

A Low-Carbohydrate, Whole-Foods Approach to Managing Diabetes

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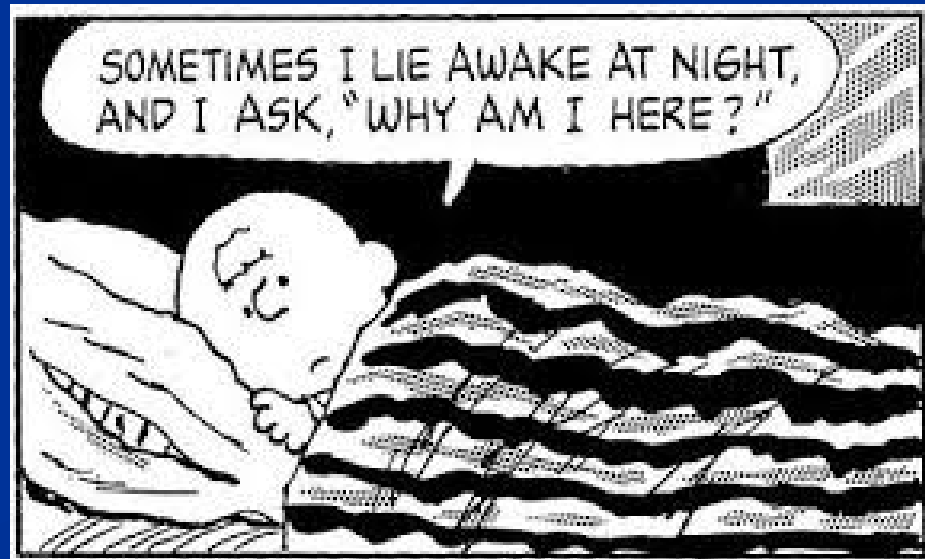


Just to be clear!

- I am not a physician, I am a clinical psychologist by training.
- This is education and social support, not medical advice.
- Be sure to consult with your doctor before making major dietary changes, especially if you are on medications for diabetes.

Why are you here?

- Someone told you that you have diabetes or pre-diabetes, or someone you know has diabetes and you want to learn more
- Or, you fear that you may develop the disease because you have some of the risk factors:
 - Family history
 - Overweight
 - Increased age
 - Ethnicity



Why you don't want diabetes

- Life-long, progressive disease leading to an earlier death
- Having to take medications or inject insulin
- Can lead to blindness, kidney failure, nerve damage and possibly amputations
- There's nothing one can do to prevent it or reverse it!



But, what if I told you . . . ?

- It does not have to be progressive and can be reversed.
- Blindness, kidney and nerve damage and amputations can all be avoided.
- You may not have to take medications or may be able to get off the ones you're on.
- There is no cost to reversing the disease.
- The “cure” is entirely within your power.

If you think I'm exaggerating . . .

- Recently in Great Britain, 120,000 patients with type 2 diabetes enrolled in an on-line low-carb diet plan and reported their results
- More than 80,000 saw their blood glucose levels drop after 10 weeks
- more than 80 per cent of the patients reported they lost weight
- At the end of the ten weeks, 20% no longer needed drugs to regulate their blood glucose!

EAT WELL GUIDE

Official government recommendations on eating a healthy balanced diet

- Meals based on potatoes, bread, rice, pasta or other starchy carbohydrates – wholegrain or high-fibre where possible
- At least five portions of fruit and vegetables a day
- Some dairy or dairy alternatives (such as soya and low-fat soft cheese)
- Eat beans, pulses, fish, eggs, meat and other protein

LOW-CARB PLAN

Rebellion diet – low in starchy foods but high in protein and 'good' saturated fats

- Replace carbs with green vegetables and pulses
- At least five portions of fruit and vegetables a day
- A small portion of protein with most meals
- Dairy in moderation
- Olive oil, nuts and other healthy saturated fats are welcome
- Avoid added sugar


What is diabetes?

- Primarily, diabetes is the inability of the body to properly manage carbohydrates.
- In Type 1, the beta cells that produce insulin in the pancreas are destroyed in an autoimmune process. The cause is unknown.
- In Type 2, cells throughout the body become resistant to insulin allowing glucose to build up in the blood stream. The cause IS known!



What is Type 2 diabetes?

Blood Test Levels for Diagnosis of Diabetes and Prediabetes



	A1C (percent)	Fasting Plasma Glucose (mg/dL)	Oral Glucose Tolerance Test (mg/dL)
Diabetes	6.5 or above	126 or above	200 or above
Prediabetes	5.7 to 6.4	100 to 125	140 to 199
Normal	About 5	99 or below	139 or below

Definitions: mg = milligram, dL = deciliter

For all three tests, within the prediabetes range, the higher the test result, the greater the risk of diabetes.

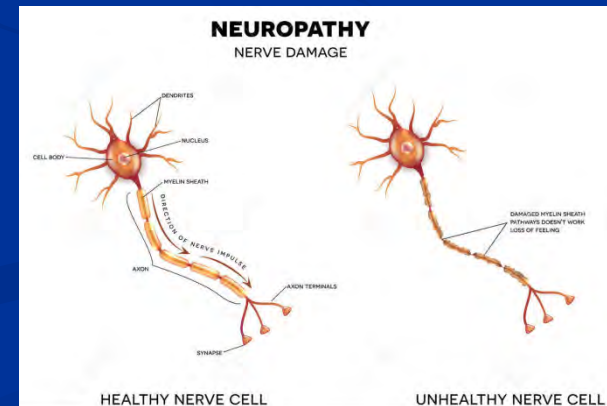
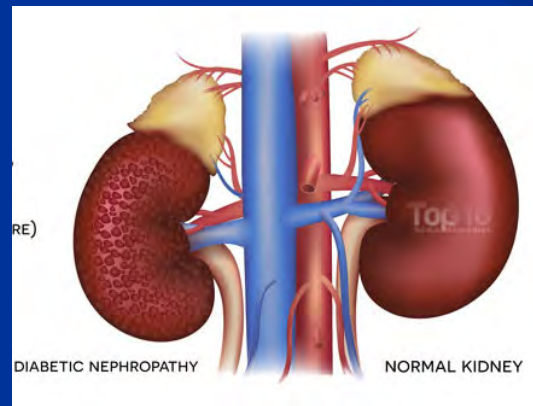
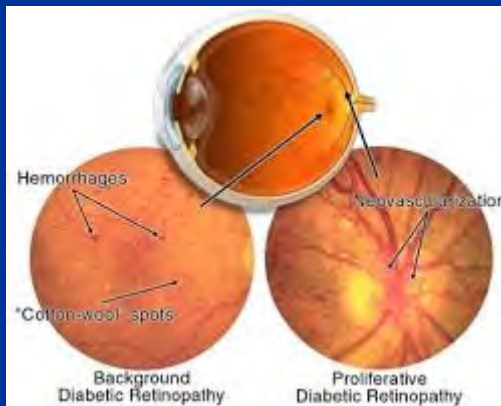
What is Type 2 Diabetes?

People who are most likely to develop diabetes:

- Older (above 45)
- ❖ Overweight (especially waist circumference)
- ❖ Physically inactive
- ❖ High blood pressure or abnormal cholesterol
- Have a family history, race or ethnicity prone to diabetes (African-American, Asian-American, Latino/Hispanic-American, Native American or Pacific Islander)
- Had gestational diabetes or polycystic ovary syndrome

What is Type 2 Diabetes?

- When glucose increases in the blood stream, it begins to damage the artery walls.
- Damage begins in the smallest capillaries at the back of the eye, in the kidneys and around nerve endings in the extremities, resulting in blindness, kidney failure and neuropathy.
- Half of all heart attacks occur among diabetics



In order to manage diabetes

- Lose weight
- Have gastric bypass surgery
- Become more physically active
- Quit smoking
- Lower stress
- Take medications
- Eat the right foods

While these all can help, the last one is the most important!



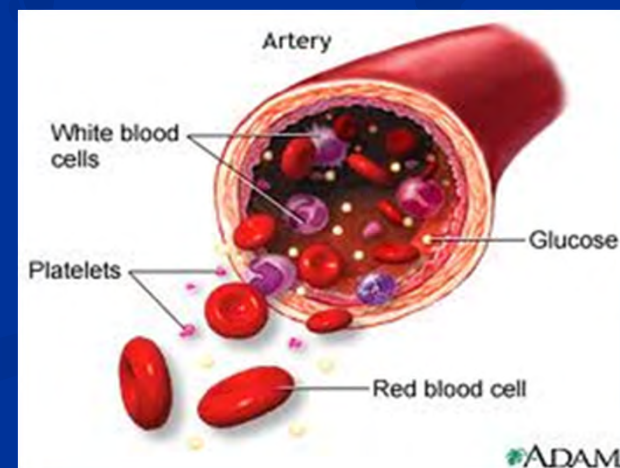
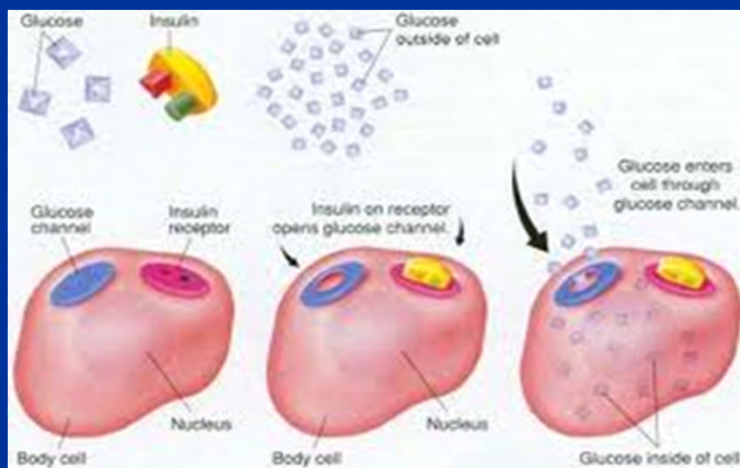
Caloric balance & insulin resistance

- “Calories in-calories out” does not take into account how our bodies actually work
- The type of food we eat matters more than the quantity we eat.
- Insulin is the hormone that is primarily responsible for glucose conversion to fat
- When we gain weight because, we become “insulin resistant”



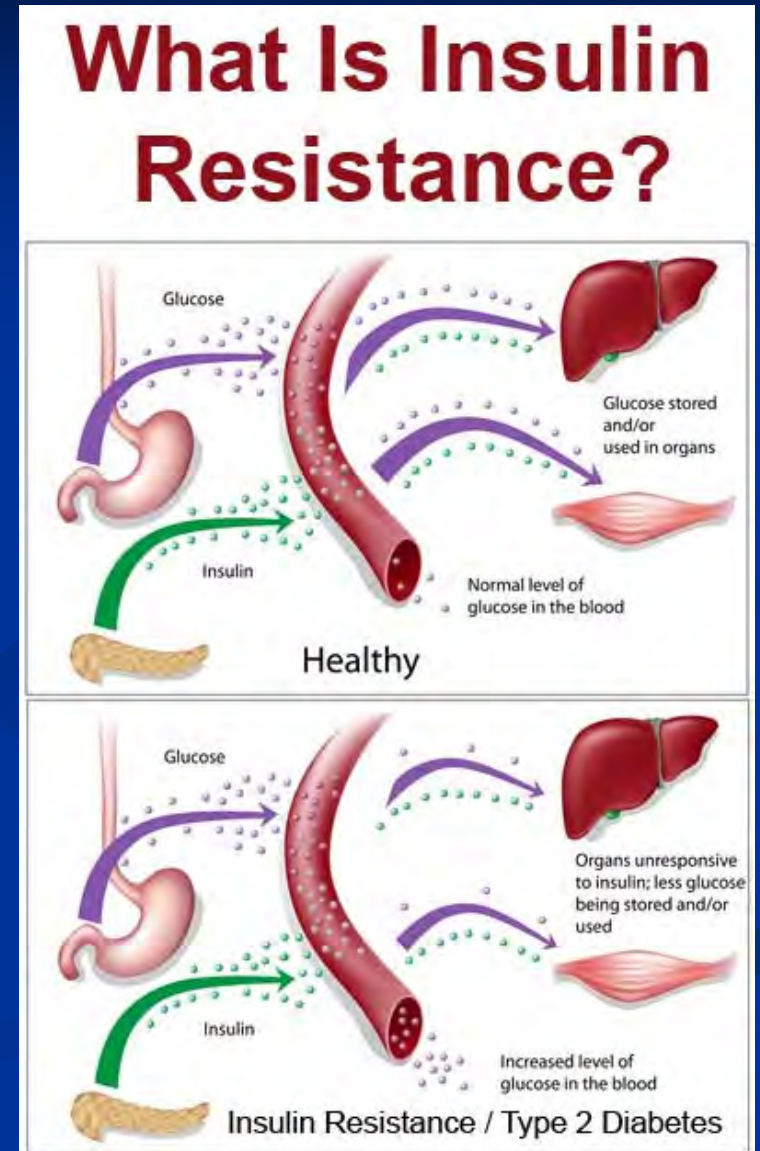
Diabetes development

- When fat cells no longer accept glucose, our blood sugar levels remain too high
- Chronically high blood sugar over time results in damage to the heart (heart disease), kidneys, retinal blood vessels and nerves (neuropathy)

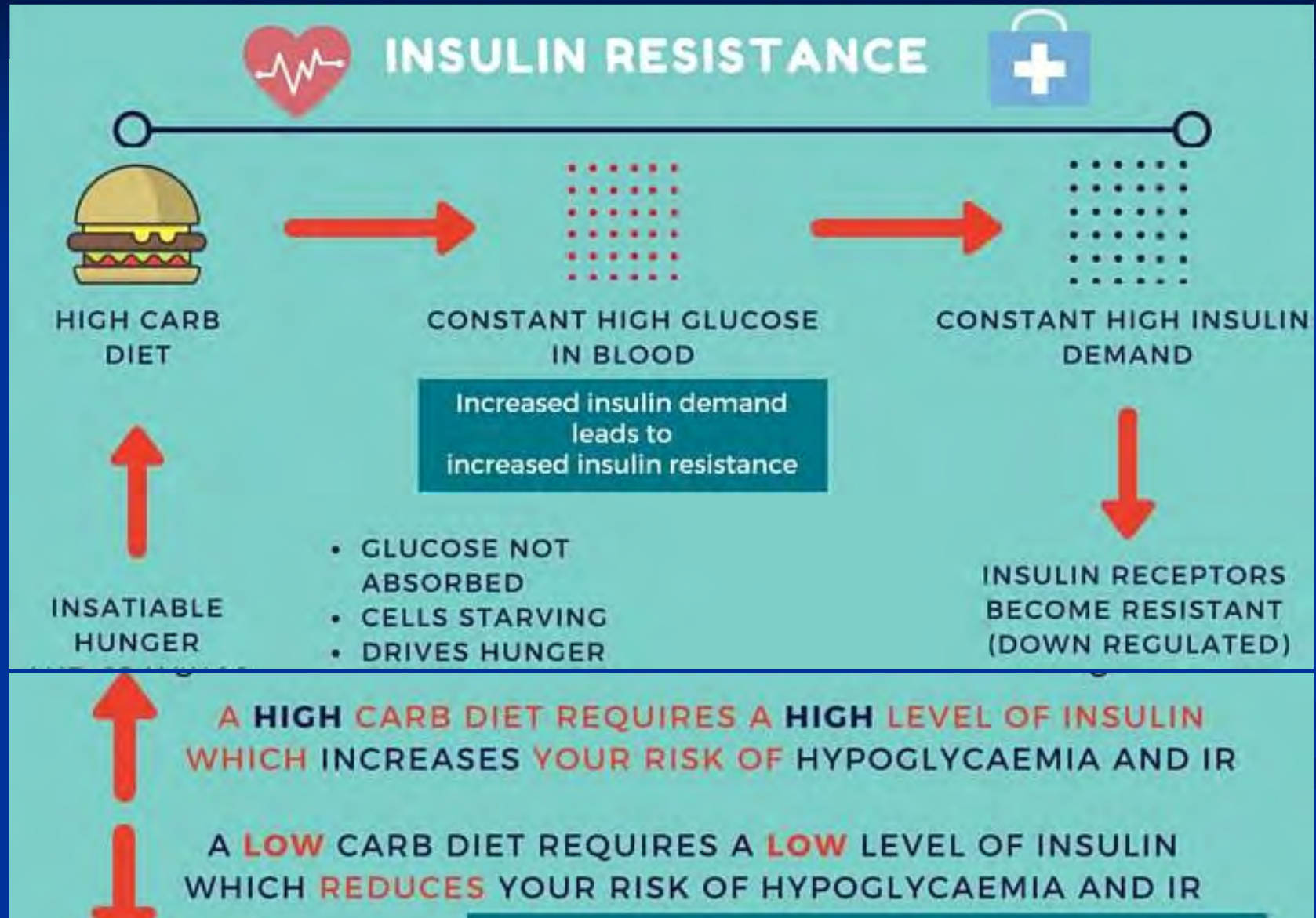


What is insulin resistance?

- Insulin resistance develops when cells become resistant through over stimulation
- Similar to increased tolerance of alcohol or other drugs where it takes more to get the same effect
- Eventually, the pancreas stops producing insulin
- Low-carb diets give your cells a chance to recover from resistance



What is insulin resistance?



What to do to prevent this

1. Reduce carbohydrate intake, especially of refined sugars and flours
2. Increase muscular exercise to “burn” available blood glucose, as well as increasing heart health, muscle mass, strength, flexibility and bone density
3. Increase healthy fat intake to reduce hunger and to prevent “diet failure”

To prevent or manage diabetes

- If you don't have diabetes yet, eat as if you did to prevent it from happening!
- If you do have diabetes, stop eating the foods that made you sick, i.e. carbohydrates!



“You can enjoy diabetes, high cholesterol and hypertension or you can suffer from good health.”

Some carbs are better than others

- All carbs are made from sugars and convert to glucose in the body and are stored as fat if not burned (exercise).
- Simple carbs (sugars) convert to fat easily.
- Complex carbs (starches, cereals, some vegetables and legumes) take longer to convert but still turn into glucose.
- Refined (white) flours convert to fat faster than whole grain flours and act like sugar.



Where are the carbs?

Starches include certain vegetables, all grains, and products made from grains

All of these foods contain starches:

Starchy Vegetables

Regular and sweet potatoes, corn, fresh peas and lima beans



Legumes

Dried beans and peas



Grains

Grains like wheat, oats, barley, and rice



Products made from grains, such as pasta, bread, rolls, bagels, crackers, cereals and baked goods



Where are the carbs?

Sugars include the natural sugars in fruit and milk, plus certain sweeteners added to prepared foods and drinks

All of these foods contain sugars:

Fruit and fruit juices
Foods that contain fruit or fruit juices such as jams, jellies, and fruit smoothies



Sweet bakery products
such as cake with icing, pie, donuts, candy, and cookies



Sugary drinks
such as regular soda and fruit drinks



Sweet condiments
such as barbeque sauce, relish and ketchup



Milk and yogurt



How many carbs in each?

1 cup cooked pasta or 1 cup cooked rice	45g carbohydrate
Whole English muffin	30g carbohydrate
3 cups popped popcorn	15g carbohydrate
Medium potato	30g carbohydrate
1 cup corn or peas	30g carbohydrate
1½ cups veggies (green beans, broccoli, or carrots, cooked)	15g carbohydrate
Small fruit (apple, orange, nectarine)	15g carbohydrate
17 grapes, 12 cherries, ½ cup applesauce	15g carbohydrate
1 cup milk	12g carbohydrate
1 container (6oz.) yogurt, flavored, artificially sweetened	12g carbohydrate
½ cup vanilla ice cream	15g carbohydrate
½ cup sherbet	30g carbohydrate
2 small cookies	15g carbohydrate

How many carbs in each?

Reading the Food Label

You will find the serving size and the grams of carbohydrate per serving on food labels:

Serving size is here →

Total carbohydrates
per serving →
Subtract fiber
 $8 - 3 = 5$

Nutrition Facts	
Serving Size: 1/2 cup • 11g	
Amount Per Serving	
Calories 80	Calories from Fat: 0
<hr/>	
% DV	
Total Fat 0g	0%
Saturated Fat 0g	0%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 300mg	12%
Total Carbohydrate 8g	3%
Dietary Fiber <3g	0%
Sugars 0g	
Protein <1g	0%
<hr/>	
Vitamin A 4%	Vitamin C 0%
Calcium 15%	Iron 4%
<hr/>	
Unofficial Pts: 2	©DietFacts.com

The source doesn't matter

All carbohydrates affect blood sugar in the same way.

It is the amount of carb you eat that is important, not the type of carb.

A serving of ice cream does not raise blood sugar higher than one equal carb serving of potatoes, rice, or pasta. This is true whether you have type 1 or type 2 diabetes.

For example: These three foods will all raise your blood sugar by the same amount:

- 1 cup of vanilla ice cream that has 30 grams of carbs
- A 2 oz. roll that has 30 grams of carbs
- 2/3 cup of spaghetti that has 30 grams of carbs

Same impact on blood sugar:



30 grams of carb
1 cup serving

=



30 grams of carb
2 oz. roll

=



30 grams of carb
2/3 cup

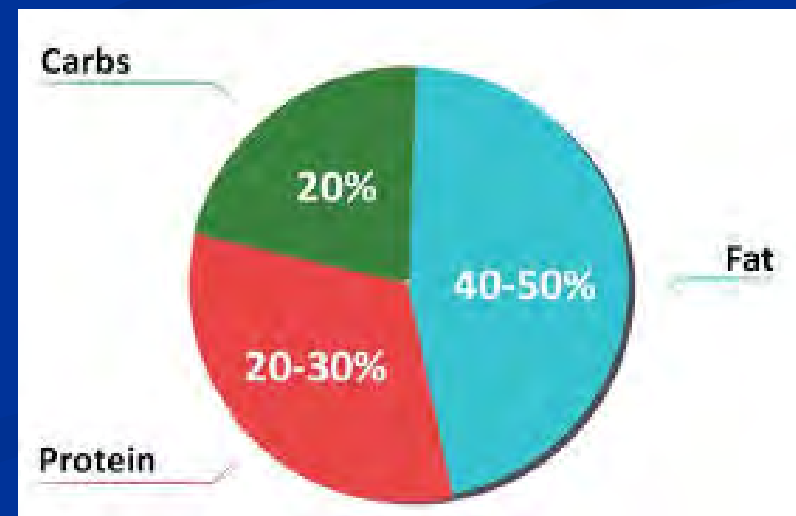
I'm doing low-carb, so what do I eat?

There is no single low-carb, high-fat diet; every diet has to be determined by each person based on:

- Your individual reaction to carbohydrates
- Your tolerance for dietary changes and your willingness to make permanent changes in the way you eat
- Your ability to monitor your body's ongoing response to what you eat through: 1) weight; 2) blood sugar; 3) blood pressure; 4) cholesterol levels; and 5) other symptoms

What's in a typical LCHF diet?

- Moderate-carb diet: 130-225g carbs daily and between 26-45% of calories
- Low-carb diet: 50-130g carbs daily and between 10-26% of calories
- Very low-carb diet: less than 50g carbs and 10% calories daily
- Any choice of foods
- Balance lower carbs with higher fats



Low carb diet

- Atkins and other recommend starting under 20 carbs for a two-week induction
- Gradually add carbs until you observe weight and/or high blood sugar levels returning
- Maintain within your range, testing increases in carbs from time to time
- It is possible to gradually lower the percent of carbs over a number of weeks, but weight loss will be slower



Low carb diet

- With low-carb, you change what you eat, not how much – **NO CALORIE COUNTING!**
- Use your own hunger as your guide to how much to eat
- Modify what you eat by your results: if you're gaining weight again, increase your fats and lower your carbs until your weight goes down

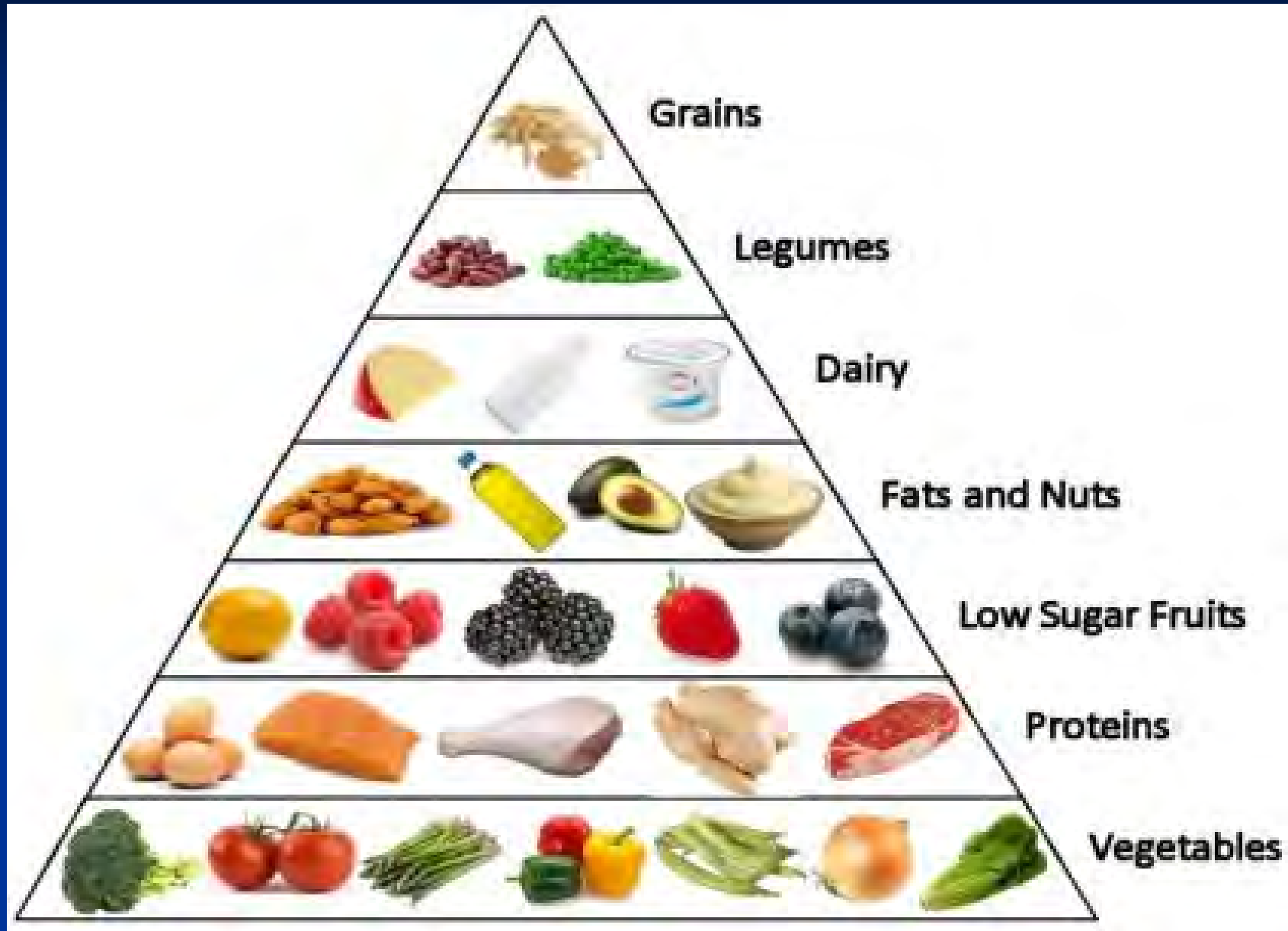


Low carb diet

- If you're on diabetes medication, you should work with your doctor to adjust the level for your lower-carb diet
- If you are on high blood pressure medication, you should work with your doctor to adjust it so it doesn't become too low
- Smoking and lack of regular exercise can affect both of these!



What foods can I eat?



Eat all you like

- **Meat:** Any type, including beef, pork, game meat, chicken, etc. Feel free to eat the fat on the meat as well as the skin on the chicken. If possible try to choose organic or grass fed meat.
- **Fish and shellfish:** All kinds: Fatty fish such as salmon, mackerel or herring are great. Avoid breeding.
- **Eggs:** All kinds: Boiled, fried, omelettes, etc. Preferably organic eggs.
- **Natural fat, high-fat sauces:** Using butter and cream for cooking can make your food taste better and make you feel more satiated. Try a Béarnaise or Hollandaise sauce, check the ingredients or make it yourself. Coconut oil and olive oil are also good options.
- **Vegetables that grow above ground:** All kinds of cabbage, such as cauliflower, broccoli, cabbage and Brussels sprouts. Asparagus, zucchini, eggplant, olives, spinach, mushrooms, cucumber, lettuce, avocado, onions, peppers, tomatoes etc.
- **Dairy products:** Always select full-fat options like real butter, cream (40% fat), sour cream, Greek/Turkish yogurt and high-fat cheeses. Be careful with regular milk and skim milk as they contain a lot of milk sugar. Avoid flavored, sugary and low-fat products.
- **Nuts:** Great for a TV treat instead of candy (ideally in moderation).
- **Berries:** Okay in moderation, if you are not a super strict or sensitive. Great with whipped cream.

What foods should I avoid?

Avoid if you can

- **Sugar:** The worst. Soft drinks, candy, juice, sports drinks, chocolate, cakes, buns, pastries, ice cream, breakfast cereals. Preferably avoid sweeteners as well.
- **Starch:** Bread, pasta, rice, potatoes, French fries, potato chips, porridge, muesli and so on. Wholegrain products are just less bad. Legumes, such as beans and lentils, are high in carbs. Moderate amounts of root vegetables may be OK (unless you're eating extremely low carb).
- **Margarine:** Industrially imitated butter with unnaturally high content of omega-6 fat. Has no health benefits, tastes bad. Statistically linked to asthma, allergies and other inflammatory diseases.
- **Beer:** Liquid bread. Full of rapidly absorbed carbs, unfortunately.
- **Fruit:** Very sweet, lots of sugar. Eat once in a while. Treat fruit as a natural form of candy.

What about fruit?

Lowest in Sugar (grams of carbs per 1/2 cup)

Small Amounts of Lemon or Lime (1)

Rhubarb (1.5)

Cranberries (2)*

Raspberries (3.5)

Blackberries (3.5)



Low to Medium in Sugar (per 1/2 cup)

Strawberries (5)

Casaba Melon (5)

Papaya (6)

Watermelon (5.5)

Peaches (6.5)

Nectarines (6)

Cantaloupes (6)

Honeydew melons (7)



Apples (7)

Apricots (7.5)

Blueberries (9)

Grapefruit (9)

High in Sugar (1/2 cup)

Grapes (13)

Bananas (15)

What about whole grains?

Whole grains are better than refined grains, but

- When they are pulverized into very fine flour they have similar metabolic effects as their refined counterparts.
- Processed breakfast cereals are NOT healthy, even though they may contain small amounts of (pulverized) whole grains.
- Bottom Line: A whole grain contains the bran and germ of the grain, which provide fiber and all sorts of important nutrients. Refined grains have had these nutritious parts removed, leaving only the high-carb endosperm.
- Whole grains are still carbohydrates!



And what about fat?

- We've been told to keep dietary fat as low as possible
- High fat and cholesterol levels were supposed to cause heart attacks
- Weight loss only results from reducing calories, increasing exercise, or both
- Therefore, the only way to lose weight is to follow a low-fat diet and increase exercise
- But, this has been shown to be incorrect!



What happens when we reduce fat?

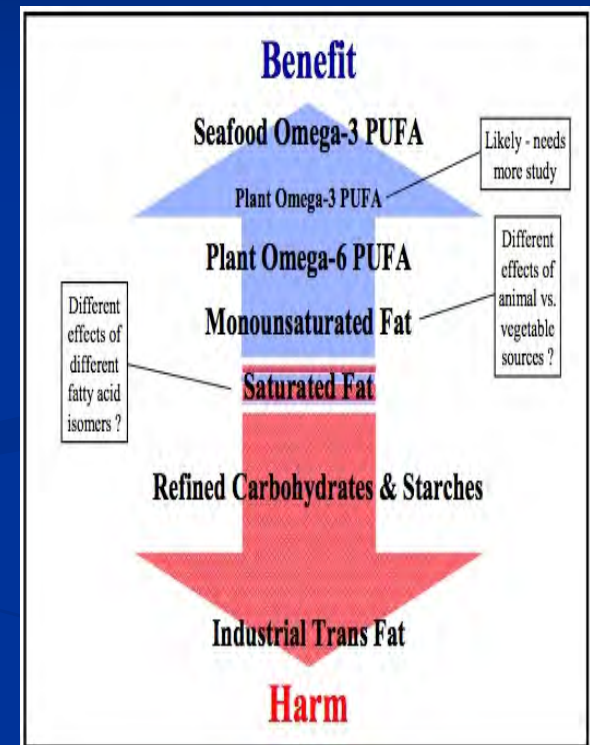
- Reduced fat in foods is usually replaced by increased carbohydrates
- Cutting caloric intake and/or increasing exercise results in increased hunger
- Counting calories is difficult
- Meals are rarely satisfying; one always feels hungry
- Though weight loss is possible, in time, we'll gain it all back due to hunger!



18 grams added sugar / 22 total carbs

Some fats are better than others

- All trans fats (hydrogenated oils) are bad for heart health
- Saturated fats are not as bad as once thought
- Mono and polyunsaturated fats are actually good for heart health
- When better fats are included in one's diet, it's easier to feel full longer and food tastes better!



FATS RANKED FROM LEAST HEALTHY TO HEALTHIEST

HEALTHIEST

adapted from Cosmopolitan

OMEGA-3 FATS

POWERS YOUR BRAIN,
AND REDUCES RISK OF
HEART DISEASE AND
ALZHEIMER'S



WILD SALMON



FLAX SEED

MONOUNSATURATED FAT

HELPS YOUR BODY BURN
FOOD MORE EFFICIENTLY
TO PROTECT AGAINST
METABOLIC DISEASE



OLIVE OIL



AVOCADO

POLYUNSATURATED FAT

SMALL AMOUNTS CAN
LOWER BAD CHOLESTEROL
AND DECREASE RISK OF
HEART DISEASE AND
TYPE-2 DIABETES



CANOLA OIL



WALNUTS

SATURATED FAT

DOESN'T PROMOTE OR
PREVENT HEART DISEASE



MEAT



CHEESE

OMEGA-6 FATTY ACIDS

TOO MUCH CAN
CAUSE INFLAMMATION
THAT CONTRIBUTES
TO HEART DISEASE



CORN OIL



SUNFLOWER OIL

TRANS FATS

CLOGS ARTERIES
AND LIVER TO CAUSE
HEART DISEASE



MARGARINE



PIE CRUST

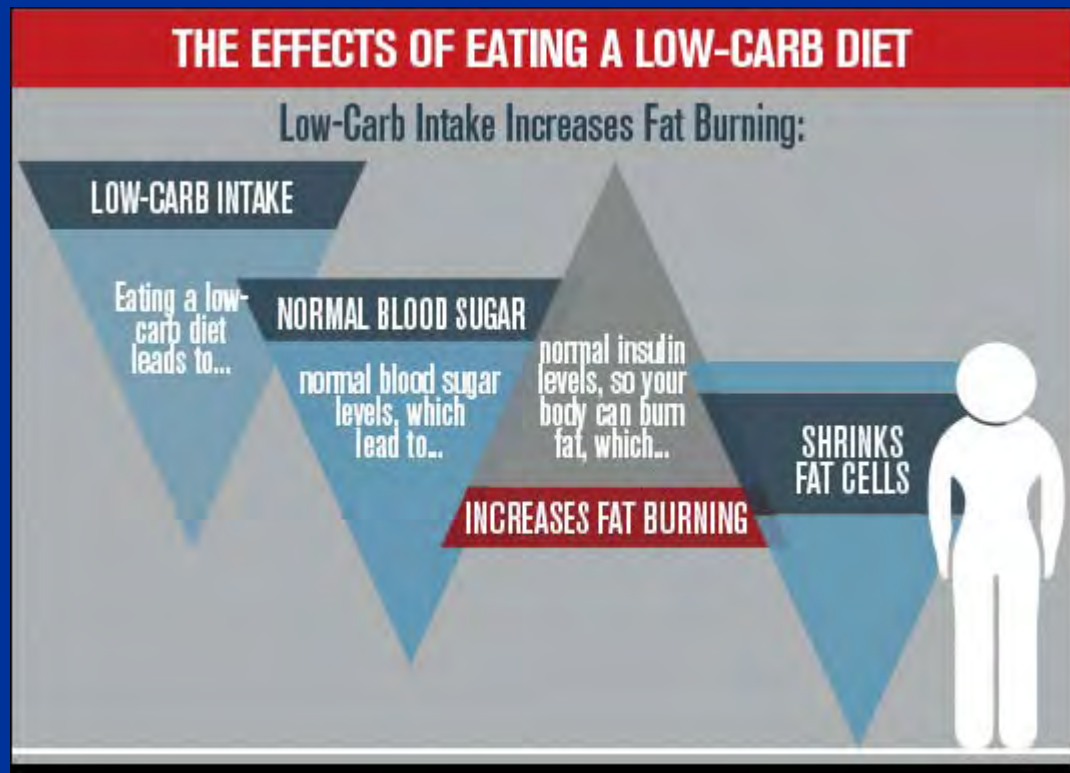
LEAST
HEALTHY

Fats and their role in Cardiovascular Disease (CVD)

- Omega-3 fats reduce CVD risk
- Monosaturated fats protect against CVD
- Polyunsaturated fats can reduce risk
- Saturated fats are essentially neutral
- Vegetable (seed) oils contribute to CVD
- Man-made trans fats actually cause CVD

Why does eating fat help?

- Fat does not stimulate insulin like carbs
- Your body will first use carbs and then turn to burning fats; if there are few carbs, then you will burn available fats, including stored fats.



What the NIH recommends



Choose healthy foods

- Eat more fruits and vegetables and **fewer high-fat foods** to help with weight loss.
- Choose whole grain foods such as whole wheat bread, crackers, cereals, brown rice, oatmeal, and barley.
- Eat a mix of colorful fruits and vegetables.
- Choose fish, **lean meat, and chicken and turkey without the skin.**
- Eat foods that have been baked, broiled, or grilled instead of fried.
- Drink water instead of juice and regular soda.
- Choose **low-fat or skim milk**, yogurt, and cheese.

This only makes sense if:

- Low fat diets resulted in more effective weight loss than low carb diets

WRONG!

- Eating whole grain foods such as whole wheat bread, crackers, cereals, brown rice, oatmeal, & barley didn't raise blood sugar.

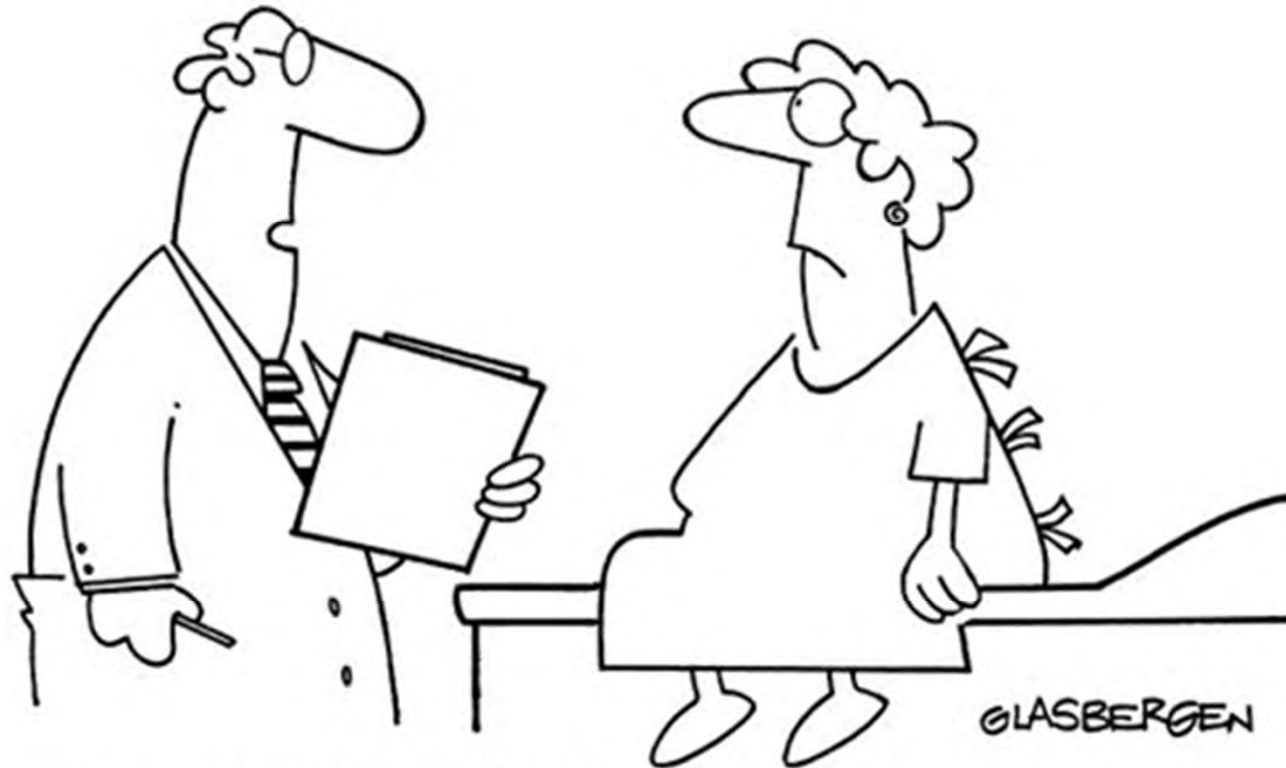
WRONG!

- Consuming low-fat or skim milk, yogurt, and cheese were related with less diabetes, which they are not!

WRONG!

So, they got it wrong!

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“The high-carb diet I put you on 20 years ago gave you diabetes, high blood pressure, and heart disease. Oops.”

What should I eat for breakfast?



Breakfast is often loaded with carbohydrates

What can I eat for breakfast?



If you don't like eggs, you can make cereals using flax seed, unsweetened coconut flakes and almonds. Add some stevia sweetener and cream, and it tastes great!

What can I eat for lunch?



Use a spiralizer to make your own “pasta”
Or just make a sandwich and skip the bread!

What can I eat for dinner?



Cook with cheese and drop the potatoes
Have two veggies instead of pasta or rice!

Can I have dessert?



Make a low-carb mousse or have
some berries and full-fat yogurt!
Or just have some nuts and cheese!

Low-carb web sites

- www.DietDoctor.com
- www.AuthorityNutrition.com
- www.Diatrube.org
- www.LowCarbDietitian.com
- www.DitchTheCarbs.com
- www.ZoeHarcombe.com
- www.IBreatheImHungry.com
- <http://AllDayIDreamAboutFood.com>
- <http://LowCarbDiets.About.com>



Questions?



- E-mail us at drweed@cox.net
- Registered Dietitian Amanda Raposo and I will post your questions (without using your name) and our answers for all to see at:
www.gfrpartners.com/LowCarbQuestions.html
For more, go to gfrpartners.com/LowCarbs.html