

### Managing morning highs

#### The liver and carbs of it

Have you ever woken up in the morning to a high blood glucose reading.... before you've eaten breakfast? Waking up with high blood sugar levels is a frustration for many people with diabetes. There normally is a cause or biological process that can be traced back to as the culprit. It is important to play detective to find out the cause, because morning highs are not good for your body and health throughout the rest of that day.

#### Extra Carbs or Midnight Noshing

Eating too many carbohydrates or eating foods that cause a delayed and large spike in blood sugar could be the cause of hyperglycemia a full 10-12 hours later. Either you ate too much (like too many chips and tortillas) or you ate food with high carbs and high fat (deep dish pizza) and your blood sugar stays higher for a longer period of time. Or maybe your less healthy bedtime snack or midnight snack is causing your morning numbers to be high. Food choices like these along with stress and sickness can also cause blood glucose levels to be higher in the morning. Your meal timing and meal choices might show up in your morning numbers if you're not careful.

#### Your Liver May Be Working Overtime

Your body stores glucose in the liver and releases it into your blood stream when blood glucose levels start to drop--like while you are sleeping! In the wee hours of the morning, your body naturally starts to produce certain hormones (counter-regulatory hormones) that trigger the liver to crank out the stored glucose to prevent you from becoming hypoglycemic. (This is called the Dawn Phenomenon). Sometimes the liver releases

too much glucose, your bedtime insulin is wearing out, or your pancreas' insulin has a hard time responding to this new output of glucose in the middle of the night. These can all cause high blood sugar when you wake up. Also, as you get closer to waking up, your body starts releasing hormones to get you revved up to start your day! Sometimes these hormones prevent insulin from doing its job, resulting in higher blood glucose readings when you wake up.

#### Medication Management

If you take insulin or diabetes medications, forgetting to take your dose the night before can mean there isn't enough insulin to cover the carbs you ate, resulting in a morning high. Or if you take too much insulin by mistake, causing your blood sugar to drop too low in the middle of the night, this can trigger your liver to release more glucose to prevent hypoglycemia. (This is called Somogyi Effect or Rebound Hypoglycemia). Mistakes with insulin or just forgetting your oral diabetes meds can cause high blood sugar the following morning.

#### How to Handle Morning Highs

- > Recruit your diabetes team to help solve your morning highs. Your doctor and diabetes educator should know if you are experiencing morning highs on a regular basis. This might mean you need a change to your treatment and medication plan or a brush up on ways to control your blood sugar with diet and exercise.
- > Track and record everything: Write down your blood sugar readings, the times, the carbs you eat, the medications you take, the exercise you do, and anything out of the ordinary. This will help you find patterns in your habits that might be leading to morning highs or it will help your doctor correct your medications.
- > If you do wake up with an abnormally high reading, here are a few actions you can take to get back on track for the rest of the day:
  - Take your medication or insulin if prescribed
  - Exercise in the morning before breakfast
  - Eat a healthy breakfast with lean protein and 1-2 healthy carb choices with fiber
  - Drink plenty of water
  - Eat a snack of protein and 1 carb choice with fiber before you go to sleep that night to prevent another morning high

“Adults with diabetes are 2 to 4 times more likely to have heart disease or a stroke than adults without diabetes. But this does not mean that you can't prevent heart disease.”

# Prevent Better



## Eat Heart Healthy Foods. Well, What Are They?

Not only do the foods you eat affect your diabetes, but food you put in your mouth affects your heart too. Some foods don't help your heart and actually can do damage. But there are many foods that help protect your heart and blood vessels, keeping them healthy. Now that you have a list of heart healthy foods, all you have to do is eat them!

### Complex Carbohydrates

**Whole grain breads** should be 100% whole grain to give you nutrients and fiber.

**Brown rice, quinoa, oatmeal, and barley** are great whole grains with tons of vitamins and nutrients, such as the B complex vitamins, magnesium and fiber.

**Black beans, kidney beans and lentils** pack in tons of fiber, folate, potassium and some omega 3 fatty acid.

### Vegetables

All varieties and colors of vegetables have different vitamins, minerals, fiber, phytochemicals and antioxidants, but here are particularly heart protective vegetables.

**Orange and red vegetables** like sweet potatoes, carrots and tomatoes are rich in carotenoids like beta-carotene and lycopene which are antioxidants.

**Leafy green veggies** like broccoli, Brussels sprouts and spinach have folate which helps lower homocystiene, a risk factor for heart disease.

Avoid fruits and vegetables in sugar, syrups, cream sauces, cheese or breading.

### Low-fat or fat-free dairy products

**Low fat plain yogurt and skim milk** have been shown to aid weight loss and dairy has been shown to prevent a first heart attack in women. Choose low fat or fat free dairy over full fat or 2% dairy.

### Lean Protein

**Salmon and lake trout** are good sources of protein with heart healthy mono and polyunsaturated fatty acids, including omega 3 fatty acids.

**Chicken or turkey**, without the skin, are healthy protein options with little saturated fat.

### Fruits

**All fruits** are packed with great nutrients, so go for different colors and types.

**Blueberries** are bundles of carotenoids, flavanoids, polyphenols, vitamin C, folate, calcium, magnesium, potassium, and fiber. A few other fruits that are great for your heart, blood pressure, and cholesterol are **blackberries, raspberries, strawberries, bananas and other citrus fruits**.

### Healthy Fats

**Vegetable oils and trans fat free margarines** like extra virgin olive oil, canola oil, and trans fat free tub butters have less saturated fat. Plant **stanols** and **sterols** are plant extracts that block cholesterol absorption and can lower LDL levels by 10%. Nuts like **walnuts** and **almonds** are little morsels of omega-3s, vitamin E, fiber, unsaturated fats, and phytosterols.

### Omega 3:

#### What is it and how can I get some?

Omega 3 is a type of fatty acid that helps make up fat molecules. This particular type of fatty acid has been shown to serve several important purposes in the human body. So it is important that you eat the right amount of omega 3 fatty acids so they can do their job in your body. Research has shown that omega-3s decrease your risk of having an abnormal heartbeat, lower your triglyceride levels, slow the buildup of plaque in your arteries, and lower blood pressure. All of that helps lower your risk for heart disease. Omega 3 fatty acids have also been shown to prevent blindness (a possible complication of diabetes) by slowing down swelling of the blood vessels in your eyes. And there are even a few researchers speculating that omega 3 fatty acids help improve insulin sensitivity.

#### Good sources of omega 3s:

- Salmon
- White albacore tuna
- Herring
- Lake trout
- Sardines
- Walnuts
- Almonds
- Fish oil capsules.
- Flaxseed and flaxseed oil can also give you some omega 3s because it has a precursor fatty acid that turns into omega 3 in your body.



# Staying **Fit** and **Flexible** with "Ask Mary"



**Exercise helps control your blood sugar** by pulling glucose into your muscles for energy while you work out. There are different types of exercises that work out your heart (aerobic) and your muscles (anaerobic). Stretching for flexibility is also important because flexibility improves blood flow and lowers your risk for getting injured.

Try out these basic exercises to maintain muscle strength, improve your flexibility and work out your heart, depending on how high you get your heart rate up.

**Warm Up** for 10 minutes with an aerobic exercise: marching in place, walking, riding a bicycle, or walking stairs. Try to keep your heart rate around 50-70% of your max heart rate. You can increase this time as you build endurance.



**Body Weight Squat:** Squat down like you are sitting in a chair as low as you feel comfortable. (You can actually sit in a chair if you need to). Keep your knees from bending in front of your toes and try not to let your shoulders fall forward. Stand back up and continue to squat down for 12 repetitions. Take a break and then do 12 more squats.

**Push Ups:** Do 12 pushups, take a break and then do 12 more pushups. (Modifications: 1. Keep your knees on the ground while pushing up. 2. Place your hands on a wall with your feet about 3 feet away from the wall so your body is diagonal to the wall. Push away from the wall keeping your feet in the same spot.)

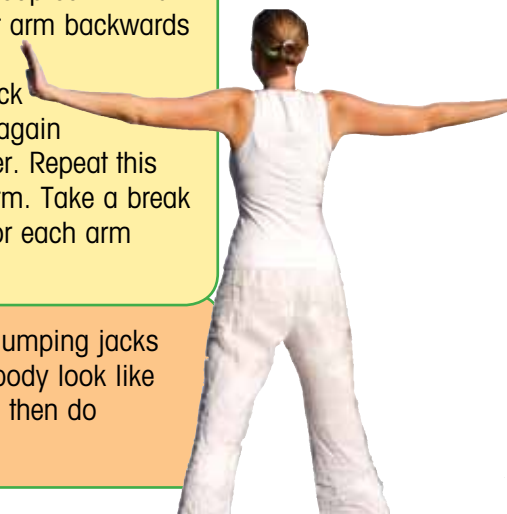
**Arm Raises:** Standing up with your arms at your sides, slowly raise your arms up to shoulder level with your palms facing the ground. Slowly lower your arms back to your sides and then continue raising for 12 repetitions. Take a break and then do 12 more arm raises. (Modifications: 1. Hold hand weights or soup cans for more resistance. 2. Raise your arms in different directions, to the side, directly in front, or diagonally.)

**Shoulder Press:** Standing up, holding hand weights or soup cans, push your arms up over your head and then lower them back down so your hands are level with your shoulders. Continue to push up and down for 12 repetitions. Take a break and then repeat 12 shoulder presses.

**Bent Over Row:** Bend at the waist about 45 degrees and place one hand on a table or chair. Hold a hand weight or soup can in the other arm and slowly pull your arm backwards like you are pulling something to your hip. Push your arm back out straight and then pull it in again using the back of your shoulder. Repeat this exercise 12 times with each arm. Take a break and then repeat the "rowing" for each arm 12 more times.

**Cool Down** with Stretching: Take some time to bring your heart rate down while stretching the major muscle groups in your body. Start by rotating your neck, roll your shoulders backwards, and gently swing your arms back, forward and to the sides. Prop up 1 leg at a time on a chair and slowly bend at the waist towards your toes to stretch each hamstring. Then split your legs with one foot 2 feet in front of the other. Lean back slightly & stretch your hip and then switch to the other leg in front. While lying on your side, pull one leg back and up to stretch your quadricep. Then switch to the other leg to stretch the other quad.

**Jumping Jacks:** Do 12 jumping jacks (jumping to make your body look like an X), take a break, and then do 12 more jumping jacks.



**"Talk with your doctor before starting a new workout routine and do not attempt exercises that are too difficult or painful. Slowly build up your ability to perform these activities and the number of repetitions. Do not exercise if your blood sugar is over 250mg/dL."**

# Astounding Artichoke



This green, prickly vegetable is most often eaten as the canned heart from the center of the artichoke. But the whole artichoke, originally from the Mediterranean, offers much more nutrition and a fun finger food than what you'll find in the jar. The "vegetable" that you buy is a flower bud from the main artichoke plant that is in season March to May. You can get artichokes year round though. The meat or flesh that you eat comes from the ends of the bud leaves and from the heart. This is what makes eating whole artichokes so much fun! It is amusing to pick off the leaves and scrape away the tasty meat. Another benefit is the slow eating process allows you to feel full faster.

## How to Prepare Artichokes

- > Wash under cold, running water.
- > Slice off the tip of the artichoke, less than 1 inch, so the top leaves are flat across.
- > Use kitchen scissors to cut off the rest of the thorned tips of the leaves.
- > Cut off some of the stem so there is about 1 inch left.
- > Cook and eat however you like!

## How to Cook an Artichoke

- > Put in boiling water then simmer for about 30 minutes or until the leaves are tender
- > Microwave in about 1 inch of water for 12 minutes each
- > Cook in a pressure cooker for 20 minutes
- > Cut in half, clean out fuzzy fibers and bake at 350° for 45 minutes
- > Cut in half, clean out fuzzy fibers and pop them on the grill until soft

## Get to the Heart of the Matter

Once you've eaten all the leaf meat, remove the thin, prickly leaves until you get to the choke (hairy fibers in the center of the artichoke). You can scoop out these fibers with a spoon but don't go too deep or you'll cut out the tasty heart meat. Cut away the remaining stem, cut the heart into pieces and enjoy!







1 artichoke (meat from leaves and heart):

- 14 grams of carbs
- 10 grams of fiber
- Vitamin C, E, and K
- B Vitamins
- Potassium, Magnesium, and Calcium
- 7 different Antioxidants
- Low Glycemic Index

The artichoke meat has great flavor by itself but you can also dunk the meat on the leaves and the heart into dips, stuff the artichokes with different fillings, or sprinkle the artichokes with tasty seasonings and sauces.



## Seasonal Spring Produce

<b>Baby Carrots</b>		15 baby carrots are the perfect 1 carb snack with vitamin A.
<b>Pineapple</b>		Spring into the season with 3/4 cup of this sweet fruit for 1 carb choice.
<b>Asparagus</b>		12 asparagus spears are free carbs and give you great vitamins and minerals.
<b>Mint Leaves</b>		Use this herb to enhance dishes with the spring flavor in salads, bean and lentil mixes, and lean meats.
<b>Fava Beans</b>		1/2 cup of the shucked beans counts as 1 carb with 1/2 your daily fiber and 25% of your daily folate.
<b>Cauliflower</b>		For fiber, vitamins, and minerals, 1/2 cup cooked counts as 5 grams of carbs.
<b>Peas</b>		Toss garden, snap, and snow peas into spring salads for vitamin C and B vitamins.

## Steamed Artichoke with Garlic Dip

Prep Time: 10 minutes. Total Time: 40 minutes.

Serve these artichokes as an appetizer or as a fun, finger food during your meal.

### Ingredients

- 4 sprigs parsley
- 2 garlic cloves
- 2 bay leaves
- 2 lemons, cut in half
- 1 quart chicken broth or water
- 2 whole artichokes

### Sauce

2 Tablespoons trans fat free tub butter  
(like Smart Balance Omega Plus Spread)  
1 Tablespoon minced garlic  
Salt and pepper, to taste

### Preparations

1. Place the parsley, garlic, bay leaves, lemon halves, and broth in the bottom of a large pot (about 2 inches of liquid in the pot) and bring to a simmer.
2. Prepare the artichokes by rinsing, cutting off the top inch, trimming the stem, and cutting the thorns off the leaves.
3. Place the artichokes in the pot, stem side up, cover, and steam for 30 minutes or until the stem and leaves are tender. Take out the artichokes and drain them.
4. While the artichokes are steaming, melt 2 tablespoons of tub butter and mix with 1 tablespoon of minced garlic. Dip the leaves and heart into this sauce or eat them without it!

Nutrition Facts	
Serving size: 1 artichoke with 1 tbsp sauce	
<b>Amount Per Serving</b>	
Calories 162	
<b>Total Fat</b>	9.4g
<b>Cholesterol</b>	0mg
<b>Sodium</b>	175mg
<b>Total Carbohydrate</b>	16.8g
<b>Dietary Fiber</b>	10.6g
<b>Protein</b>	4g
<b>Carbohydrate Serving</b>	1

# Sugar Savvy Shopping

Look for these words in the ingredients list of food packages at the grocery store. These are different forms of sugar and can help you identify carbohydrates in foods without a nutrition label. It is OK to eat these, but remember moderation is the key.

- > Agave nectar
- > Brown sugar
- > Cane crystals
- > Cane sugar
- > Corn sweetener
- > Corn syrup
- > Crystalline fructose
- > Dextrose
- > Evaporated cane juice
- > Fructose
- > Fruit juice concentrates
- > Glucose
- > High-fructose corn syrup
- > Honey
- > Invert sugar
- > Lactose
- > Maltose
- > Malt syrup
- > Molasses
- > Raw sugar
- > Sucrose
- > Sugar
- > Syrup



## Switch this

## For that

Regular mashed potatoes with cream	Mash potato with cauliflower, turnip, and rutabaga with trans fat free tub butter
Chocolate covered raisins	Melt unsweetened chocolate, mix in a little stevia or splenda and dip in blueberries and raspberries
Sweetened tea	Steep a flavored tea bag, cool the tea, serve on ice
Low Fat Salad Dressing (Added carbs and other fillers replace the fat)	Mix 1 part balsamic vinaigrette with 3 parts olive oil and mix in 1 Tbs of Dijon mustard
Cereal with more than 8 grams of sugar/serving	Oatmeal or whole grain cereal with 8 grams or less of sugar
Mayonnaise or cream based spreads and dips	Olive oil or canola oil based spreads and dips
Chips or other snacking food	Homemade sweet potato slivers. Slice sweet potatoes thinly, spray with non stick spray, season, and bake.

## Share with us!

Which topics and recipes interest you? We want to know what you want to know! Send us your questions, topic requests, and comments at [GLUCOCARD@arkrayusa.com](mailto:GLUCOCARD@arkrayusa.com).

This information is for general education only. Please consult your diabetes team for medical, nutrition or fitness advice.  
[www.glucocardusa.com](http://www.glucocardusa.com)  
[www.glucocardyouchoose.com](http://www.glucocardyouchoose.com)

## GLUCOCARD® Blood Glucose Meters






**“The higher the average daily intake of fruits and vegetable, the lower your chances of developing cardiovascular disease. Individuals who eat more than 5 servings of fruits and vegetables per day have about a 20 percent lower risk of coronary heart disease and stroke.”**

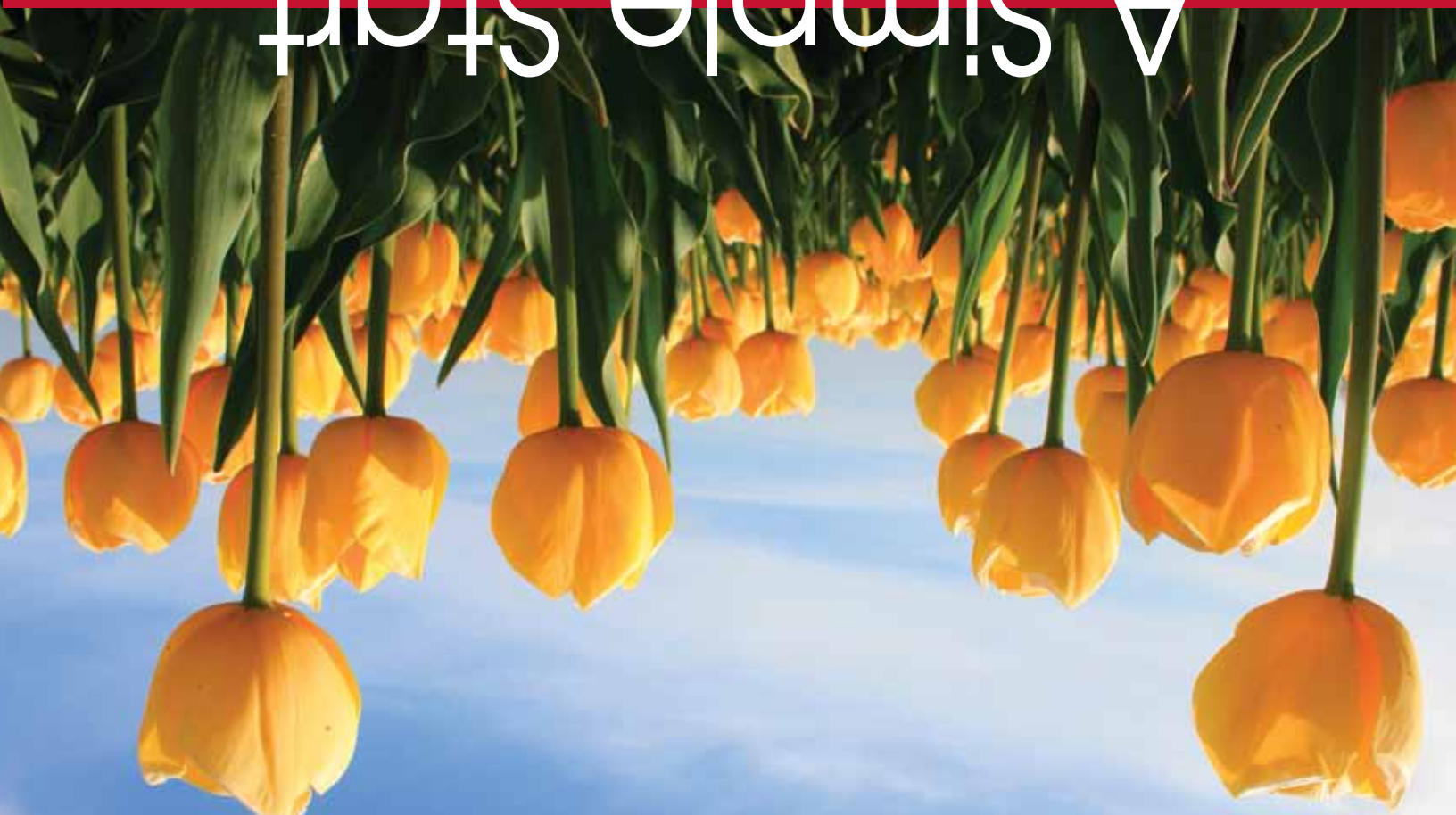
# Eat Better



## Small, Healthy Changes

-  Plan healthy snacks ahead of time and write out a grocery list so the “extra” snacks don’t end up in your cart.
-  Wake up 30 minutes early to fit in a quick work out like a walk or some of the moves on page 3.
-  Try packing a healthy lunch this week or pick a restaurant that gives you healthier food choices.

# A simple start



**ARKRAY USA, Inc.**

Minneapolis, MN 55439 USA  
TEL 800-866-1633  
FAX 952-646-3110

P/N 6333-06 Rev 3/11

**GLUCOCARD®**  
The Simple Change™