Fiber is your best Friend!

Practical recommendations for establishing a healthy eating lifestyle

Presented by Dr. Eduardo Cancino
Region One ESC Professional Staff Development Day - Personal Improvement Strand
December 14, 2018
Fiber is your Best Friend!

- Making Better Choices
  - A Personal journey...

- Glycemic Index
  - Not all Carbohydrates are the same

- Glycemic Load
  - Benefits of introducing Fiber-rich foods in your meals

- The Tortilla Dilemma!
  - Should it stay or should it go?

- Quality Food Combinations
  - From focus on Diet to focus on Healthy Lifestyle
Extreme Longevity
Areas of the World Where People Live Longer

- Sardinia, Italy
- Loma Linda, California, U.S.A.
- Okinawa, Japan

*Large number of people over 100 years!*
- Physical activity
- Strong social networks
- Diet rich in antioxidant fruits and vegetables, healthy grains and proteins
Choices here, choices there, choices everywhere!

Most Popular “Diets”...

Atkins Diet (low carb)

The Zone Diet (40carb/30fat/30protein)

Ketogenic Diet (low carb/moderate fat)

Vegetarian Diet (exclude most animal-based foods)

Vegan Diet (exclude all animal-based foods + mindset)

Weight Watchers (Point System: Diet + Exercise + Support Network)

South Beach Diet (slow carb over fast carb)

Mediterranean Diet (plants/fruits, grains/nuts, lean protein)

Medical New Today, 2017; Most Popular Diets
Choices here, choices there, choices everywhere!

“Diet” Rankings:
+ Short-Term Weight Loss
+ Long-Term Weight Loss
+ Positive Impact on Overall Health

US News and World Report, 2018; Best Diets Rankings
Making Healthier Choices

United States Department of Agriculture, 2018:
A Brief History of USDA Food Guides
Making Healthier Choices

United States Department of Agriculture, 1992; Dietary Guidelines for Americans - Food Guide Pyramid
Making Healthier Choices

United States Department of Agriculture, 2005; Dietary Guidelines for Americans - My Pyramid
Making Healthier Choices

United States Department of Agriculture, 2011; Dietary Guidelines for Americans - My Plate
Making Better Choices

**HEALTHY EATING PLATE**

- **Use healthy oils** (like olive and canola oil) for cooking, on salad, and at the table. Limit butter. Avoid trans fat.

- **The more veggies** – and the greater the variety – the better. Potatoes and French fries don’t count.

- **Eat plenty of fruits** of all colors.

- **Drink water, tea, or coffee** (with little or no sugar). Limit milk/dairy (1-2 servings/day) and juice (1 small glass/day). Avoid sugary drinks.

- **Use a variety of whole grains** (like whole-wheat bread, whole-grain pasta, and brown rice). Limit refined grains (like white rice and white bread).

- **Choose fish, poultry, beans, and nuts**; limit red meat and cheese; avoid bacon, cold cuts, and other processed meats.

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The Nutrition Source
www.hsph.harvard.edu/nutritionsource

Harvard Medical School
Harvard Health Publications
www.health.harvard.edu
Making Healthier Choices

The Ideal Plate

GLYCEMIC INDEX
IDEAL PLATE

LOW GI CARBS

VEGETABLES

PROTEIN

WWW.GISYMBOL.COM

The Glycemic Index Foundation, 2002
Making Better Choices - Carbohydrates

• Carbohydrates are one of the most important sources of energy for our bodies and are mainly found in plants (fruits, vegetables, grains & legumes) or in foods made from plant sources.

• Carbohydrates take two forms:
  • starches - such as potatoes, cereals, bread, and pasta
  • sugars - such as table sugar (sucrose), milk sugar (lactose), and fruit sugar (fructose).

• When digested, the starches and sugars in carbohydrates are broken down into millions of glucose molecules which are released into the bloodstream.

  • When blood glucose levels rise, your body releases a hormone called insulin, which allows glucose to enter cells.

  • Insulin also plays a key role in fat storage: when insulin levels rise, our cells are forced to burn glucose rather than fat.
Glycemic Index (GI)

The amount of carbohydrate in the reference and test food must be the same.
Glycemic Index (GI)

Glycemic Index Foundation, 2002
Glycemic Index (GI) vs Glycemic Load (GL)

- The glycemic index (GI) assigns a numeric score to a food based on how drastically it makes your blood sugar rise. Foods are ranked on a scale of 0 to 100, with pure glucose (sugar) given a value of 100. The lower a food's glycemic index, the slower blood sugar rises after eating that food. In general, the more cooked or processed a food is, the higher its GI, and the more fiber or fat in a food, the lower its GI.

- But the glycemic index tells just part of the story. What it doesn't tell you is how high your blood sugar could go when you actually eat the food. To understand a food's complete effect on blood sugar, you need to know both how quickly it makes glucose enter the bloodstream and how much glucose per serving it can deliver. A separate measure called the glycemic load does both — which gives you a more accurate picture of a food's real-life impact on your blood sugar. Watermelon, for example, has a high glycemic index (80). But a serving of watermelon has so little carbohydrate that its glycemic load is only 5.
GI and GL Rating of Foods

Glycemic Index (GI)
- Low (<=55)
- 56 - 69
- High (>=70)

Glycemic Load
- Low (<=10)
- 11 - 19
- High (>=20)
# GI Rating of Foods

**Glycemic Index**

<table>
<thead>
<tr>
<th>Grains / Starches</th>
<th>Vegetables</th>
<th>Fruits</th>
<th>Dairy</th>
<th>Proteins</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice Bran</td>
<td>Asparagus</td>
<td>Grapefruit</td>
<td>Low-Fat Yogurt</td>
<td>Peanuts</td>
</tr>
<tr>
<td>Bran Cereal</td>
<td>Broccoli</td>
<td>Apple</td>
<td>Plain Yogurt</td>
<td>Beans, Dried</td>
</tr>
<tr>
<td>Spaghetti</td>
<td>Celery</td>
<td>Peach</td>
<td>Whole Milk</td>
<td>Lentils</td>
</tr>
<tr>
<td>Corn, sweet</td>
<td>Cucumber</td>
<td>Orange</td>
<td>Soy Milk</td>
<td>Kidney Beans</td>
</tr>
<tr>
<td>Wild Rice</td>
<td>Lettuce</td>
<td>Grape</td>
<td>Fat-Free Milk</td>
<td>Split Peas</td>
</tr>
<tr>
<td>Sweet Potatoes</td>
<td>Peppers</td>
<td>Banana</td>
<td>Skim Milk</td>
<td>Lima Beans</td>
</tr>
<tr>
<td>White Rice</td>
<td>Spinach</td>
<td>Mango</td>
<td>Chocolate Milk</td>
<td>Chickpeas</td>
</tr>
<tr>
<td>Cous Cous</td>
<td>Tomatoes</td>
<td>Pineapple</td>
<td>Fruit Yogurt</td>
<td>Peanuts</td>
</tr>
<tr>
<td>Whole Wheat</td>
<td>Chickpeas</td>
<td>Watermelon</td>
<td>Ice Cream</td>
<td>Black-Eyed Beans</td>
</tr>
<tr>
<td>Bread</td>
<td>Cooked Carrots</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**HealthJade, 2008; International Tables of Glycemic Index and Glycemic Load**
# GI and GL Rating of Foods

## Food Values: Glycemic Index/Glycemic Load

<table>
<thead>
<tr>
<th></th>
<th>Low GI</th>
<th>Med GI</th>
<th>High GI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low GL</strong></td>
<td>All-bran cereal (8.42)</td>
<td>Beets (5.64)</td>
<td>Popcorn (8.72)</td>
</tr>
<tr>
<td></td>
<td>Apples (6.38)</td>
<td>Cantaloupe (4.65)</td>
<td>Watermelon (4.72)</td>
</tr>
<tr>
<td></td>
<td>Carrots (3.47)</td>
<td>Pineapple (7.59)</td>
<td>Whole wheat flour bread (9.71)</td>
</tr>
<tr>
<td></td>
<td>Peanuts (1.14)</td>
<td>Sucrose, i.e. table sugar (7.68)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Strawberries (1.40)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sweet Corn (9.54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Med GL</strong></td>
<td>Apple juice (11.40)</td>
<td>Life Cereal (16.86)</td>
<td>Cheerios (15.74)</td>
</tr>
<tr>
<td></td>
<td>Bananas (12.52)</td>
<td>New potatoes (12.57)</td>
<td>Shredded wheat (15.75)</td>
</tr>
<tr>
<td></td>
<td>Fettucine (18.40)</td>
<td>Wild rice (18.57)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Orange juice (12.50)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sourdough wheat bread (15.54)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High GL</strong></td>
<td>Linguine (23.52)</td>
<td>Couscous (23.65)</td>
<td>Baked Russet potatoes (26.85)</td>
</tr>
<tr>
<td></td>
<td>Macaroni (23.47)</td>
<td>White rice (23.64)</td>
<td>Cornflakes (21.81)</td>
</tr>
<tr>
<td></td>
<td>Spaghetti (20.42)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Revised International Table of Glycemic Index (GI) and Glycemic Load (GL), The American Journal of Clinical Nutrition, July 2002
The Tortilla Dilemma!!
Corn, Wheat, or Flour??

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Additional Food Items</th>
<th>Glycemic Index</th>
<th>Glycemic Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn Tortilla</td>
<td>None</td>
<td>52</td>
<td>8</td>
</tr>
<tr>
<td>Corn Tortilla</td>
<td>Refried pinto beans and Tomato Sauce</td>
<td>39</td>
<td>9</td>
</tr>
<tr>
<td>Corn Tortilla</td>
<td>Fried, Potato, Tomato, Lettuce</td>
<td>78</td>
<td>11</td>
</tr>
<tr>
<td>Wheat Tortilla</td>
<td>None</td>
<td>30</td>
<td>8</td>
</tr>
<tr>
<td>Wheat Tortilla</td>
<td>Refried pinto beans and Tomato Sauce</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>Flour Tortilla</td>
<td>None*</td>
<td>30</td>
<td>11</td>
</tr>
</tbody>
</table>

http://care.diabetesjournals.org/content/diacare/suppl/2008/09/18/dc08-1239.DC1/TableA1_1.pdf

The complete list of the glycemic index and glycemic load for more than 1,000 foods can be found in the article "International tables of glycemic index and glycemic load values: 2008" by Fiona S. Atkinson, Kaye Foster-Powell, and Jennie C. Brand-Miller in the December 2008 issue of Diabetes Care, Vol. 31, number 12, pages 2281-2283.
Fiber here, fiber there, fiber everywhere...

- There are 2 different types of fiber -- soluble and insoluble. Both are important for health, digestion, and preventing diseases.

  - **Soluble fiber** attracts water and turns to gel during digestion. This slows digestion. Soluble fiber is found in oat bran, barley, nuts, seeds, beans, lentils, peas, and some fruits and vegetables. It is also found in psyllium, a common fiber supplement. Some types of soluble fiber may help lower risk of heart disease.

  - **Insoluble fiber** is found in foods such as wheat bran, vegetables, and whole grains. It adds bulk to the stool and appears to help food pass more quickly through the stomach and intestines.
Some things I have learned...

- GI can change with Processing:
  - Juice has higher GI value than the source fruit
  - Stone ground whole wheat bread has lower GI than whole wheat bread
  - Fried potato has higher GI than baked potato, mashed potato has high GI than baked potato

- GI can change with Storage Time:
  - The more ripe a fruit (to a lesser degree root vegetables) then the higher the GI value

- Medium and High GI foods are not off the table
  - These foods still contain essential vitamins, minerals, and other beneficial nutrients
Some things I have learned...

- GL can change by Quantity of Meal Options:
  - Portion sizes matter

- GL can change by the Quality of Meal Combination:
  - The overall GL of a meal can be lowered by combining lower GI foods with higher GI foods.

- GL can change your food source options:
  - From After, to During, to Before in terms of meal selection.
  - A long term quality nutritional lifestyle is your choice and, with some foundational knowledge, the decisions are clearer to make.
Some things I have learned...

**Mindset:**
- From After, to During, to Before in terms of meal selection.
- A long term quality nutritional lifestyle is your choice and, with some foundational knowledge, the decisions are clearer to make.

**Impact Extends Beyond the Individual**
- On immediate family
- On extended family
- On friends
- On the overall community...
Nutritional approaches that lead to long-term weight loss and establish a healthy pattern of eating.