any amount anytime during the day</th></tr>
<tr><td>Broth or bouillon
Club soda or seltzer water
Herbs
Lemon juice
Mustard</td><td>Non-stick cooking spray
Salad greens, plain or with balsamic vinegar
Spices
Water</td></tr>
</table>

Information adapted from “Food Groups and Serving Sizes: Carbohydrate Choices” 2015 Kaiser Permanente HEDMC-314. Center for Healthy Living – Downey Service Area

Sample meal plan for a 9 to 13-year old girl

- 600 calories
- 45-60 grams of carbs at each meal

BREAKFAST (7 a.m.)	
3-4 carb choices (45-60g carb)	¾-1½ cups of Cheerios = 15-30g carb 1 cup low-fat 1% milk = 15g carb ½ small banana = 15g carb
1 serving protein	1 egg OR 1 Tbsp natural peanut butter
1 fat serving	1 tsp olive oil (to cook egg in); fat not needed if using peanut butter
AM SNACK: 1 serving from Free Food List	

LUNCH (12 noon)	
3-4 carb choices (45-60g carb)	2 whole grain bread = 30g carb 17 small OR 15 large grapes = 15g carb 1 cup low-fat 1% milk = 15g carb
1 non-starchy vegetable (5g carb)	½ cup baby carrots
3 servings protein	2 oz turkey + 1 oz low-fat cheese
1 fat serving	1 Tbsp salad dressing
PM SNACK: 1 serving from Free Food List	

DINNER (5-6 p.m.)	
3-4 carb choices (45-60g carb)	1/3-2/3 cup brown rice = 15-30g carb 1 cup 1% milk = 15g carb ½ cup fresh fruit = 15g carb
1 non-starchy vegetable (5g carb)	½ cup cooked broccoli
3 oz. protein	3 oz chicken breast, no skin
1 fat serving	1/6 avocado
BEDTIME SNACK (as needed)**:** • Blood glucose less than 100 = 30g carb snack • Blood glucose 100-130 (150 under 10 years old) = 15g carb snack	

Reading a Food Label

Knowing how to read a food label is important. For foods that come in packages, the best place to find the carbohydrate count is on the **Nutritional Facts** panel. When you are counting carbs, there are two things that you should focus on, serving size and total carbohydrates.

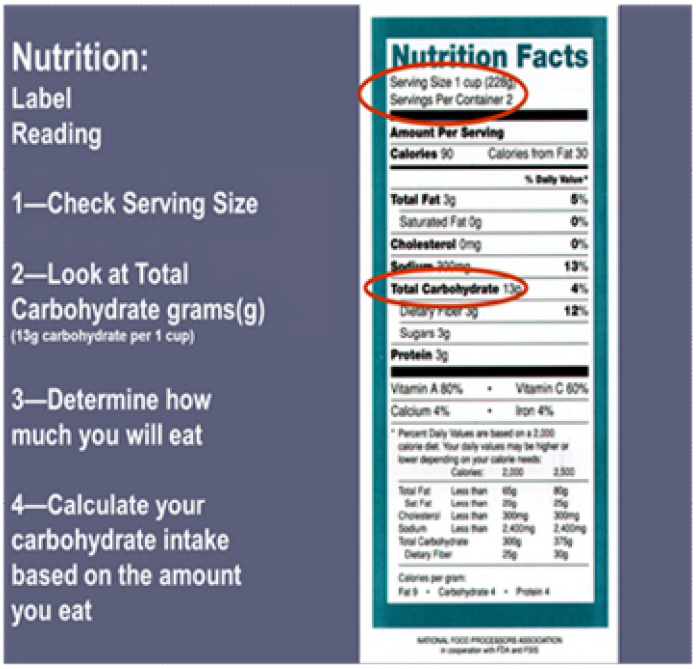
Serving size

The nutrition information on the label, including the "Total Carbohydrate", is based on **one serving**. Look at the serving size first. How many servings are in the package? The serving size may be different from the amount you should eat to control your blood glucose.

Total carbohydrate grams

"Total Carbohydrate" is on all labels in bold letters. Look for the number with the "g" (grams) next to it and not the percent ("%"). Sugars are included in the Total Carbohydrate value. So, you do not need to count the sugar separately. Remember, every 15 grams of Total Carbohydrate is equal to 1 carb serving.

Check your child's meal plan to know how much carbs your child can eat during a meal or at snack time. Remember, Sugar-Free and No Sugar Added does not mean the food does not have carbs. Always look at the **Total Carbohydrate** count to know for sure.



Daily Schedule

		Comments
Before Breakfast _____**AM**	1. Check blood glucose 2. Inject **Humalog:** _____units 10 minutes before breakfast (see Humalog scale) 3. Eat breakfast (_____ grams of carbs)	
Before Lunch _____**AM/PM**	1. Check blood glucose 2. Inject **Humalog:** _____units 10 minutes before lunch (see Humalog scale) 3. Eat lunch (_____ grams of carbs)	
Dinner _____**PM**	1. Check blood glucose 2. Inject **Humalog:** _____units 10 minutes before dinner (see Humalog scale) 3. Inject **Lantus**: _____ units 4. Eat dinner (_____ grams of carbs)	
Bedtime _____**PM**	1. Check blood glucose 2. If blood glucose is less than 100: give a 15 to 30-gram carb snack with protein or fat (no insulin needed) 3. If the blood glucose is high, give **Humalog** (see Humalog scale) 4. Inject Lantus: _____ units	
2 AM	1. Check blood glucose, at this time, after initial diagnosis and during times of changing routine (such as illness, increased activity, an insulin dose change, etc.) 2. If the blood glucose is less than 100: give a 15 to 30-gram carb snack with protein or fat	

Notes

Kaiser Permanente does not endorse the medications or products mentioned. Any trade names listed are for easy identification only.