

CARBOHYDRATE (CHO) recommendations – (1 CHO = 15 Grams)

- Diabetics on Insulin: Modify to Low-Fat/High-Fiber diet if child is Overweight –Use hearts on DM menu

Type 1 Diabetes Diet [Age-years]	Breakfast	10 AM Snack	Lunch	3 PM Snack only with am NPH	Dinner	9 PM Evening Snack with Lantus at dinner
Toddler [1-4 yr] 1200-1500 Kcal	2-3 CHO (30-45 grams)	Per Endo	2-3 CHO	1-2 CHO (15-30 grams)	2-3 CHO	<u>BG > 130 None</u> <u>BG < 130 1 CHO</u>
School [5-10 yr] 1500-1800 Kcal	3-4 CHO (45-60 grams)	Per Endo	3-4 CHO	1-2 CHO (15-30 grams)	3-4 CHO	BG > 100 None BG < 100 1 CHO
Teen Girl [11-19] 2200 Kcal	4-5 CHO (60-75 grams)	Low Carb	4-5 CHO	1-2 CHO (15-30 grams)	4-5 CHO	BG > 100 None BG < 100 1 CHO
Teen Boy [11-19] 2200-2500 Kcal	5-6 CHO (75-90 grams)	Low Carb	5-6 CHO	1-2 CHO (15-30 grams)	5-6 CHO	BG > 100 None BG < 100 1 CHO

Note: No morning snack reflects use of analog (rapid acting) insulin at breakfast.

If a child is under age 10 and active in the morning at school: Ok to give 10-15 grams CHO 10 AM snack. (Allow 2 hour span between AM snack and Lunch test)

Afternoon snacks with morning NPH are required regardless of activity. A low carb PM snack option granted if patient not on NPH.

If a child is under the age of 5, please give 15 grams of CHO if sugar below 130 mg at bedtime. Also, if patient is active after dinner participating in eve sports, please allow 15 grams of CHO before bed if sugar below 130mg.

- Type 2 Diabetes taking Oral Meds with No Insulin: Low-Fat/High-Fiber**

Type 2 Diabetes Diet [Age-years]	Breakfast	*10AM Snack < 100 Calories	Lunch	*3 PM Snack < 100 Calories	Dinner	9 PM Evening Snack < 100 calories
School [<10 yr] 1500-1800 Kcal	3-4 CHO (45-60 grams)	*Low Carb Lowfat	3-4 CHO	*Low Carb Lowfat	3-4 CHO	*Low Carb Lowfat
Teen Girl [11-19] 2200 Kcal	4-5 CHO (60-75 grams)	*Low Carb Lowfat	4-5 CHO	*Low Carb Lowfat	4-5 CHO	*Low Carb Lowfat
Teen Boy [11-19] 2200-2500 Kcal	5-6 CHO (75-90 grams)	*Low Carb Lowfat	5-6 CHO	*Low Carb Lowfat	5-6 CHO	*Low Carb Lowfat

Note: * CHO snacks not required. Encourage low caloric intake. Per snack: Aim for less than 100 calories and less than 5 grams of carb. Low Calorie/Low Carb options inpatient Non-Starchy Veggies (Veggie Snack Plate, Garden Salad, Vegetable Soup, Carrots, Green Beans, Broccoli), Lite Dressing, Turkey, Tuna, SF Jello, Low-Fat Cheese (1) Serving/day. Created by Lisa Ameer, MSNH, RD, CDE

Popular Diabetes Apps & Tools

The Calorie King-Calorie, Fat and Carb Counter by Allan Borushek, RD. Family can purchase this book from Target or www.calorieking.com. They may also consider carbcards.com. Detailed measuring cups called Nutriportion Measuring Cups may be purchased at www.lorenadrigo.com.

Also recommended a scale that can calculate foods without labels. **This Perfect Portion Scale** can be purchased at **Bed/Bath and Beyond** and **bring your 20% off coupon**.

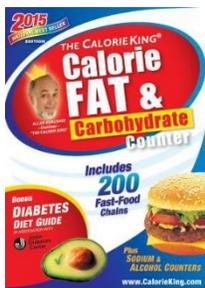
If you want help with delivery cooking programs/recipes that contain calorie and carb counts: Hello Fresh (farm fresh & local), Fresh & Fit, Sun Basket (organic) and Blue Apron are great options.

Apps and Websites for Smart Phones:

- **Calorie King:** Perfect for carb counting more challenging foods or eating out
- **Rapic Calc:** Diabetes calculator for Ratios + correction for blood sugars
- **Carb Guide with Lenny:** Visual carb counter for kids under 10 years old
- **Track 3 for Diabetes:** Very specific with room to track BG + carbs
- **Figwee Portion Explorer:** First visual app that matches Perfect Portion Scale
- **Myfitnesspal:** Calorie/ Carb and exercise counter with bar code scanner
- **Go Meals:** Gives you a balanced plate approach with calories/ protein and fat %
- **Swork it Kids:** 30 second to 30 minute workouts for kids
- **Fooducate:** www.fooducate.com (grades the food brand/ guides best choice)
- **BigOven:** 350,000+ recipes with grocery list
- **Recipe Builder Pro** - calorie and nutrition info calculator & recipe designer
- **Recipenutrition.com**-another website for calculating recipes/carb counts

Rapid Calc: Pre-enter your ratios/ correction factor into this app and it does the rest! Created by Lisa Ameer, MSNH, RD, CDE

Figwee Portion Explorer



Perfect Portions Digital Scale





Rady Children's Hospital: Diabetes Clinic



Carbohydrate Portions Using Measuring Cups

Labels are most accurate. (This handout is used for estimating cooked foods)

- **Use $\frac{1}{4}$ cup to measure the following:**

This portion is 1 CHO exchange= 15 grams of carbohydrates

- Granola
- Hummus
- Trail-mix (Average carb count: mixed with nuts/seeds/chocolate and dried fruits)-
Check label

- **Use $\frac{1}{3}$ cup to measure the following:**

This portion is 1 CHO exchange= 15 grams of carbohydrates

- Rice - cooked
- Pasta: (macaroni, spaghetti, etc)- cooked
- Quinoa, polenta, millet - cooked
- Sweet baked beans such as "Bushes Baked Beans" with Brown sugar
- Plantains
- Fruited yogurt
- Yucca

- **Use $\frac{1}{2}$ cup to measure the following:**

This portion is 1 CHO exchange= 15 grams of carbohydrates

- Oatmeal - cooked
- Sweetened cereal (Check labels, this is an average only)
- Peas
- Unsweetened apple sauce
- Corn
- Potato salad
- Fruits: Canned pears or peaches, fruit cocktail, mango
- Beans, legumes, lentils - cooked
- Potato - mashed or diced
- Sweet potato
- Pumpkin
- Spaghetti marinara sauce
- Orange and apple juice (Used to treat hypoglycemia): (4 ounces= $\frac{1}{2}$ cup)
- Chocolate milk (4 ounces= $\frac{1}{2}$ cup)=15 grams
- Ice-cream: Vanilla or chocolate- (check labels)



Use 1 cup to measure the following:

This portion is 1 CHO exchange= 15 grams of carbohydrates

- Milk
- Plain yogurt
- Winter squash
- Jicama
- Tomato soup
- Chicken noodle or beef pasta soups

Look out!!!

Many people underestimate common foods!!!

• **If you use 1 cup to measure the following:**

This portion is 2 CHO= 30 grams of carbohydrates!!

- Oatmeal - cooked
- Peas
- Unsweetened apple sauce
- Corn
- Potato salad
- Fruits: canned pears or peaches, fruit cocktail, mango
- Beans, legumes, lentils - cooked
- Potato - mashed or diced
- Spaghetti marinara sauce
- Juice or Chocolate milk: (8 ounces= 1 cup) =30 grams
- Ice-cream: vanilla or chocolate –(check labels)



• **If you use 1 cup to measure the following:**

This portion is 3 CHO= 45 grams of carbohydrates!!

- Rice or Pasta – cooked



Nutrition Facts Labels

To count carbohydrates, look at three things:

- Serving Size
- Number of Servings Per Container
- Grams of **Total Carbohydrate** per serving

The total carbohydrate tells how many grams of carbohydrate are in one serving. Be careful when reading the label. There can be more than one serving in the package, so if you eat more than one serving, you will need to multiply the grams of carbohydrate accordingly.

Now let's practice using a sample food label:

Nutrition Facts	
Serving Size 3 pieces (90g)	
Servings Per Container about 3	
Amount Per Serving	
Calories 200	Calories from Fat 50
% Daily Value	
Total Fat 6g	9%
Saturated Fat 0.5g	3%
Trans Fat 0g	
Cholesterol 5mg	2%
Sodium 490mg	20%
Total Carbohydrate 30g	10%
Dietary Fiber 0g	12%
Sugars 2g	
Protein 6g	
Vitamin A 4%	Vitamin C 8%
Calcium 0%	Iron 10%

Serving Size for this product is 3 pieces.

The number in parenthesis shows the **weight**. One serving weighs 90 grams when using a food scale.

There are 3 servings in the whole package.

One serving, which is 3 pieces of this product, provides 30 g of carbohydrate.

Dietary fiber is part of the total carbohydrates. Fiber does not digest so you can subtract the grams of fiber from the total carbohydrate grams.

The grams of sugar are already included in the total carbohydrate count. The natural sugars in milk and fruit, along with added sugars are all grouped together.

- What if you eat more, or less than, one serving? Let's practice with this example label.
- The serving size listed is 3 pieces (or 90 grams if you are weighing the product).
- The grams of total carbohydrate per serving is 30 grams.
- If you eat 6 pieces, that is two servings. You would be getting 60 grams of total carbohydrate (1 serving = 30 grams of total carbohydrate, 2 servings = 60 grams of total carbohydrate).
- Or, if you only eat one piece, then you would only get 10 grams of carbohydrate. (If 3 pieces equals 30 grams of carbohydrate, then each piece must be 10 grams of carbohydrate.)

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**The Following Tables are From Understanding Diabetes
“Pink Panther” Book. 13th Edition.**

**Table 1
Sources of Quick-Action Sugar (Glucose) for Hypoglycemia**

Food (Measured in grams of carbohydrate)	Age		
	5 years or less (10 g)	6-10 years (10-15 g)	Over 10 years (15-20 g)
Glucose Tabs (4 g each –check label; some = 5 g)	2	3-4	4-5
Instant Glucose (1 tube = 31 g)	⅓ tube	⅓ - ½ tube	½ - ⅔ tube
GLUCOSHOT/GLUCOGEL 1 tube (15 g)	⅓	½ tube	1 tube
Cake gel (1 small tube = 12 g)	1 tube	1 tube	1-2 tubes
Apple juice (½ cup = 15 g)	⅓ cup	⅓ - ½ cup	½ - ⅔ cup
Orange juice (½ cup = 15 g)	¼ - ½ cup	½ - ¾ cup	¾ - 1 cup
Sugar (1 tsp = 4 g)	2 tsp	3-4 tsp	4-5 tsp
Honey (1 tsp = 5 g; do not use if child is less than two years old)	2 tsp	2-3 tsp	3-4 tsp
Regular pop (soda) (1 oz = 3 g)	3 oz	4-5 oz	5-6 oz
Milk (12 g/cup)	¾ cup	1 cup	1 ½ cups
LIFE-SAVERS® (2.5 g each)	4	4-6	6-8
Skittles® (1 g each)	10 pieces	10-15 pieces	15-20 pieces
SweetTarts® (1.7 g each)	6 pieces	6-8 pieces	8-12 pieces
Raisins (1 Tbsp = 7 ½ g)	1-2 Tbsp	2 Tbsp	2 ½ Tbsp

g = gram; tsp = teaspoon; Tbsp = Tablespoon

- Glucose Burst works very well too. Small sealed packages of fruit flavored glucose. Order on line or through Amazon.

Low Carb Foods and Snacks

One serving of each of these foods has 5 or less grams of carbs, so be sure to double check the carbs if you have multiple servings

Low Calorie and Low Carb Foods	Low Carb Foods
<ul style="list-style-type: none"> Tofu Chicken (no skin) Rotisserie turkey/deli Tuna in water Egg white Turkey bacon/sausages Low fat cheese (less than 3 g of fat) Salmon & turkey jerky Salsa/chilies Mustard/horseradish Pickles Unsweetened almond milk Sugar free Jello-O 	<p>All nuts and seeds such as: almonds and sunflower seeds</p> <p>Ham</p> <p>Sausages</p> <p>Egg</p> <p>Bacon</p> <p>Regular cheese</p> <p>Beef Jerky</p> <p>Avocado</p> <p>Nut Butters such as: peanut, almond, cashew, sun butter</p>
<p>“Low Carb” doesn’t always mean “low in calories” so make sure to include more lean protein and vegetables.</p>	

Non- Starchy Vegetables	Starchy Vegetables
<p>Celery, cucumbers, carrots, broccoli, cauliflower, asparagus, mushrooms, tomatoes, zucchini, spinach, Italian squash, jicama, chayote, artichokes</p> <p><i>*Try these vegetables: grilled, sautéed, or with a low calorie dressing</i></p>	<p>Butternut squash, peas, potatoes/sweet potatoes, corn, lentils, beans, and pumpkin</p> <p>*1/2 cup of these vegetables = 15 g of carb, 1 CHO</p>

<p>Condiments:</p> <ul style="list-style-type: none"> • Miracle whip • Mayonnaise • Salad Dressings • Cream Cheese • Sour Cream <p><i>*Try light versions of these favorites to decrease calories.</i></p> <p><i>*Double check salad dressing labels for carb content.</i></p>

Low Carb Foods and Snacks

Lettuce Wraps

- Instead of having a taco shell, try using lettuce as a wrap.
- Fill it up with chicken, shredded cheese or tuna salad.
- Remember to add lots of non-starchy veggies!

Tuna Boat

- Cut red peppers in half (boat shape), remove seeds.
- Fill with tuna salad (mixed with Greek yogurt).
- Options to consider: chopped celery, shredded carrots, onion, tomato or any non-starchy vegetables from the front page

Deli Wraps

- Cheese wrapped in turkey or other deli meat.
- You can add avocado for more flavor and healthy fat.

Ants on a Log

- Cut celery in half.
- Spread almond or peanut butter on top.
- Finish with sunflower seeds.

Dip Ideas

- Mix 2 tablespoons of plain yogurt with light sour cream and avocado.
- Add salt and pepper.
- Or you can add other dressing seasoning packets.

Easy Deviled Eggs

- Slice eggs in half lengthwise and carefully remove yolks.
- Mash yolks with mayonnaise.
- Optional: add mustard, salt, and pepper; stir well.
- Spoon yolk mixture into egg whites.

-Please take note that these are estimates with carb counting/ low carb options. Please pay attention to how your own body responds to food by looking at patterns in your blood sugars. If you notice a certain type of low carb snack is making your sugars higher-considering pairing that item with a non-starchy veggie like cucumbers or broccoli.

Healthy Daytime Snacks



Snacks, besides being fun to eat, may help prevent low blood sugar levels and provide energy if you are planning on exercising. If you take NPH in the morning, no morning snack is needed, unless active, but an afternoon snack 2-3 hours after lunch is important. Make sure you allow 2 hours in between eating your afternoon snack and testing your blood sugar before dinner to give an accurate blood sugar reading. You may also use these as bedtime snacks if needed based on a blood sugar below 100 mg. If patient under the age of 5, a blood sugar above 130 mg is recommended. Again, allow 2 hour span between dinner carbs and testing sugar before sleeping to get an accurate blood sugar reading.

Examples of 15-20 Gram Carb Snacks (Always Check Labels)

- 1 small (4 oz) apple or orange (Fist Size) or ½ banana (4 oz)
- Pretzels (Try Whole Wheat)-about 18 small pretzels
- Popcorn cakes-about 2 cakes
- ½ small bagel with light or whipped cream cheese, nut butter spread or lowfat/light cheese
- Yogurt (4 oz) without high fructose corn syrup. Try Yoplait Digestive Health, Stonyfield, Yo-Baby, Horizon. Top with nuts, ground flax seed.
- 3 cups air popped popcorn or trans-free/non-hydrogenated microwave popcorn. Try sprinkling with parmesan cheese, chili/lime, salt/pepper.
- 1 ½ graham crackers-(Try whole wheat.) Spread with nut butter, whipped or light cream cheese.
- ½ cup low fat ice-cream (Check ingredients-you should know what your eating. Bryers all natural is a good brand)
- 2 Tablespoons raisins/cranberries plus nuts and seeds
- ½ cup unsweetened applesauce
- 1 whole fruit juice bar

Special Suggestions

1. Encourage fresh fruit rather than juice as a routine snack, unless blood sugar is low.
2. If patient does not want a snack prior to activity, speak to your diabetes doctor about how to decrease your “acting” insulin around exercise prior to activity.
3. If the child is still hungry after the snack, offer water, popsicles made with Crystal-Light, non-starchy veggies such as carrot sticks, jicama, cucumber, celery and peanut butter, light cheese sticks, lean deli meats such as turkey, cubed chicken, nut butters.

Examples of 30-35 Gram Carb Snacks (Always Check Labels)

- One small bagel (Palm size) with above suggestions
- 1 oz baked tortilla chips with salsa, low fat cheese, guacamole
- 1 granola bar-(Look for those free of high fructose corn syrup and hydrogenated oils.)
Try Cliff Kids or GNU bars
- 1 whole 8 oz banana
- 4 oz fruit cup with 1 cup milk (2% or less)
- 1 cup Cheerios/Kashi Heart to Heart with milk-(Look for cereals with fiber above 3 grams)
- ¼ cup dried fruit mixed with sunflower seeds
- 15 baked potato chips
- 2 fig cookies and 1 cup milk
- 14 animal crackers and ½ cup milk
- Annie's whole wheat cheddar bunnies with edamame
- Pomegranate seeds sprinkled onto 6-8 oz yogurt



Summer Creamsicles and Popsicle Recipes

Yogurt Creamsicles

Combine:

½ cup plain skim milk yogurt (10 grams)

½ cup fruit juice concentrate, undiluted (45 grams)

Freeze in Popsicle molds until solid.

Total Mix=55 grams of Carb

Fruit Popsicles

Combine and Blend:

1 cup fresh or frozen fruit: Berries, peaches, bananas (30 grams)

½ cup apple juice concentrate, undiluted (45 grams)

Freeze in Popsicle molds until solid.

Total Mix=75 grams

Crystal Light Popsicles

Prepare 1 gallon any flavor Crystal Light and pour into molds filling ½ full.

Add 2 Tablespoon favorite berries or grapes into Crystal Light Mix.

Each Popsicle=5 grams (Basically free of Carb)

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Carb Free Drinks Below 5 Grams of Carb/Serving

(Assume drinks are carb free unless otherwise noted)



Water: Don't forget water is best! Try to choose more drink options that use less artificial sweeteners and colors.

METROMINT water made with real mint and fruit extracts-no artificial sweeteners or dyes: Order online or type in zip code on product info page for store locations near you

Hansen's Stix made with Stevia: Albertson's, Drugstore.com, Amazon.com

Diet Hansen's made with Splenda: Henry's, Von's, most major grocery stores

Propel Zero verses Gatorade made with Splenda: Any grocery store
(Original Propel has 3 gram/ 8 ounce serving for a total of 9 grams/ 24 ounce bottle)

Emergen-C Electro-Mix verses Gatorade made with Stevia: **(Add to sparkling water, soda water, mineral water, any favorite fizzy:** Henry's, Amazon.com

Emergen-C: All flavors are around 5-6 grams of carb per packet. Mix one packet into 16 ounces of water. I love to mix into natural flavored mineral waters such as **Trader Joes Fruit Infused Mineral Water.**

Crystal Lite made with Equal: (Powdered Can, Ready Made Bottles, On the Go Sticks): Any grocery store-Compare prices with generic. (Wal-Mart version of Crystal Light is half the price)

Sweet Leaf Drops made with Stevia: Henry's or Amazon.com

Fizzy Water Splash: 100% Juice (1 ounce) mixed with Fizzy Water/Sparkling Water (16 ounces). (One ounce of juice has 4 grams of carb-be careful on the portions. Please measure the ounce)

Fruit Ice Cubes: Cut up fresh strawberries, grapes and lemons. Put a couple pieces of fruit in each cube and freeze. Add to ice water or iced herbal tea.

Fruit Infused Water: Cut up lemon, cucumbers, strawberries, oranges and throw into a pitcher. Let it sit overnight. You will get the flavor of the fruit with no carbs. If you want to eat a few slices, it ok!

Herbal Tea: Ice it or drink it hot. Try passion fruit, berry, citrus. You will taste the amazing natural flavors with no carbs.

Hint, Drink Water not Sugar: Sprouts: Unsweetened essence water like pear, berry, lime and lemon.
www.drinkhint.com

Mighty Leaf Tea: Whole Foods: www.mightyleaf.com Very flavorful herbal and green teas that are wonderful both iced and hot. My personal favorite that is caffeine free: **Chamomile Citrus.**

I also love **Chocolate Mint Truffle with Almond Milk.**

(One ounce of almond milk is equal to one gram of carb) I usually brew 8 ounce cup of Chocolate Mint Truffle tea and add 2-4 ounces of almond milk). You may also try icing this, and then blending with 3 ice cubes for a frothy treat.



Sobe Lifewater Zero made with PureVia/Stevia: Any grocery store.

Lipton Pure Leaf Tea Bottles-Compare labels, some have added honey.

Green Tea Half and Half: Brew ½ pitcher green tea and mix with ½ pitcher lemonade Crystal Lite. You can also try brewing a whole pitcher of green tea, adding sliced lemons and some **Sweet Leaf** drops (see above for location). I personally love the apricot drops with green tea.

Steaz Iced Teaz-Unsweetened-lemon extract

Hot Chocolate with Cocoa Powder mixed with Stevia or Splenda. Get some cinnamon sticks and swirl away! You might also consider Sweet Leaf mint or cinnamon drops.

To Go Brands: Extreme Berry, Go Greens, Acai , Green Tea www.togobrand.com

SodaStream Fountain from Bed, Bath and Beyond-Soda Stream Diet Flavor made with Splenda and MyWater Flavor Essence unsweetened. Mint is a popular choice

Additional Non-carbonated beverages sweetened with sucralose (Splenda) that can be found at Target/Walmart or local grocery stores

- Aquafina Flavor Splash – Aquafina
- Kool-Aid Jammers “Only 10 Calories”
- Clear Fruit Lite – Sundance Beverage Company
- Dasani Natural Flavored Water Beverage
- Fruit 2-O “(original not vitamin enhanced)”
- Nestle Pure Life Natural Fruit Flavored Water

Sweetener Brand Name Ingredients Carb & Calories

Agave nectar from the Agave plant, cane sugar or honey:

1 teaspoon contains 5gm Carbohydrate

Equal, Aspartame

1 packet contains .25 grams or close to zero Carbohydrates

Splenda/Liquid Sucralose

0 Carbohydrate

Stevita Co. Inc® STEVIA-0 grams carb

There are many other products to try. These are just a few I like. Try them out! If you can't find them at your local stores, many products can be ordered online at www.amazon.com or www.drugstore.com. Ask your store manager if they will order a special product for you. Many are happy to help you. ☺ Any questions ask your dietitian at Rady Children's Hospital San Diego

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Diabetic Bedtime Snack Ideas

Low blood sugar during the night can be a concern for people with diabetes, especially those on insulin. A study published in "Diabetes Care" investigated the impact of snack composition on nightly blood sugars with Type 1 diabetes. The researchers concluded that bedtime snacks consisting of a carbohydrate/protein/fat worked best in preventing low blood sugars when the bedtime blood sugar was less than 130 mg/dL. **All snacks throughout the day do not need to have added fat and protein. Keep in mind that some individual are fine with carbs alone as a bedtime snack and do not go low at night.**

High Quality Cereal and Milk

A bowl of high quality cereal contains both protein and complex carbohydrate making it an ideal bedtime snack. Aim for a bedtime snacks containing about 15 to 30 g of carbohydrate, or one to two servings of a carbohydrate-containing food and a serving of protein. It is not quite understood why protein helps to prevent nightly hypoglycemia, according to the authors of the "Diabetes Care" study, but it is believed to be related to the way protein is metabolized. Cereal and milk or almond/soy milk provides both carbohydrate and protein with a little fat. See examples below and during cold months, you can try 1/2 cup of hot cereal with 2 tbsp. of raisins and 1 cup of 1%-2% milk as a cereal bedtime snack.

Examples of high quality cereals: (Higher protein cereals have 5-8 grams of protein or more per servings and high fiber should be above 3-5 grams of fiber).

- Granola ¼ cup=15 grams of carb with 4 ounces of soy or cow milk (1/2 cup)=8 grams: **Total Carb=15-20 grams**
- Kashi Cinnamon Harvest Shredded Wheat Biscuits: (5 biscuits=8 grams) + 4 ounces (1/2 cup) of soy milk = 15 grams: **Total 15-20 grams**
- Trader Joes Organic High Fiber O's: (1/4 cup = 8 grams) over 4 ounces= (1/2) cup vanilla yogurt=10 grams: **Total Carb= 18-20 grams**
- Overnight oats in a jar. Old Fashioned oats with added berries/nuts/ chia/ flaxseed/hemp hearts. Instead of making with water try almond milk to boost calcium and protein. Pinterest has a ton of ideas on overnight oats. **(Total carb in ½ cup cooked oats= 15 g)**
- Nature's Path Heritage Flakes **(3/4 cup=24 grams of carb with 5 grams fiber =Total carb of 19 g once you subtract the fiber)** drizzled with a teaspoon of honey = 5 grams of carb and topped with coconut yogurt (check label 8-12 g)

Crackers and Peanut Butter or any Nut Butter: Almond Butter, Sunflower Seed or Cashew Butter

Crackers provide the carbohydrate and peanut butter provides the protein/fat.

- 6 whole-grain crackers with 3 tsp. of peanut butter or you can also try
- 3 whole-grain crackers with 1-2 tsp. of peanut butter and ½ cup of skim milk.
 - Each snack example contains 15-20 g of carbohydrate.



Sandwiches

Sandwiches also make a good bedtime snack for diabetics. Choose lean sources of meat to decrease your intake of saturated fat or try hummus. Too much saturated fat in the diet increases blood cholesterol levels, another risk factor for heart disease.

- Bedtime sandwich ideas include one slice of whole wheat bread with 1 oz. of turkey, 1 oz. of lean ham, 1oz. of low-fat cheese or 1 oz. of canned tuna packed in water mixed with 1 tsp. of low-fat mayonnaise. **Total Carb = 15-20 grams**
- For a lighter snack, you can also try half of a sandwich with half a piece of fresh fruit. **Total Carb=15-20 grams**
- A toasted cheese sandwich with one slice of toasted bread and one slice of low-fat cheese also makes a healthy snack with a calcium boost. **Total Carb=15-20 grams**

Other Protein/Fat/Carbohydrate Combinations

- 1/2 fruited yogurt with one-two graham cracker squares=**15-20 grams**
- 1 oz. of low-fat cheese with 4 Kashi Crackers (Check Label)= **15-20 grams**
- (1 oz.) whole wheat bagel with peanut butter/nut butter=**15-20 grams**
- ¼ cup hummus with half pita = **15-20 grams**
- 1/4 cup of nonfat cottage cheese with a ½ banana = **15-20 grams**
- Luna Peanut Butter Cookie Bar= **23 grams** (You can try half a bar



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Table 4
Extra Food to Cover Exercise*†

Expected length of exercise	Blood sugar level		Examples of foods
	Mg/dL	mmol/L	
A. Short (15-30 minutes) †	< 80	<4.5	8 oz of sports drink** or 4-6 oz juice**
	80-150	4.5-8.3	A fresh fruit (or any 15 grams carbohydrate**)
	>150	>8.3	None
B. Longer (30-120 minutes) †	<80	<4.5	8 oz of sports drink** or 4 oz juice plus ½ sandwich
	80-150	4.5-8.3	8 oz sports drink or milk plus fresh fruit
	>150	>8.3	½ sandwich**
C. Longest (2-4 hours) *†	< 80	<4.5	8 oz of sports drink or 4 oz juice, whole sandwich
	80-150	4.5-8.3	Fruit, whole sandwich
	>150	>8.3	Whole sandwich

**Remember to also drink water, sports drink or other fluids (one 8 oz glass for A, two 8 oz glasses for B, and three 8 oz glasses for C) before or during the exercise to prevent dehydration. This Table is for a moderate degree of exercise (e.g., walking, bicycling leisurely, shooting a basketball or mowing the lawn). If heavier exercise (e.g., jogging, bicycle race, basketball game or digging in the garden) is to be done for the same amount of time, then more food may need to be added. Amounts vary for different people and the best way to learn is to do blood sugars before and after the exercise and keep a record of the blood sugar values (see Table 3).*

***Each of these represents 15 grams of carbohydrate which will last for about 30 minutes of moderate exercise. A sandwich with meat or other protein lasts longer.*

† May also need to reduce insulin dosage.