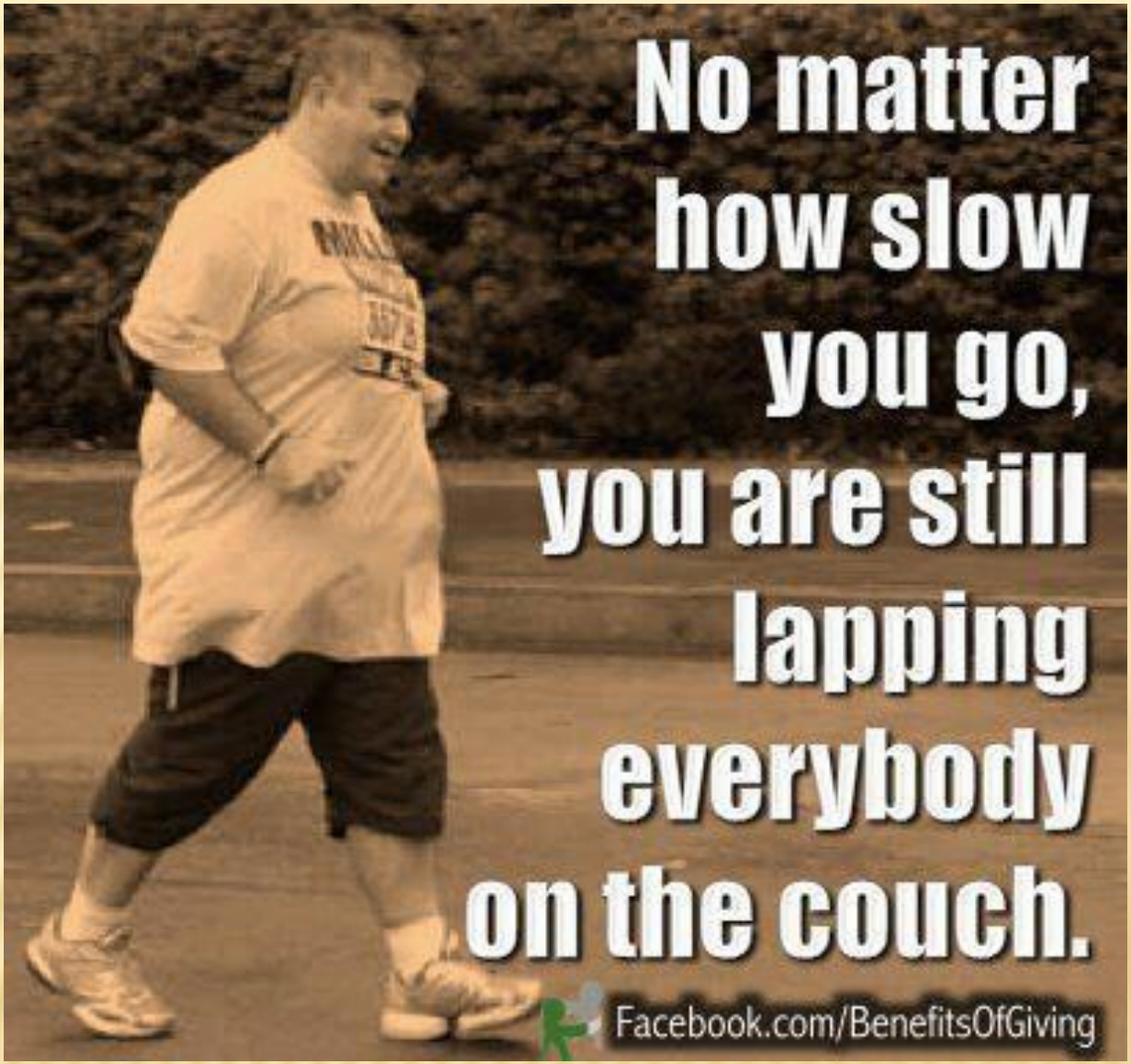
Part 1


No matter how slow you go, you are still lapping everybody on the couch.
Facebook.com/BenefitsOfGiving

- ✓ In 2012, 29.1 million Americans, or 9.3% of the population, had diabetes
- ✓ In 2012, 86 million Americans age 20 and older had pre-diabetes condition in which blood glucose levels are higher than normal but are not high enough for a diagnosis of diabetes.
- ✓ This is up from 79 million in 2010.

http://www.diabetes.org/diabetes-basics/statistics/

Labs we will look at

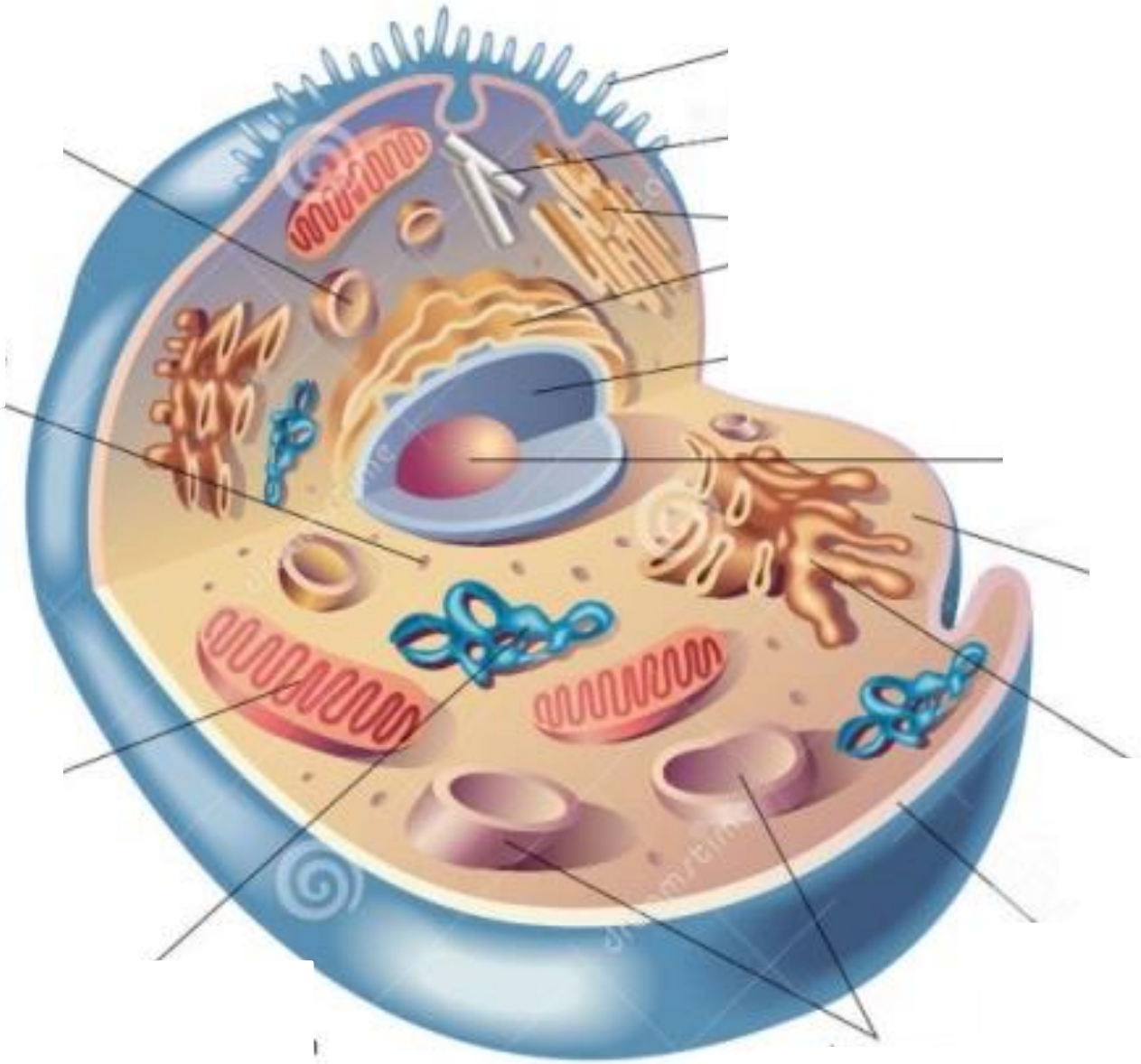
- ✓Fasting Insulin less than 5
- ✓Fasting Glucose 80-85
- ✓A1C less than 5.3
- ✓eGFR greater than 80 (kidney Marker)
- ✓Creatinine less than 90 (Kidney Marker)

INSULIN		**23 H**	<23 uIU/mL
	Insulin analogues may demonstrate non-linear cross-reactivity in this assay. Interpret results accordingly.		

GLUCOSE		**108 H**	65-99 mg/dL
			Fasting reference interval
UREA NITROGEN (BUN)	20		7-25 mg/dL
CREATININE		**1.05 H**	0.50-0.99 mg/dL
	For patients >49 years of age, the reference limit for Creatinine is approximately 13% higher for people identified as African-American.		
eGFR NON-AFR. AMERICAN		**56 L**	> OR = 60 mL/min/1.73m2

HEMOGLOBIN A1c		**5.9 H**	<5.7 % of total Hgb
	According to ADA guidelines, hemoglobin A1c <7.0% represents optimal control in non-pregnant diabetic patients. Different metrics may apply to specific patient populations. Standards of Medical Care in Diabetes-2013. Diabetes Care. 2013;36:s11-s66		
	For the purpose of screening for the presence of diabetes		
	<5.7%	Consistent with the absence of diabetes	
	5.7-6.4%	Consistent with increased risk for diabetes (prediabetes)	
	>or=6.5%	Consistent with diabetes	

Your only as healthy as your individual cells



You are only as healthy as your INDIVIDULIZED CELLS

Have you been told your lab tests are NORMAL but you still don't feel good?

65-99 Glucose

Disease | No Disease | Disease

80-85 Glucose

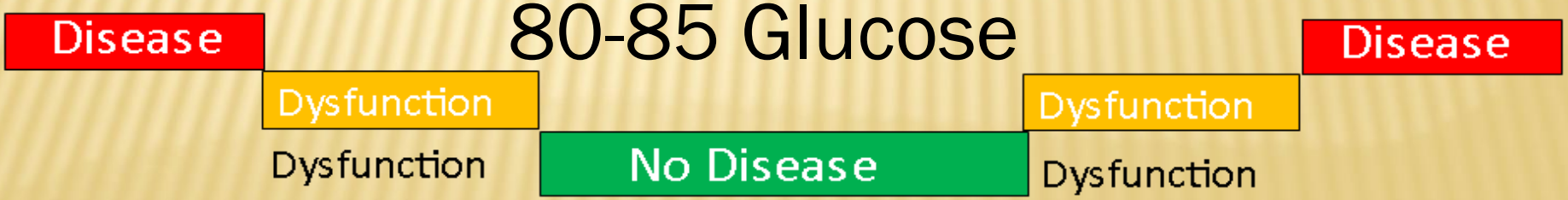
Disease | Dysfunction | Dysfunction | Disease

Dysfunction | No Disease | Dysfunction

Kaiser Study 46,578 people

- Every point over 84 fasting glucose represented a 6% increased risk of becoming diabetic

Fasting glucose of 94 causes a 60% increase in developing diabetes



Blood Sugar Regulation

Knowing now that such shrinkage can happen as a result of blood sugar spikes in the “normal” range has tremendous implications for anyone who eats blood sugar boosting foods (i.e. carbohydrates)

People with diabetes are 1.75 times more likely to develop dementia of any kind

Grain Brain

Blood Sugar Regulation

Becoming diabetic doubles your risk developing Alzheimer’s disease.

Alzheimer's 100 million people will be effected by 2050

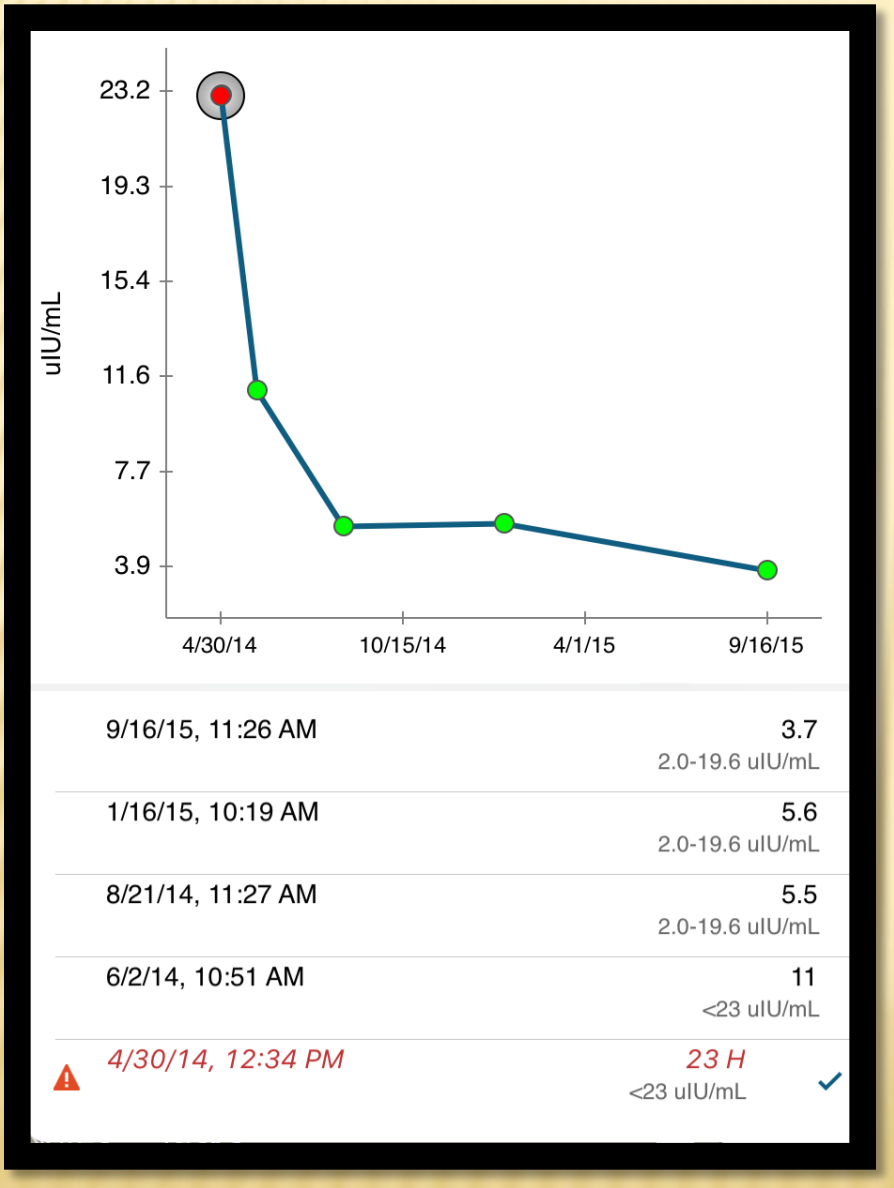
Alzheimer's disease, and depression is unlike the rest of the body, the brain has NO PAIN receptors, so we can’t feel inflammation in the brain.

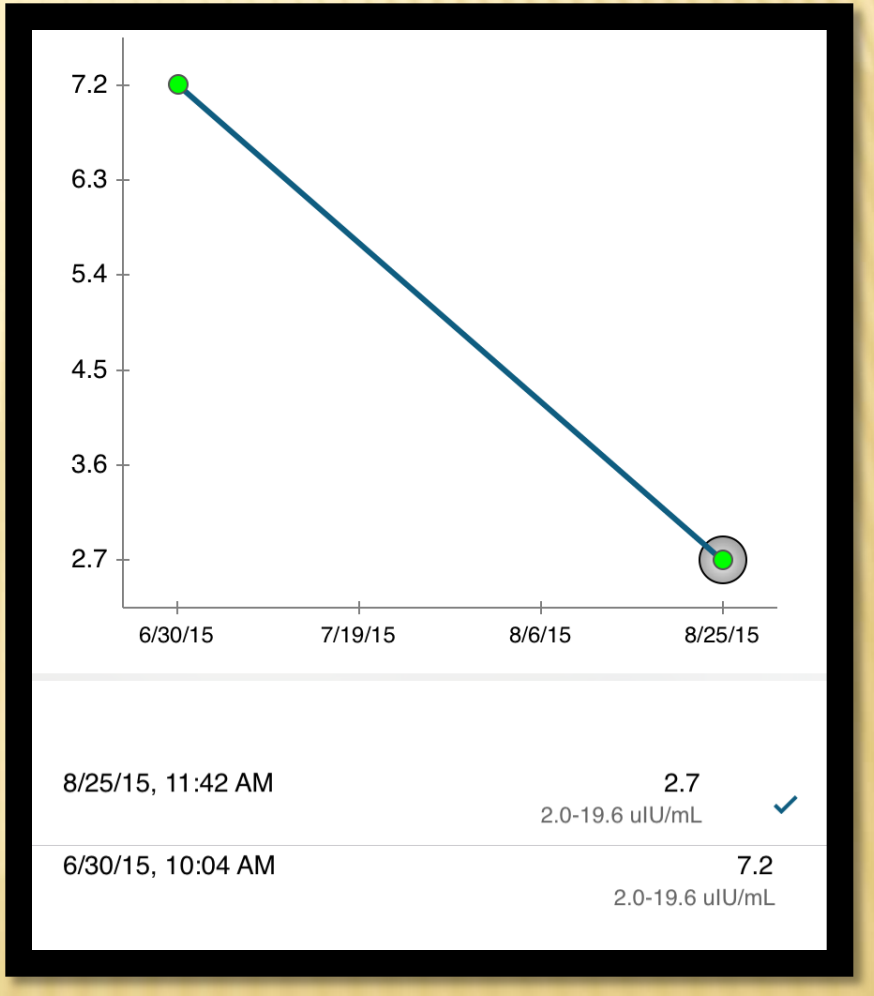
Grain Brain

Blood sugar Regulation

In 1994 the American Diabetic Association recommended to consume 60-70% of calories from carbohydrates

Fasting Insulin less than 9





Vote:

Which breakfast causes high sugar levels?

Low Fat

Cheerios

Bandana

OJ

Skim milk

High Fat

5 eggs (Very high in cholesterol)

Bacon (makes very thing better)

Cheese (high in saturated fat)

Avocados (I use this for guacamole)

Coconut milk (what's that)

Part 2

60 Minutes Dr Lustig MD

Extra line breaks in this message were removed.

From: weg119@aol.com
To: rlustig@peds.ucsf.edu
Cc:
Subject: Re sugar question

Dr. Lustig
I was re-watching your lecture and I have a few questions. When you compare the glucose cycle to the fructose cycle and both produce VLDL.
What would be the quantity difference for the procduction of VLDL when comparing the two cycles. From what I gather the glucose cycle would produce a minute amount not enough to be a issue??

Hugh

-----Original Message-----
From: Lustig, Robert <rlustig@peds.ucsf.edu>
To: weg119@aol.com
Sent: Fri, Mar 12, 2010 3:30 pm
Subject: Re: sugar: the bitter truth

March 12th 2010

Thank you, Hugh for your kind email.

Attached is a pdf with most of the same information for your use.

Robert Lustig, M.D.

> Dr. Lustig
> I just saw your video and it was amazing. I was wondering if I could
> get a copy of your power point? I would be willing to buy a copy.
The
> graphic and the stats were great.
>
> Hugh
>

What causes this?

Over eating

A person gains 50 pounds over 25 years. That would be 2 pounds per year for 25 y

Lets to the th:

There is 35 calories in one pound o gain 2 pou extra per year a pers to eat an extr 000 extra calories per

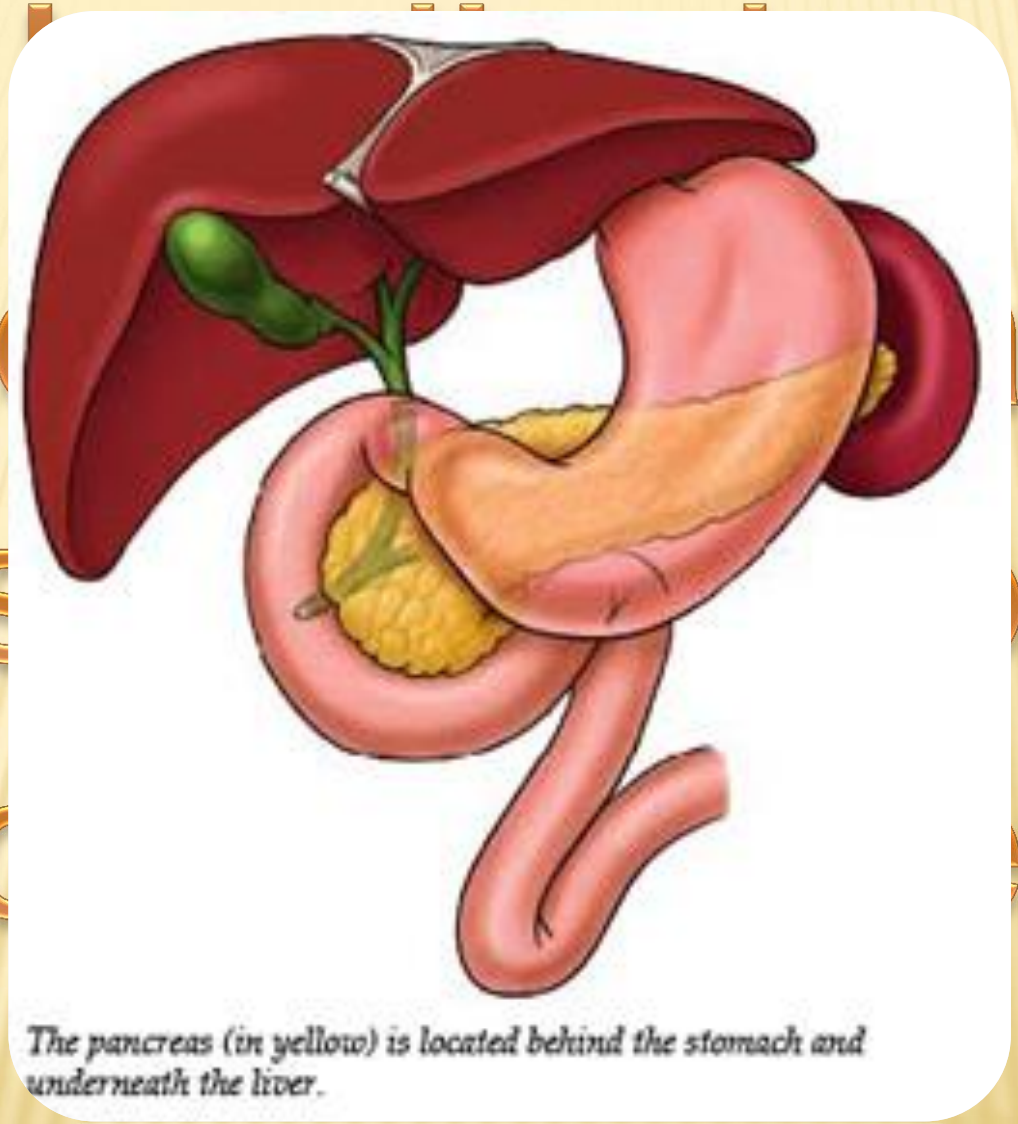
.

7000 65 (days in a ye

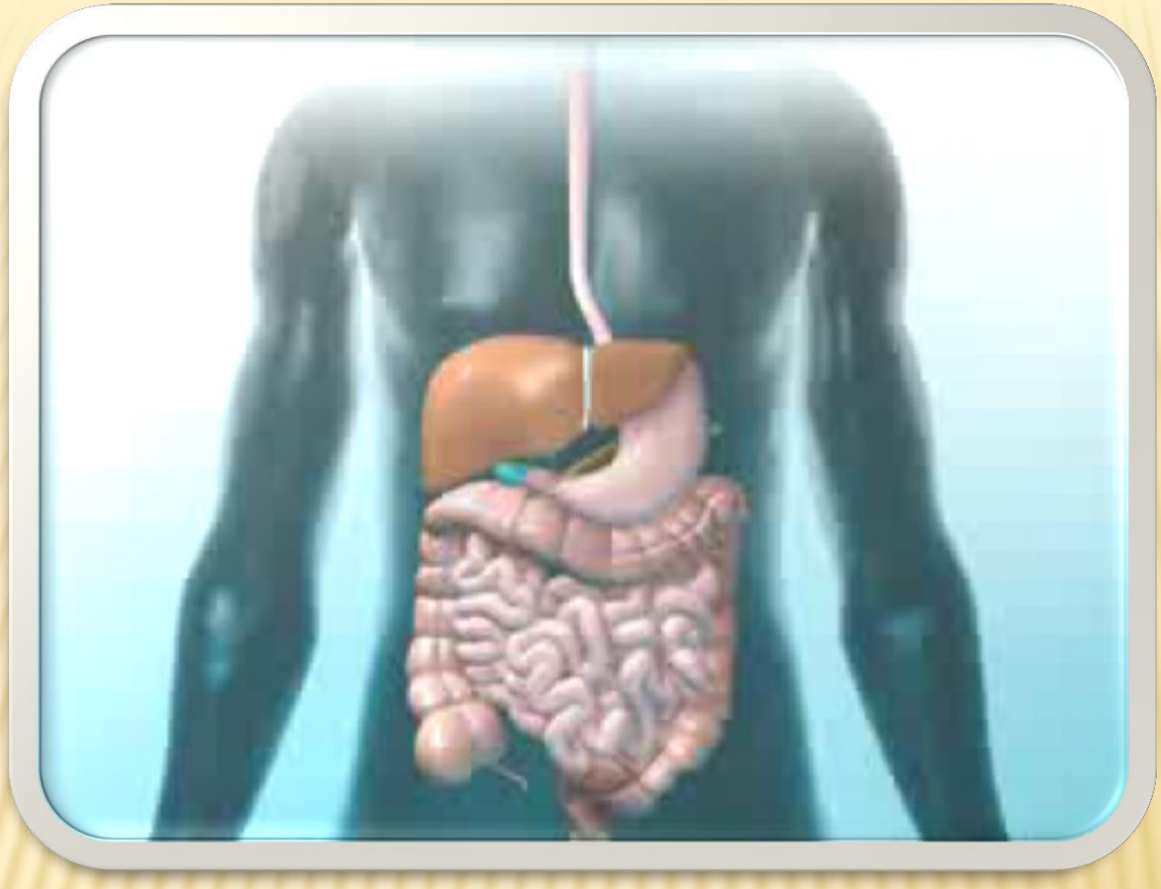
20 calories per day!!!!!!

1% over eating on a 2000 calories per day

h t
mus lled
to yo evels

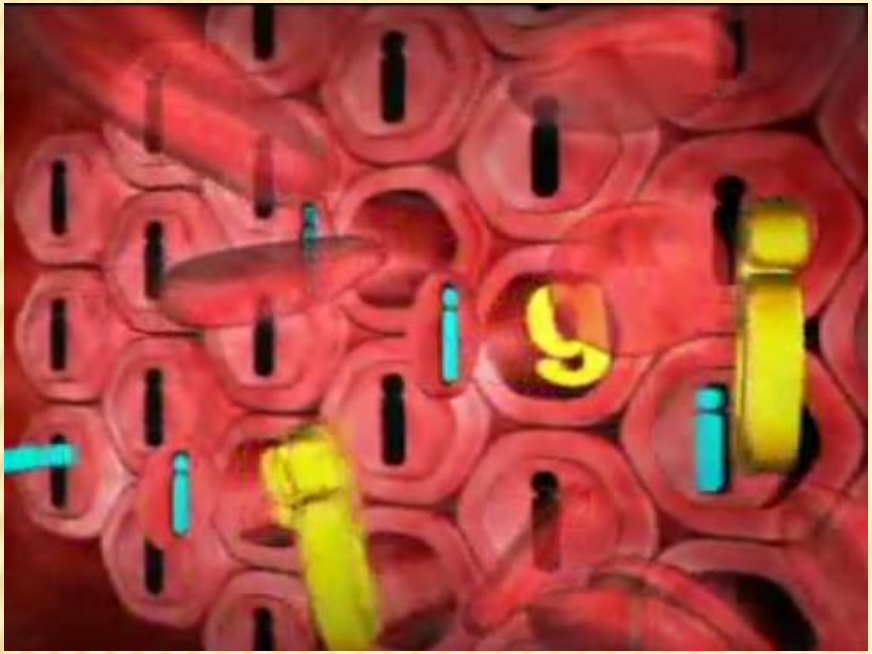


The pancreas (in yellow) is located behind the stomach and underneath the liver.



Pancreas working

Insulin is the key that allows glucose to enter the cell



Normal

Pre-diabetic or Diabetic

- Higher glucose
- Higher Insulin

Insulin

The hormone of fat storage

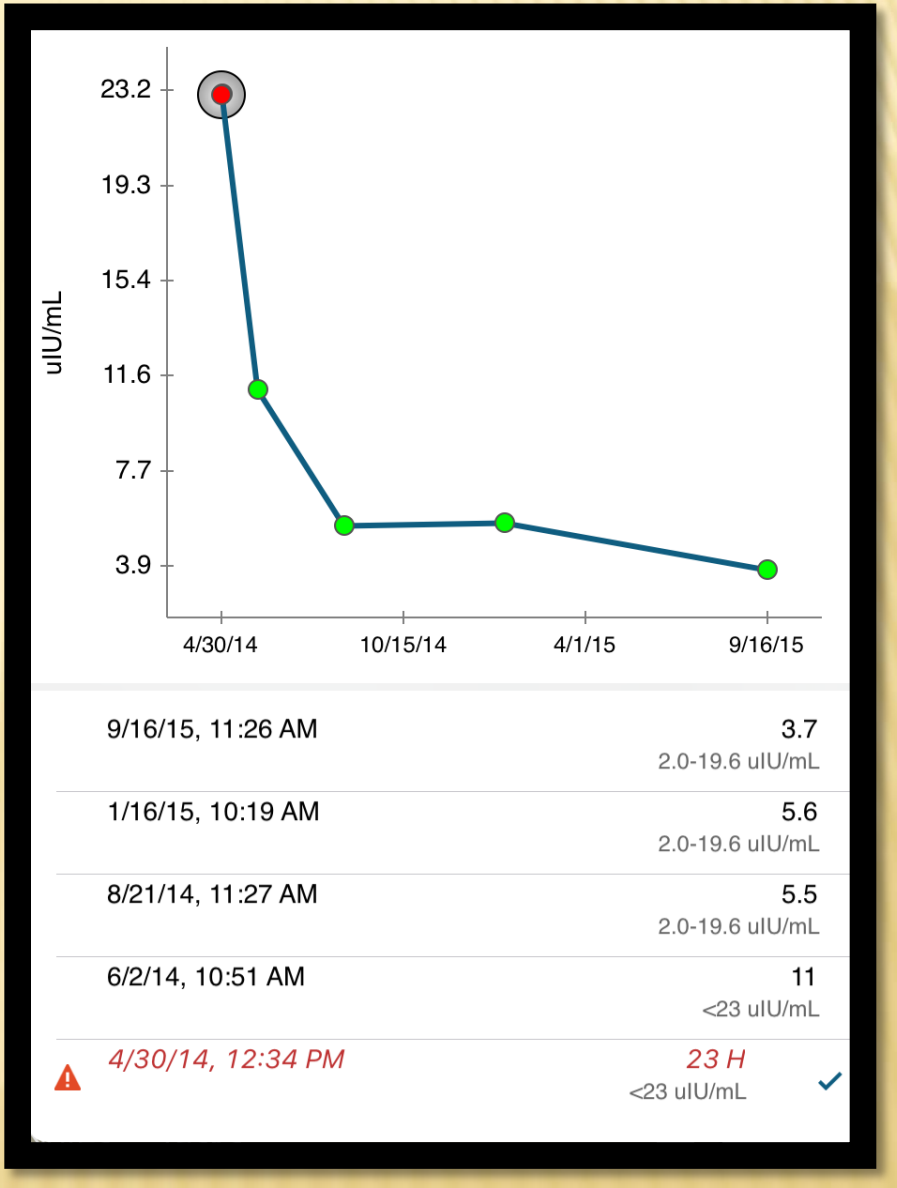
They get fat

being put in your cell what happens to your cells??????

Fasting insulin greater than 6 is putting things into your cells

High insulin

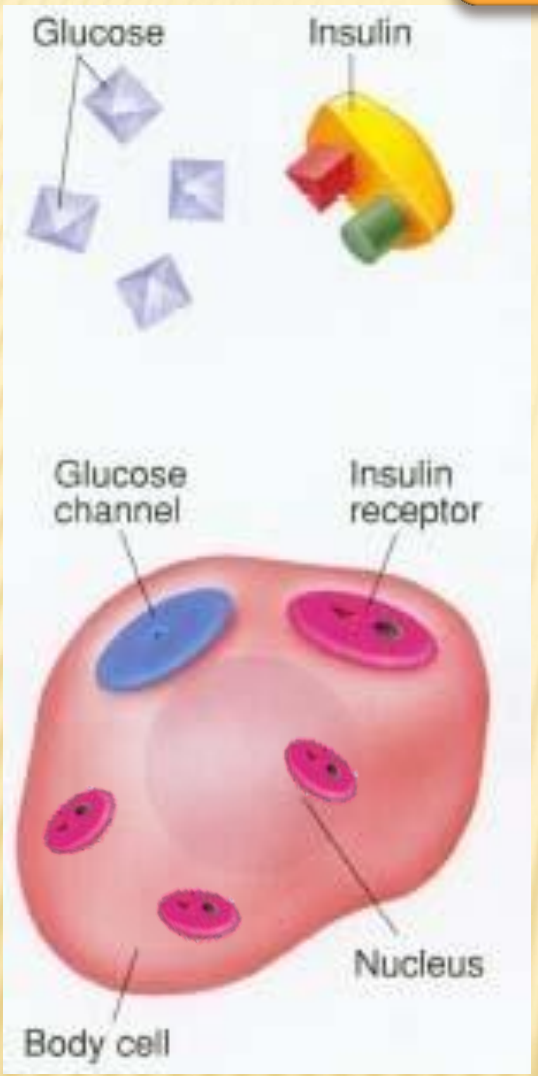
Low insulin

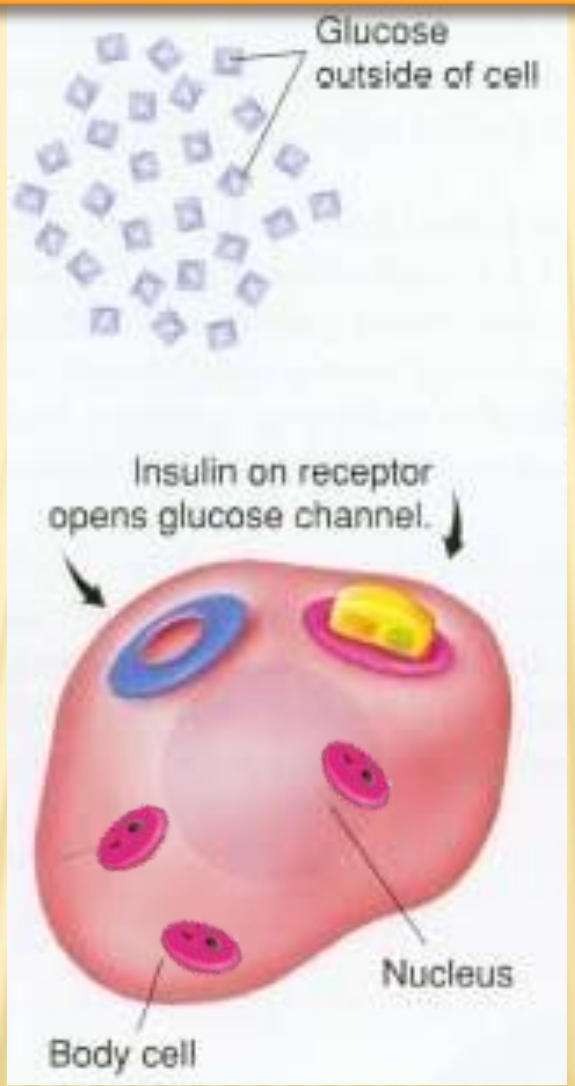


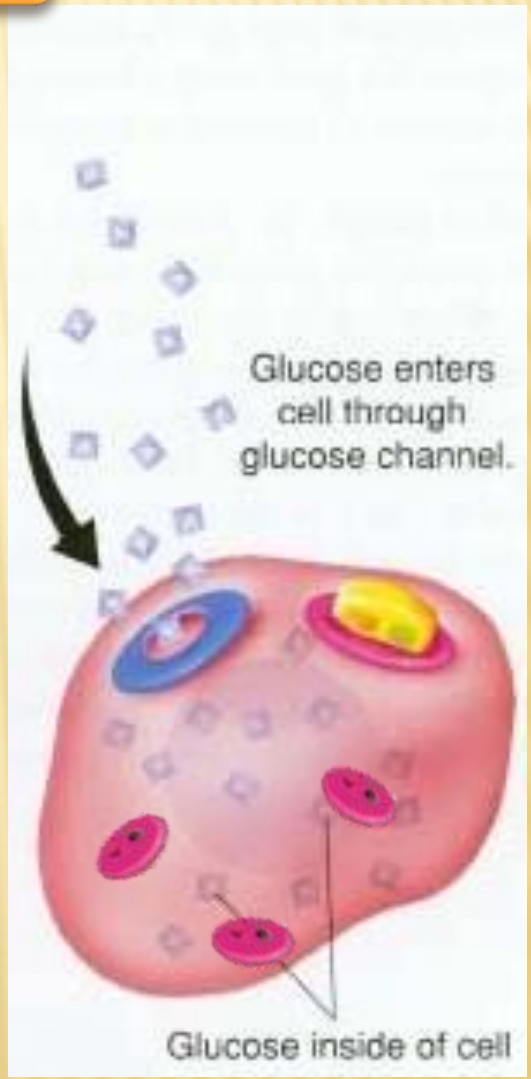
9/16/15, 11:26 AM	3.7 2.0-19.6 uIU/mL	
1/16/15, 10:19 AM	5.6 2.0-19.6 uIU/mL	
8/21/14, 11:27 AM	5.5 2.0-19.6 uIU/mL	
6/2/14, 10:51 AM	11 <23 uIU/mL	
4/30/14, 12:34 PM	*23 H* <23 uIU/mL	✓

High insulin causes this!!!!

Normal healthy cell

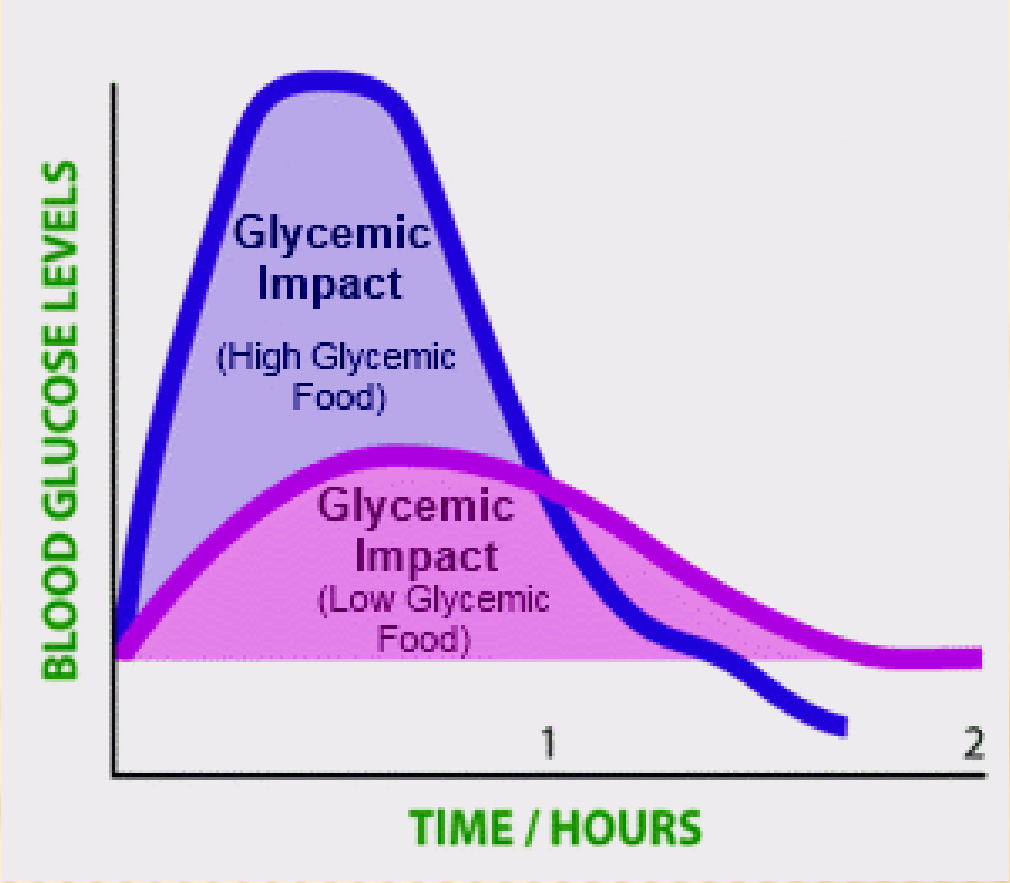






Part 3

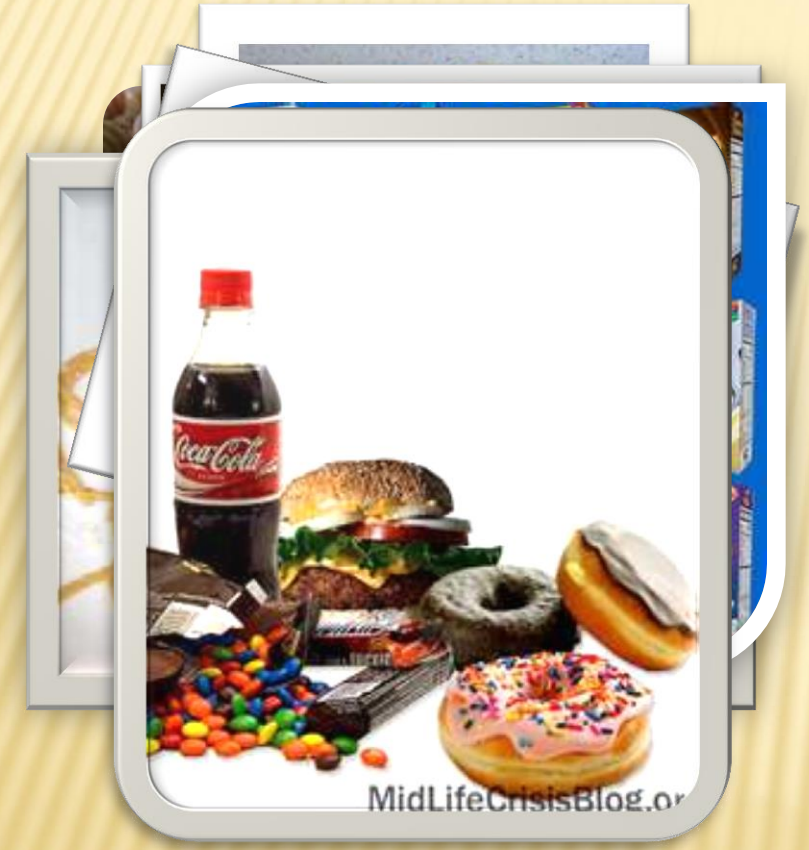
Glycemic Index



The glycemic index: is a measure of the effects of carbohydrates on blood sugar levels. Carbohydrates that break down quickly during digestion and release glucose(sugar) rapidly into the bloodstream have a high glycemic index; carbohydrates that break down more slowly, releasing glucose (sugar) more gradually into the bloodstream, have a low glycemic index

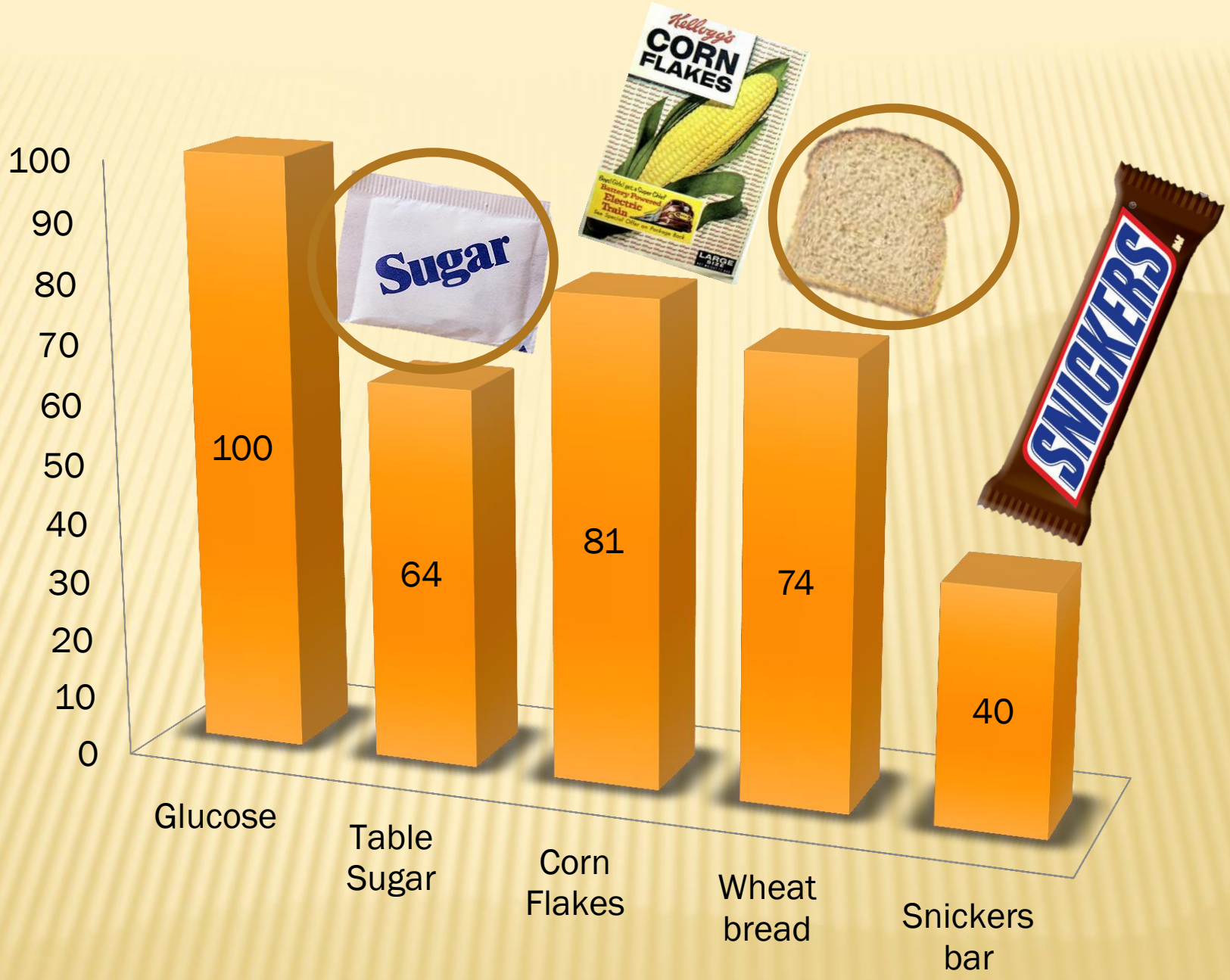
http://en.wikipedia.org/wiki/Glycemic_index

Foods that increase insulin

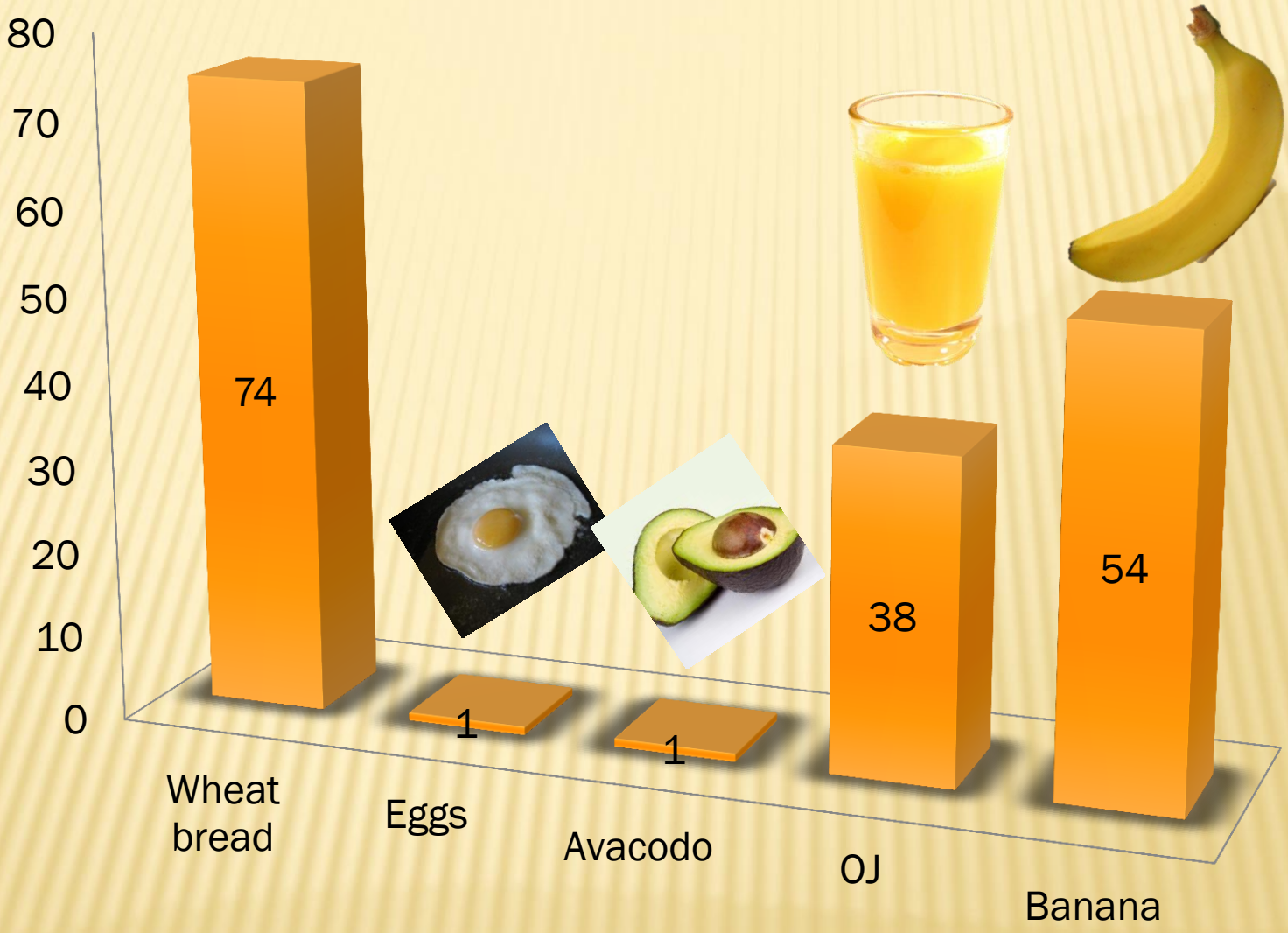


Foods that don't increase insulin


High GI
(70 and above)
Medium GI
(56 to 69)
Low GI
(55 and under)



http://www.diabetesnet.com/food-diabetes/glycemic-index



http://www.health.harvard.edu/newsweek/Glycemic_index_and_glycemic_load_for_100_foods.htm

http://www.diabetesnet.com/food-diabetes/glycemic-index

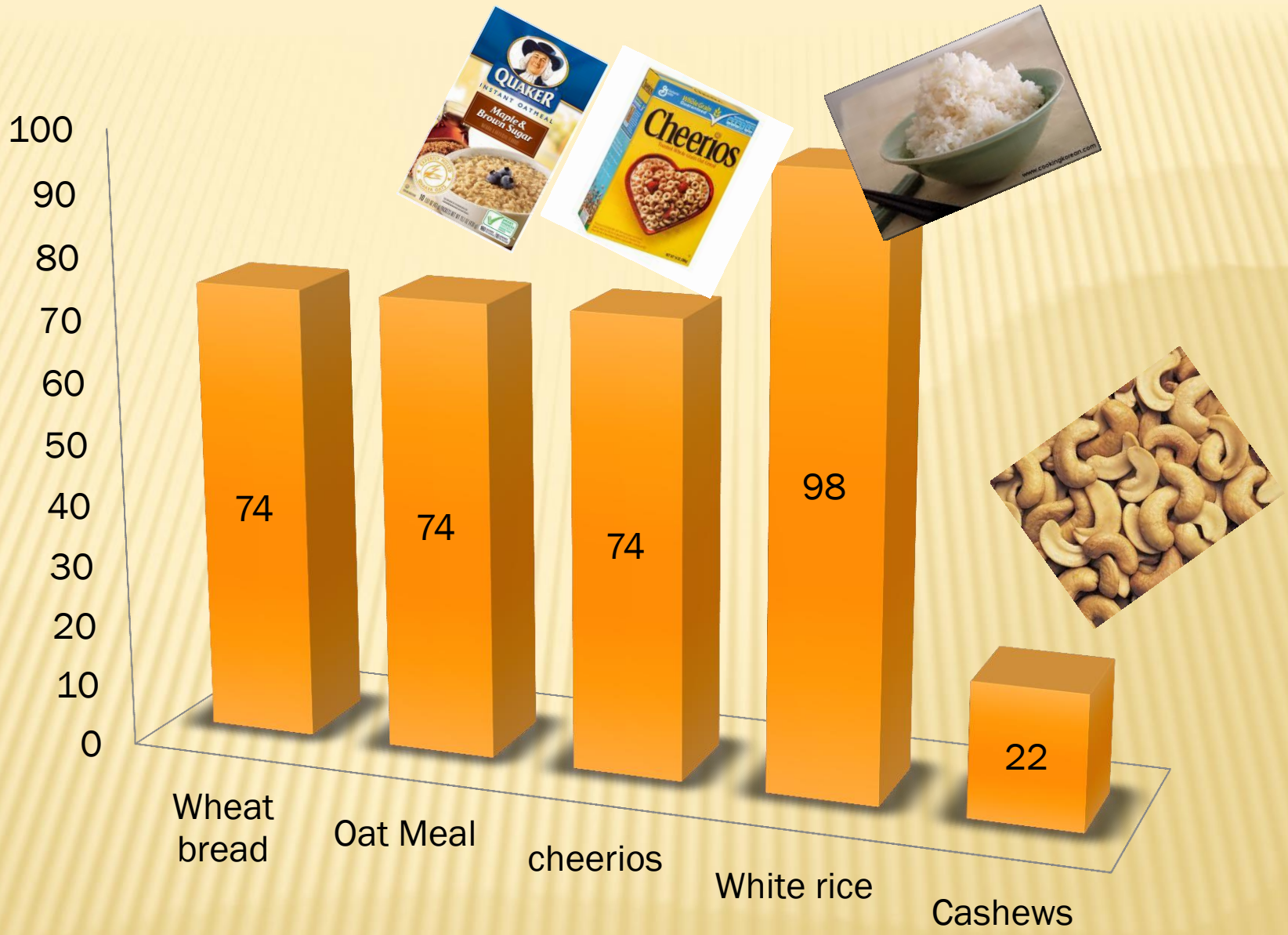
70
60
50
40
30
20
10
0

15
69
70
0
15

Spinach
Shredded Wheat
potato mashed
cheese
meat

http://www.health.harvard.edu/newsweek/Glycemic_index_and_glycemic_load_for_100_foods.htm

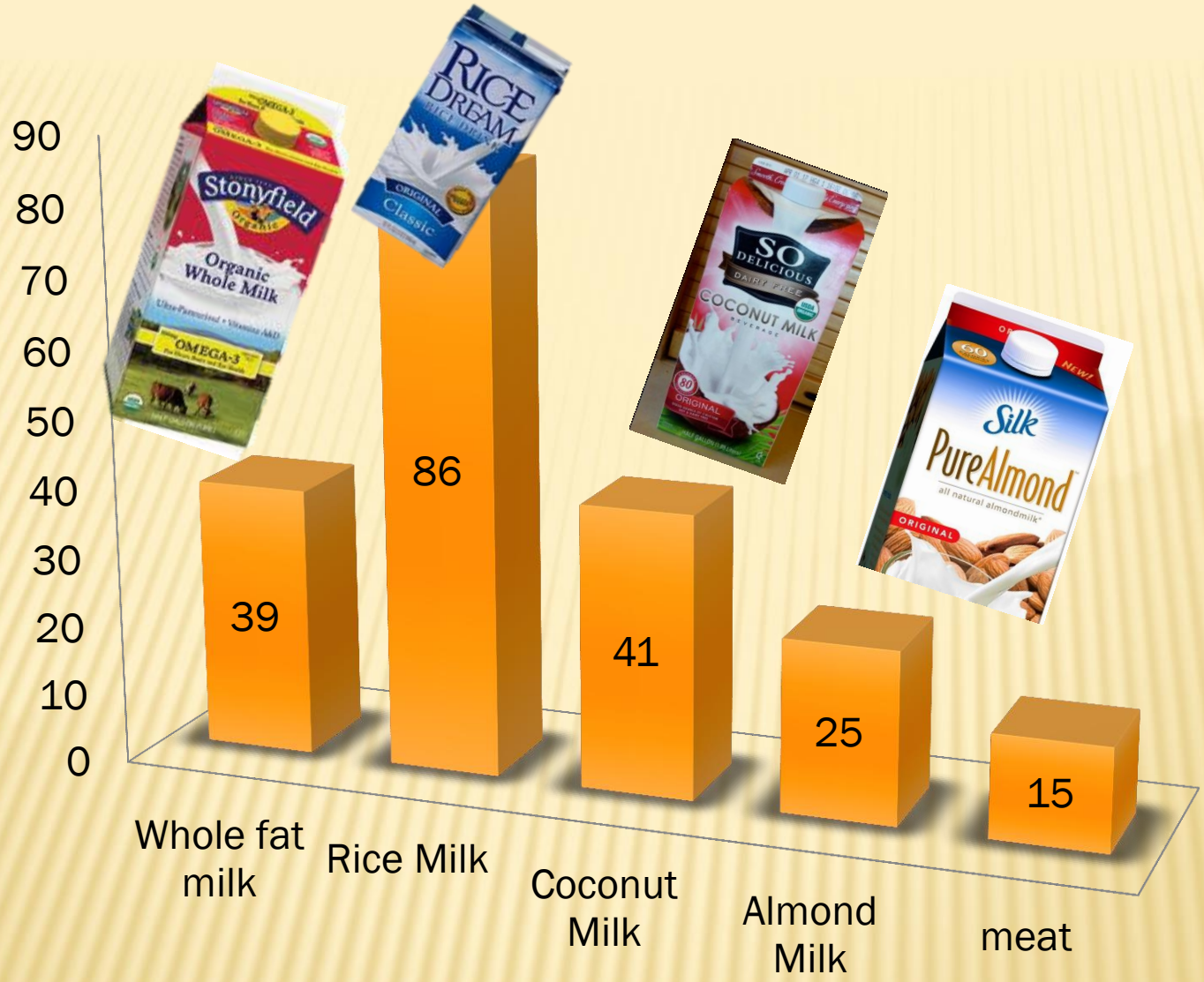
http://www.diabetesnet.com/food-diabetes/glycemic-index



http://lowcarbdiets.about.com/od/whattoeat/a/glycemicindlist_2.htm

http://www.health.harvard.edu/newsweek/Glycemic_index_and_glycemic_load_for_100_foods.htm

http://www.diabetesnet.com/food-diabetes/glycemic-index



http://ginews.blogspot.com/2010/04/food-of-month.html Almond milk

http://www.the-gi-diet.org/lowgifoods/ coconut milk

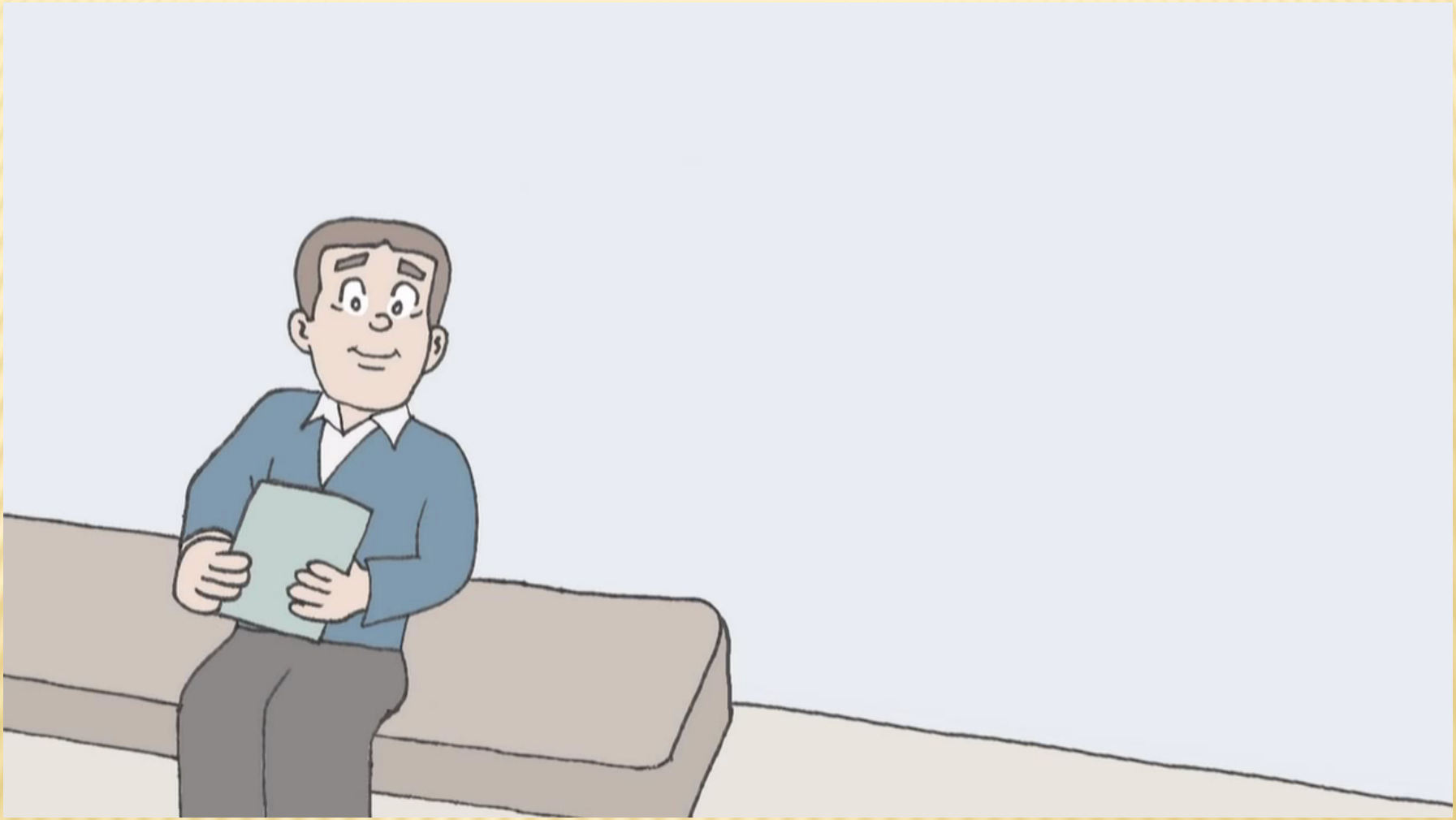
http://www.sparkpeople.com/resource/nutrition_articles.asp?id=498 (rice milk)

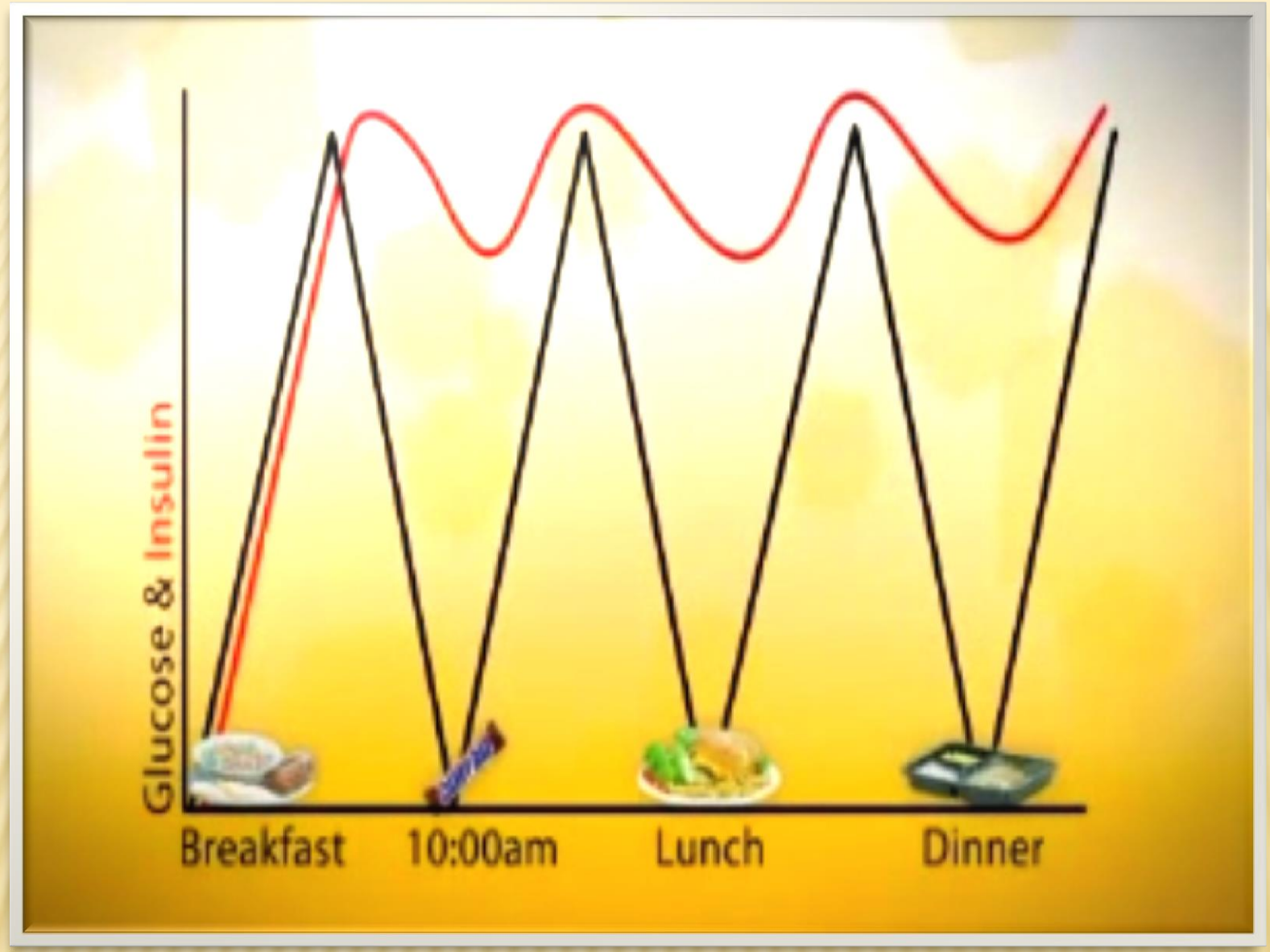
http://www.health.harvard.edu/newsweek/Glycemic_index_and_glycemic_load_for_100_foods.htm

http://www.diabetesnet.com/food-diabetes/glycemic-index

Date	Fasting	Food	1 hour	2 hours
10-4-12	114	3 eggs	106	104
10-14-12	108	2 slices toast, butter, coffee	167	116
10-9-12	106	English muffin, peanut butter, jelly, coffee	171	128
10-2-12	109	Cheerios, milk 2%, coffee	163	111
10-1-12	120	1 cup oatmeal, 1tsp sugar, coffee	191	111

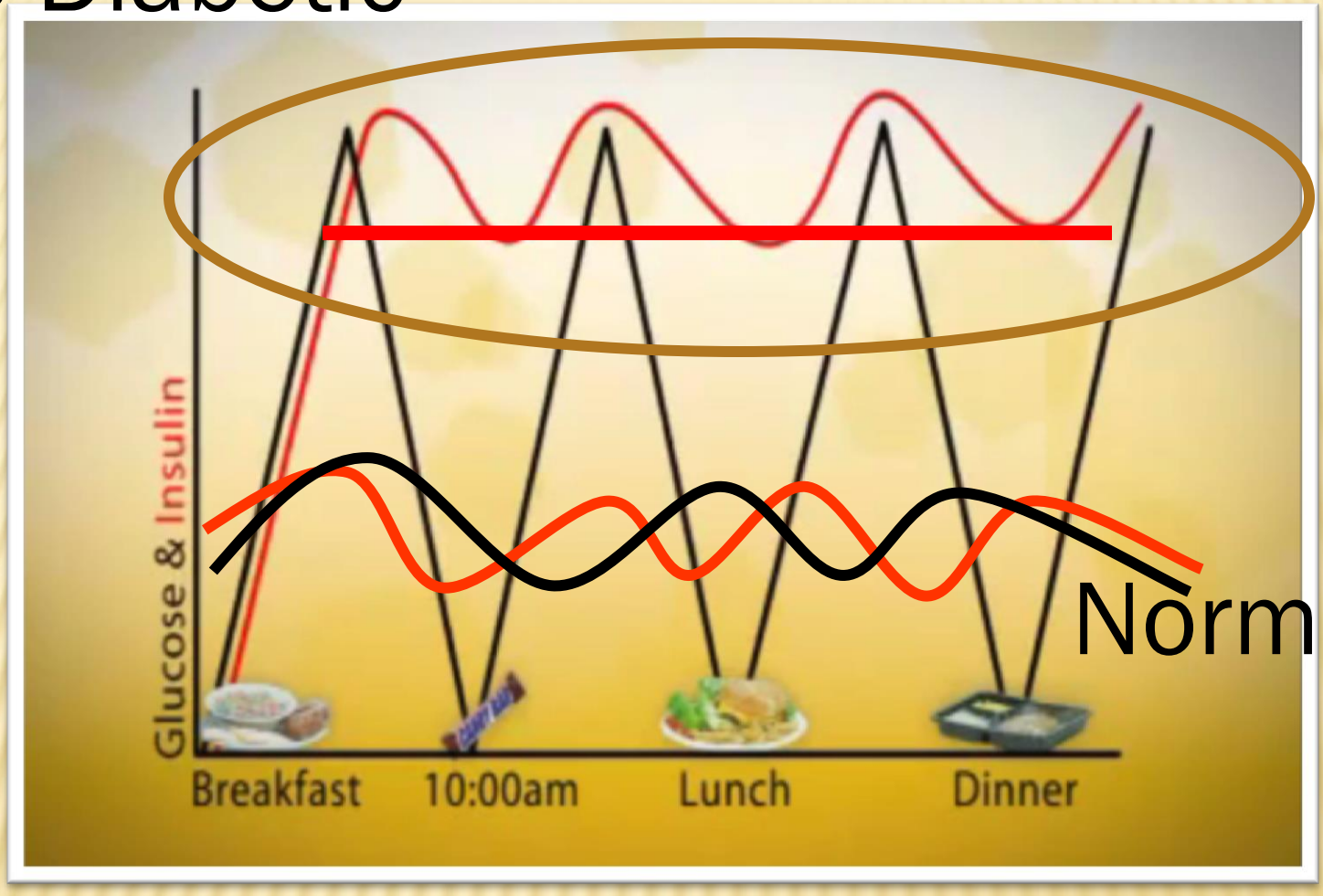
Part 4



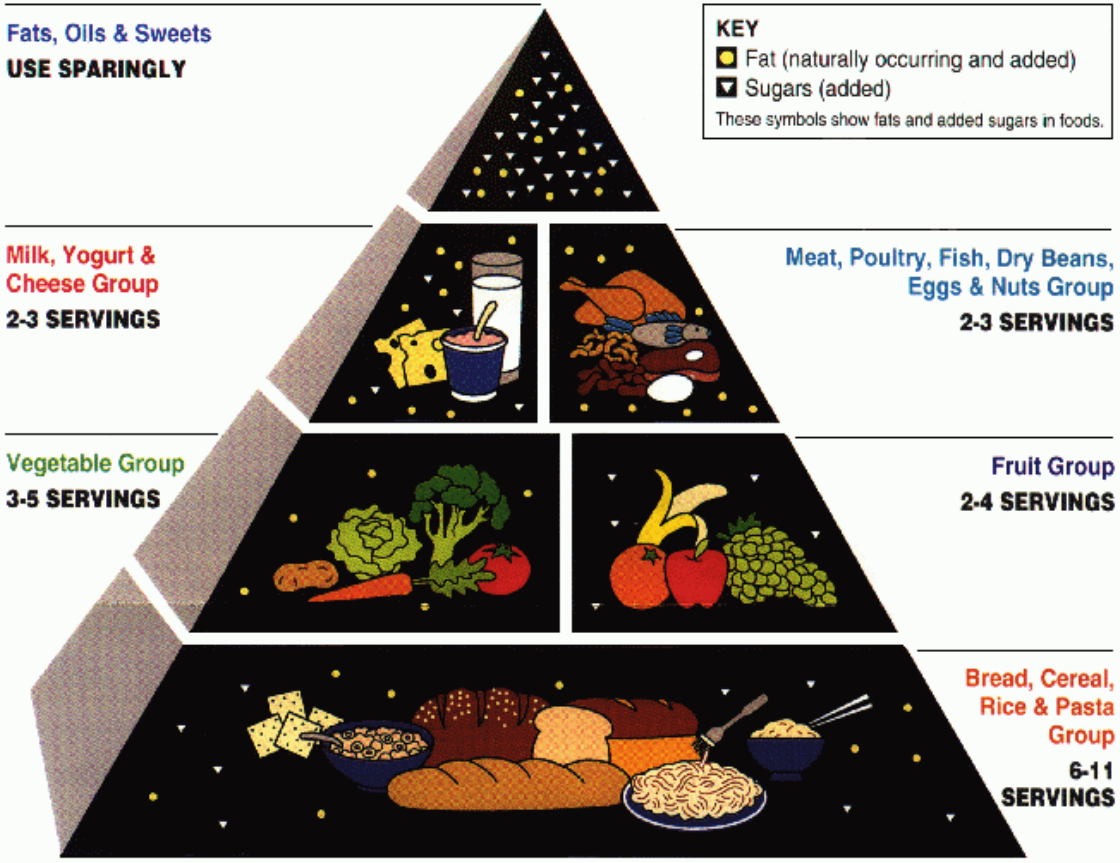


1) Your cells never eat more than they need EXCEPT FAT CELLS.
2) Free fatty acids that are used for energy come from your stored fat.
3) The free fatty acids **DO NOT** need insulin to get into your cells and used for energy.
4) If there is insulin present you **CAN'T** access fat from your fat cells

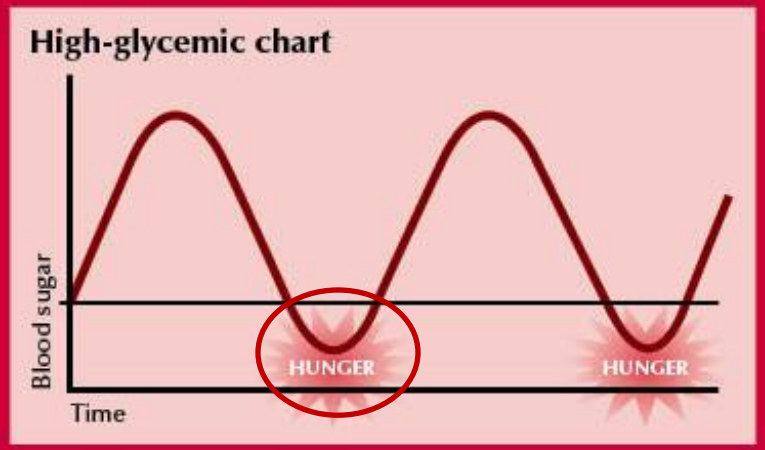
Pre-Diabetic




The Low-Carb Food Pyramid
Fibrous-Fruits
Fats
Oils
Nuts
Fibrous-Veggies
Eggs
Cheese
Proteins!
www.carbohealth.com
Pyramid image provided by www.carbhealth.com


Fats, Oils & Sweets
USE SPARINGLY
KEY
Fat (naturally occurring and added)
Sugars (added)
These symbols show fats and added sugars in foods.
Milk, Yogurt & Cheese Group
2-3 SERVINGS
Meat, Poultry, Fish, Dry Beans, Eggs & Nuts Group
2-3 SERVINGS
Vegetable Group
3-5 SERVINGS
Fruit Group
2-4 SERVINGS
Bread, Cereal, Rice & Pasta Group
6-11 SERVINGS

YOUR HEALTH AND THE GLYCEMIC INDEX



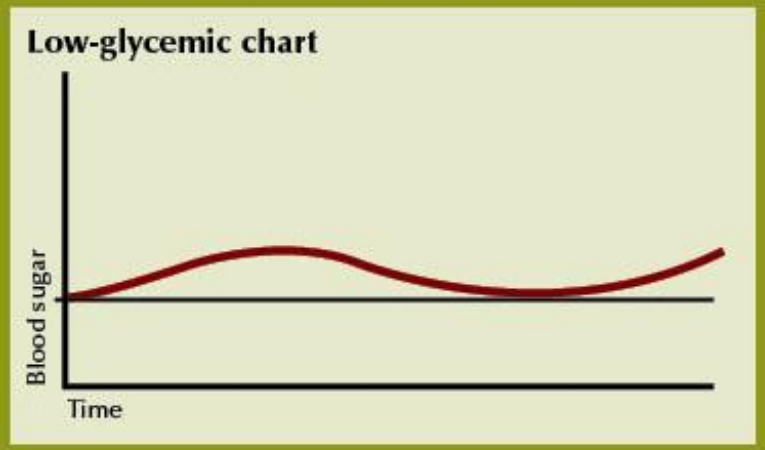
RELEASE ENERGY QUICKLY

↓

FEEL HUNGRY SOONER

↓

EAT MORE



RELEASE ENERGY SLOWLY

↓

FEEL FULL LONGER

↓

EAT LESS

YOU CAN RESET YOUR EATING HABITS...

Insulin levels, for the most part, are determined by the carbohydrate-content of our die e carbohyd ***fat*** in the di ce verse. Th nd burn it, which is what we want to do with it, is to lower insulin. This has been known since the early 1960s.

lower the fat in the diet, the ***higher the insulin (more carbs)***

higher the fat in the diet the ***lower the insulin (less carbs)***

http://www.garytaubes.com/blog/

Vote:

Which breakfast causes high blood sugar?

Low Fat

Cheerios

Bandana

OJ

Skim milk

High Fat

5 eggs (high cholesterol)

Bacon (make very thing better)

Cheese (saturated fat)

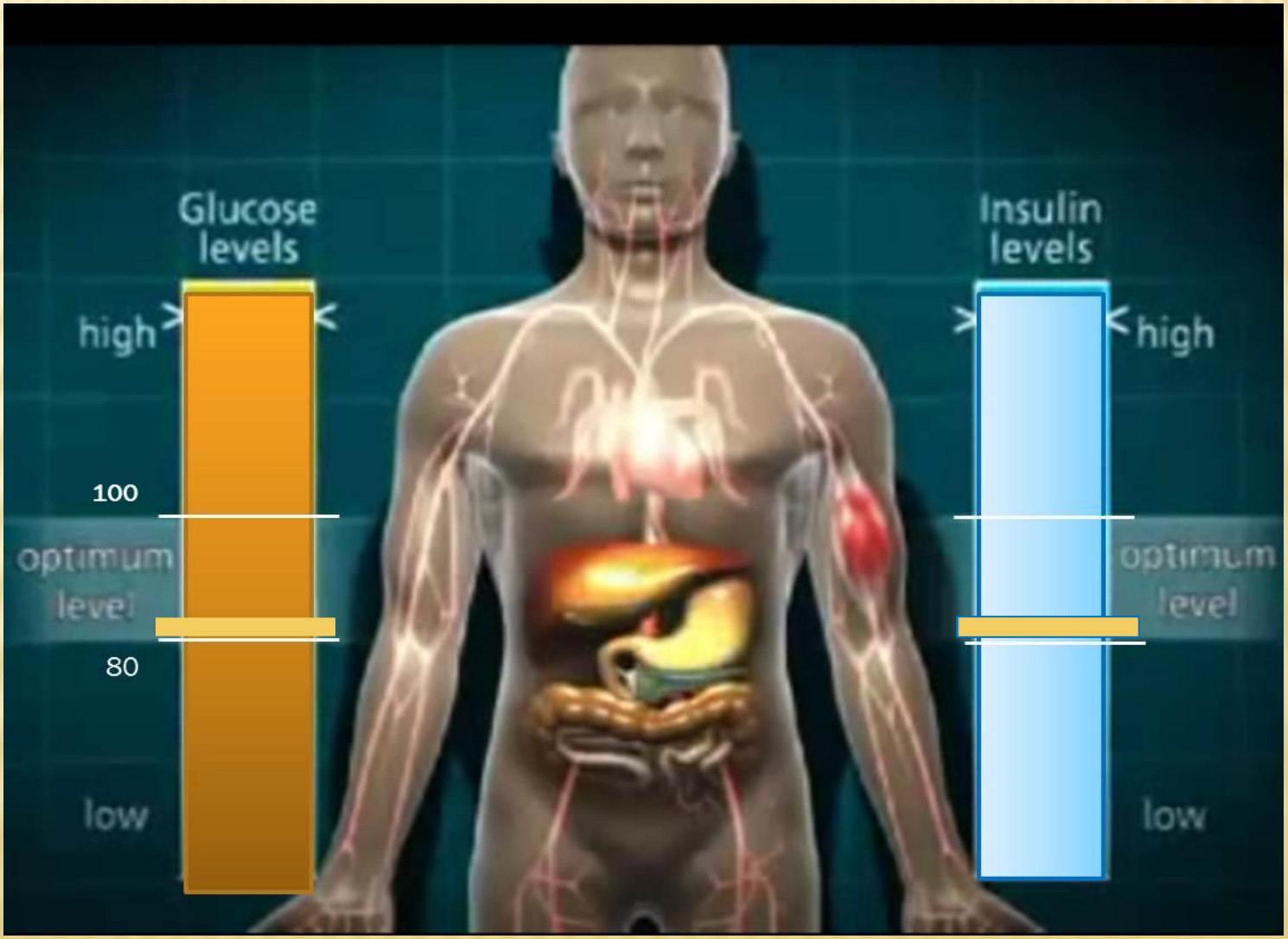
Avocados

Coconut milk (what's that!!!!)

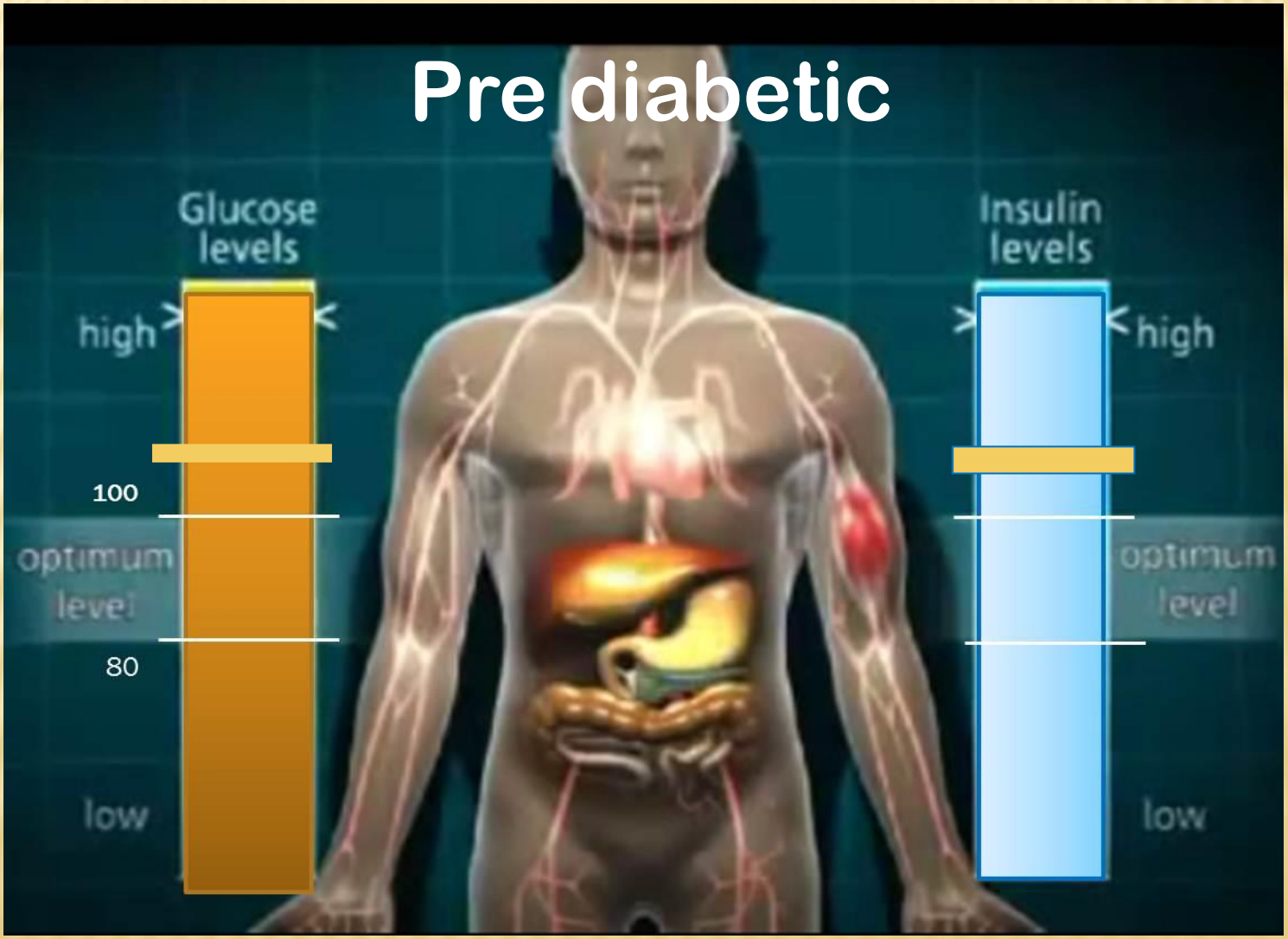
Xander rocking to 80’s music

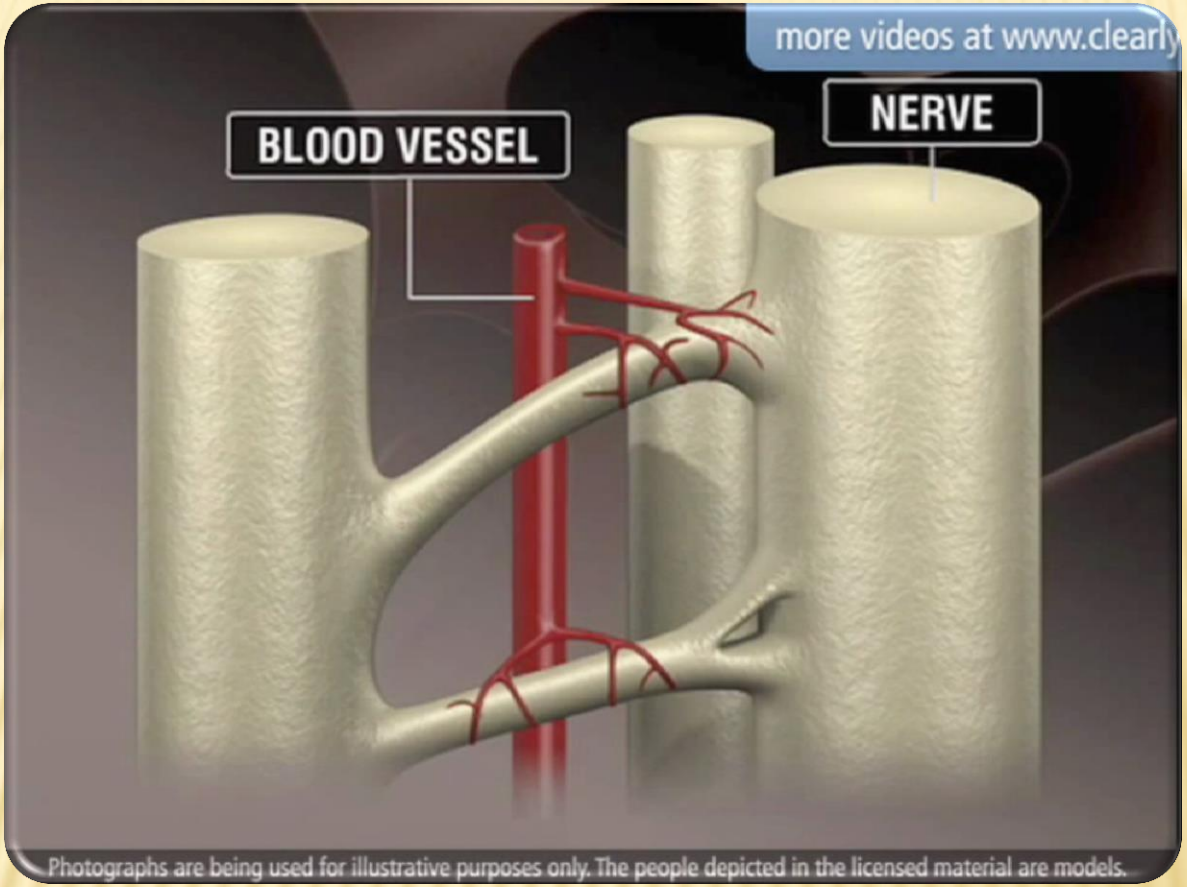
Fasting glucose 80-85 and fasting insulin less than 5

Low carbohydrate diet



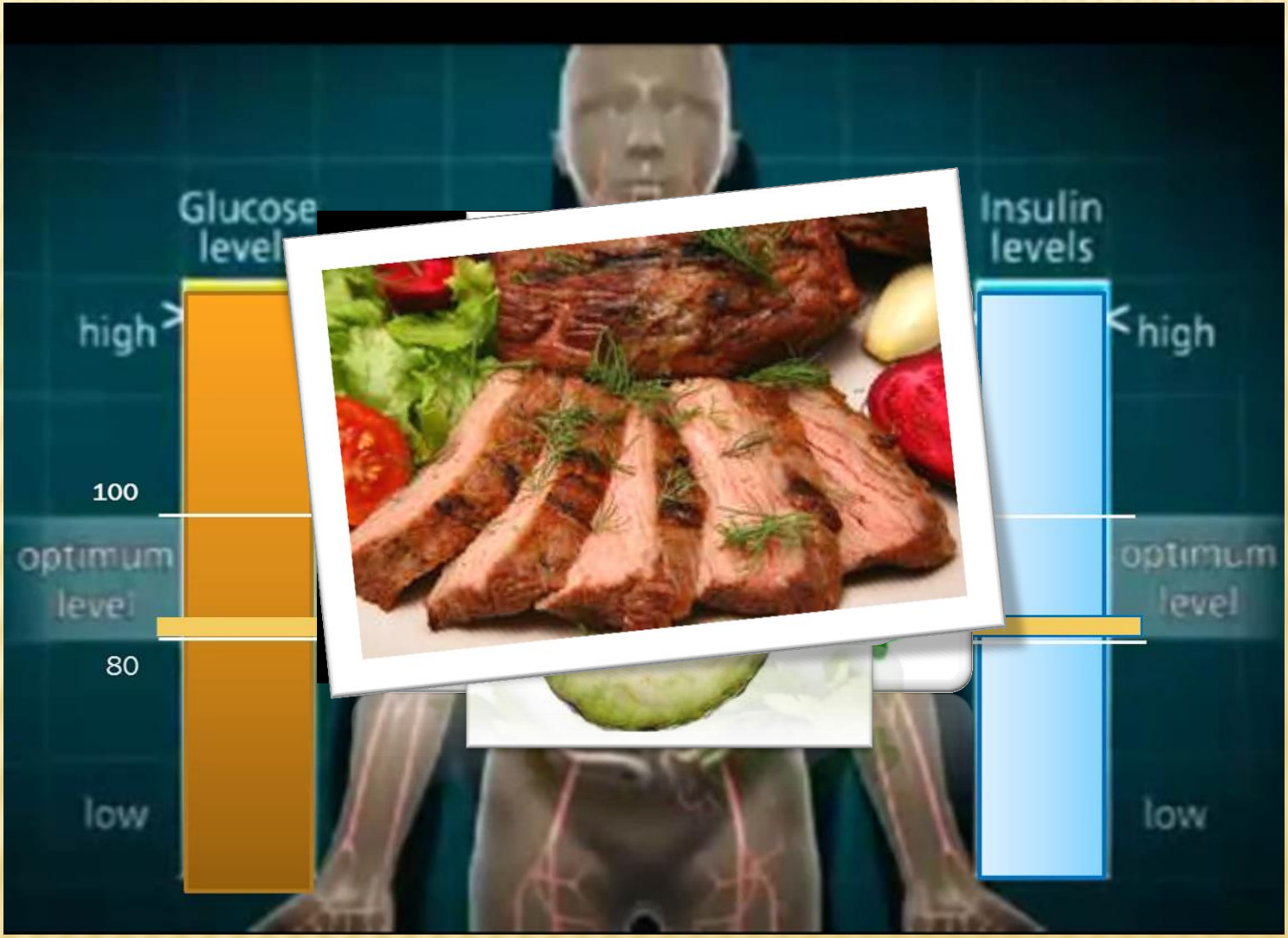
Fasting glucose 105 and fasting insulin less than 11



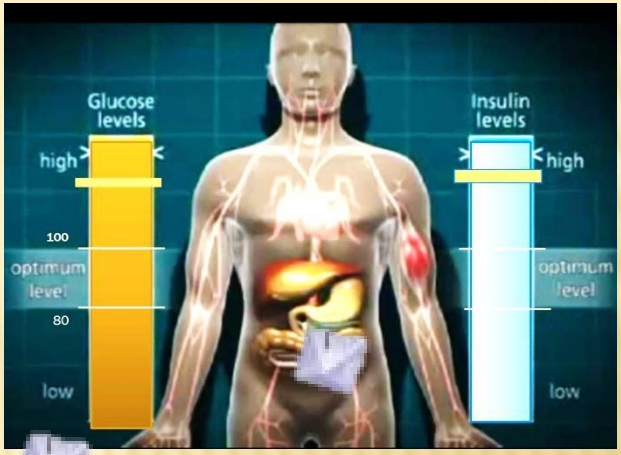


Diabetic Neuropath


Insulin
levels
high
optimum
level
low
MidLifeCrisisBlog.or


Glucose level
high
100
optimum level
80
low
Insulin levels
high
optimum level
low

Insulin resistance



Muscle cell
Heart cell
Digestion cell

Basic Skills for Living With Diabetes

Fourth edition

Developed by the Allina Diabetes Education Council

Disclaimer:

This publication is for general information only and is not intended to provide specific advice or recommendations for any individual. The information it contains cannot be used to diagnose medical conditions or prescribe treatment. The information provided is designed to support, not replace, the relationship that exists between a patient and his/her existing physician. For specific information about your health condition, please contact your health care provider.

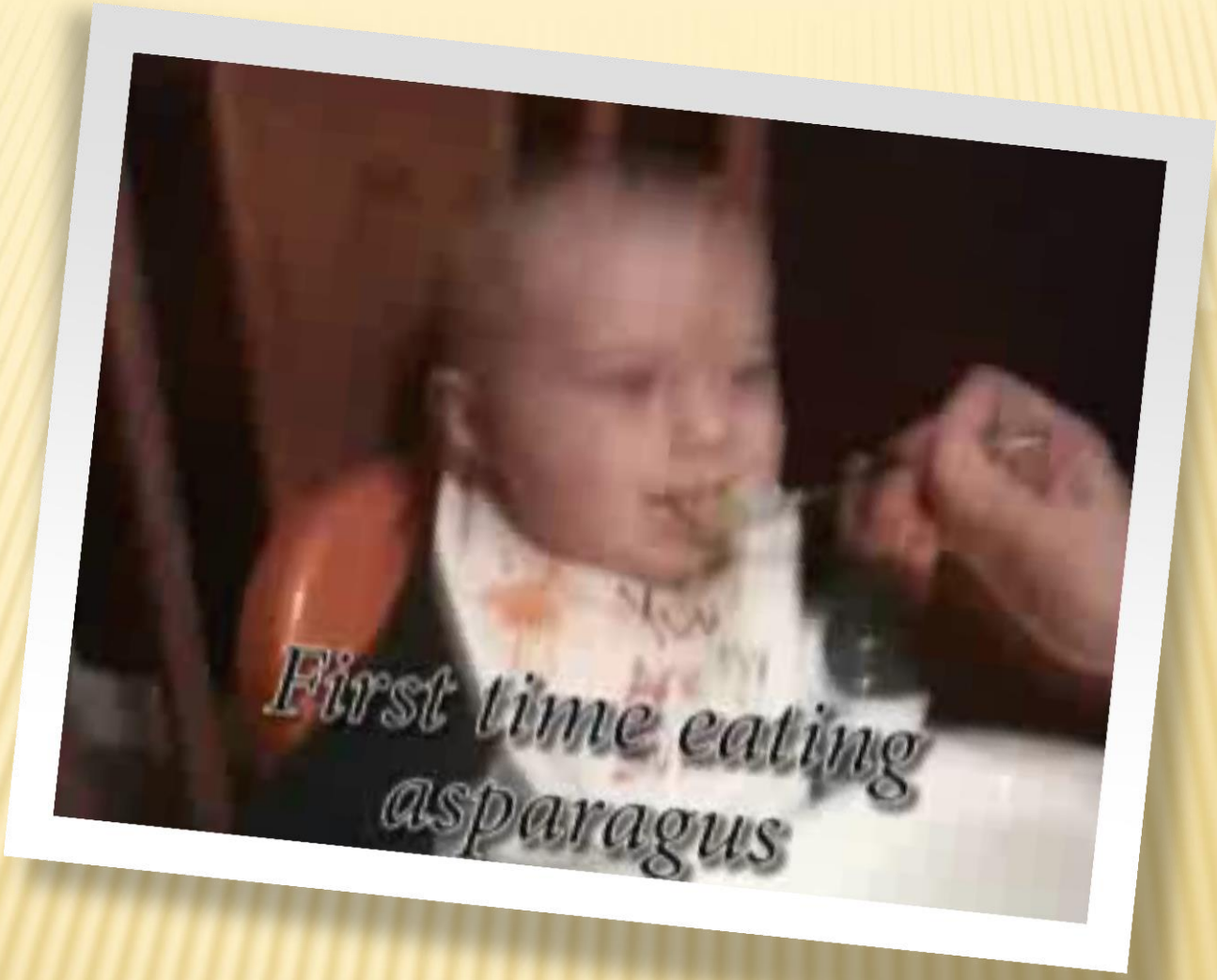
ALLINA
Hospitals & Clinics

50 different names for sugar

1)Barley malt
2)Beet sugar
3)Brown sugar
4)Buttered syrup
5)Cane juice crystals
6)Cane sugar
7)Caramel
8)Corn syrup
9)Corn syrup solids
10)Confectioner's sugar
11)carob syrup
12)Castor sugar
13)Date sugar
14)Demerara sugar
15)Dextran
16)Glucose
17)Dextrose
18)Diastatic malt
19)Diatase
20)Ethyl maltol
21)Fructose
22)Fruit juice
23)Fruit juice concentrate
24)Galactose
25)Glucose solids
26)Golden sugar
27)Golden syrup
28)Grape sugar
29)High-fructose corn syrup
30)Honey
31)Icing sugar
32)Invert sugar
33)Lactose
34)Maltodextrin
35)Maltose
36)Malt syrup
37)Maple syrup
38)Molasses
39)Muscovado sugar
40)Panocha
41)Raw sugar
42)Refiner's syrup
43)Rice syrup
44)Sorbitol
45)Sorghum syrup
46)Sucrose
47)Sugar
48)Treacle
49)Turbinado sugar
50)Yellow sugar

http://www.dietriffic.com/2009/03/26/names-for-sugar/

Foods that control your insulin levels



Xander eating asparagus

Flax Meal Bread • Servings: 1 Loaf

Staying away from refined carbohydrates like bread is often difficult because they are a common staple in most people's diet. This is a healthy, crunchy alternative.

2 Cups Flaxseed Meal

1 Tablespoon Aluminum Free Baking Powder

1 Teaspoon Sea Salt

Stevia and/or Xylitol Equivalent to 1-2 Tablespoons Sugar

5 Beaten Eggs

½ Cup Water

½ Cup Grapeseed or Coconut Oil

Preheat oven to 350 F. Prepare pan or a half-sheet pan with parchment paper or a silicone mat.
Mix dry ingredients - a whisk works well. Mix wet ingredients; add to dry combining well. Let batter set for 2 to 3 minutes to thicken up. Pour batter onto pan. Bake for about 20 minutes, until it springs back when you touch the top and/or is visibly browning.
Cool and cut into whatever size slices you desire.

Zucchini Boats • Servings: 4

Impress your friends with this delicious and beautifully presented dish.
You will want to double this recipe!

2 Medium Zucchini

¾ Pound Ground Turkey

1 Small Onion, Chopped

1 Cup Raw Cheese (or Cheese Alternative), Shredded (Optional)

2 Tablespoons Fruit Sweetened Ketchup or Tomato Paste

½ Teaspoon Sea Salt

¼ Teaspoon Pepper

½ Cup Sliced Fresh Mushrooms

½ Cup Sweet Red Peppers

½ Cup Chopped Green Peppers

Trim the ends of the zucchini. Cut in half lengthwise. Scoop out pulp, laving a ½ inch shell. Finely chop pulp. In a skillet, cook ground turkey, zucchini pulp, onion, mushrooms, and peppers until meat is brown, drain. Remove from heat. Add ½ cup cheese, ketchup, sea salt, and pepper. Mix well. Spoon into the zucchini shells Place in a buttered 13 x 9 x 2 inch baking dish. Sprinkle with remaining cheese if desired. Bake uncovered at 350°F for 30 minutes.

Maximized Living Nutrition Plans Recipe Night
Eating to Live a Maximized Life

Maximized
Nutrition Pr

Lime and Walnut Coleslaw

A great tangy, crunchy salad. This is a great alternative to mayonnaise based slaws.

1½ Cups Raw Walnut Pieces

½ Head Medium-Large Cabbage

1 Basket of Tiny Cherry Tomatoes, Quartered (optional – not pictured here)

1 Jalapeño Pepper, Seeded and Diced

¾ Cup Parsley or Cilantro, Chopped

¼ Cup Freshly Squeezed Lime Juice

2 Tablespoons Olive Oil

¼ Teaspoon Sea Salt

Cut the cabbage into two quarters and cut out the core. Using a knife shred each quarter into very thin slices. Cut long pieces in half. Combine the cabbage, walnuts, tomatoes, Jalapeño (optional), and cilantro or parsley in a bowl. In a separate bowl combine the lime juice, olive oil, salt. Add to the cabbage mixture and gently stir.

Congratulations for making it through the series….. You just added 10 years to your life