



# **Nutrition 101: Navigating the Nutrition Superhighway**

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# First and Foremost

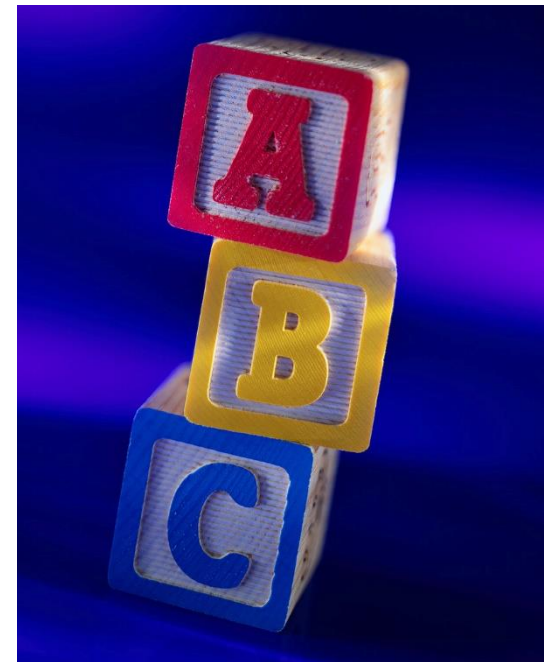
*For best results: Variety  
is key to a healthy diet.\**

\* American Institute for Cancer Research -

<http://health.msn.com/dietfitness/articlepage.aspx?cp-documentid=100096729>

# Let's Get Started with the Basic Building Blocks

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GOVERNMENT  
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# *Nutrient Numbers Game*

- **Vitamins/Minerals** (0 cal)
- **Carbohydrates** (4 cal/gram)
- **Fats** (9 cal/gram)
- **Proteins** (4 cal/gram)
- **Alcohol** (7 cal/gram)

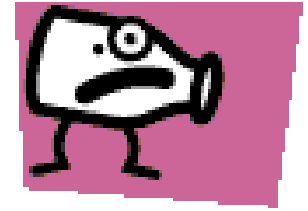


# Carbohydrates

- Carbohydrates are the **sugars** and **starches** found in foods.
- There are two general types of carbohydrates: **simple** and **complex**.



# Simple Carbohydrates



- Easy for the body to process/  
energy released quick
  - in milk/ soda/
  - table sugar/ candy/ cakes
  - Should be less than 10% of diet



# Complex Carbohydrates



- **Starches.** Starches provide energy to the body over longer periods because harder to break down. Breads, cereals, pasta, and potatoes contain starch.

- **Recommended Amounts**
  - 300 grams or 40-60 % of average diet
- - 5 daily servings
- 4 calories per gram

# Carbohydrate Sources

*What is the best source for carbohydrates?*

The best sources of carbohydrates - fruits, vegetables, and whole grains - deliver essential vitamins and minerals, fiber, and a host of important phytonutrients.\*



\*

<http://www.hsph.harvard.edu/nutritionsource/carbohydrates.html> - Harvard School of Public Health



# Fiber

- **Dietary Fiber** comes from non-digestible part of plants.
- **Soluble** assist in their removal from the body. (Found in: oat bran, beans, apples, carrots, and other vegetables).
- **Insoluble fiber** helps to provide needed bulk (Found in: whole grains and the skins and seeds of fruits and vegetables).
- **Rec Amts- 25-38 grams/ 3 servings**

# Why is Fiber Important?

**Fiber** has long been known to relieve constipation, but it also can reduce the risk of developing diabetes and heart disease.

**Soluble Fiber** slows digestion while **Insoluble Fiber** adds bulk to waste and speeds passage of food in digestive system and absorption.



<http://www.mayoclinic.com/health/fiber/NU00033> - Mayo Clinic

# Fats (Lipids)



- **Fats** are highest in calories (9 per gram)
- Fat is one of essential nutrients important for properly body function.
- Fats are part of many body tissues and are important as carriers of other nutrients, such as vitamins.
- Fats also carry the flavor of foods – making foods tastier, but consumption of fat should be closely monitored.

# Types of Fats

- **Saturated fats** are usually solid at room temperature. (Bad)
  - Animal origin: Tropical oils, butter, and animal fats tend to be high in saturated fats.
  - A diet high in saturated fats can lead to an increased chance of heart and blood vessel disease, obesity, and some types of cancer.
- **Unsaturated fats** are those fats that are liquid at room temperature. (Better)
  - Olive oil and peanut oil are called.
- **(Awful) Trans fats- found in processed foods to increase shelf life- margarine, cookies...manufactured**

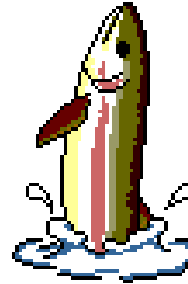
# Fat Sources



- **Monounsaturated fats**
  - I.e. olive oil, canola oil, almonds, avocado
- **Polyunsaturated fats**
  - I.e. fatty fish, walnuts, corn and soybean oils
- **Trans fats**
  - I.e. most margarines, shortening, fried chips
- **Saturated Fats**
  - I.e. red meat, dairy, chocolate

*Good fats (mono- and poly-) decrease bad cholesterol (LDL) while increasing good cholesterol (HDL).\**

\* <http://www.hsph.harvard.edu/nutritionsource/fats.html> - Harvard School of Public Health



## Why Omega-3s?

The American Heart Association recommends that healthy individuals or those at risk for cardiovascular disease eat two fatty fish meals a week to promote overall good heart health.\*

\*American Heart Association -

<http://www.americanheart.org/presenter.jhtml?identifier=4632>

# Cholesterol

- Eating foods high in fats, especially saturated fats may increase the level of **cholesterol**, a waxy, fat-like substance produced by body.
- It is found *only* in foods that come from animals, such as butter, eggs, and meats. It is not an essential nutrient because the body produces cholesterol in liver.
- As cholesterol levels in the body increase, the risk of heart and artery diseases increase. Some of the cholesterol tends to be deposited on the walls of the arteries, thereby reducing the flow of blood to the cells supplied by those arteries.

# Two Forms of Cholesterol

- Cholesterol is transported in the blood in two forms. LDL is the “bad” form that tends to deposit cholesterol on the walls of the blood vessels.
- HDL is the “good” form that removes cholesterol from the cells and brings it back to the liver and intestines to be recycled or excreted.
- Exercise has been proven to raise HDL, low-fat diets lower LDL.

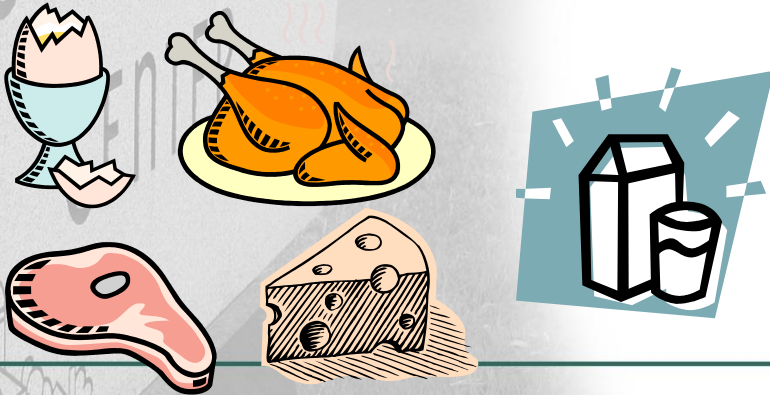




# Protein

- **Proteins** are substances found in every cell.
  - build and repair all body tissues
  - 4 calories per gram
  - Proteins are made up of basic units called **amino acids**.
- There are 20 different amino acids.
  - 9 are essential,
  - 11 amino acids can be produced by the body.
  - Need about 50g daily

## Complete proteins



## Incomplete proteins

### Legumes



# Protein Sources

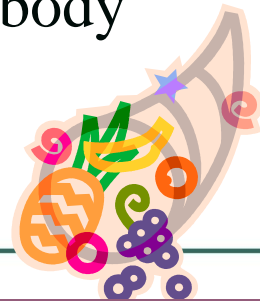
*By choosing lean protein choices you reduce the risk for heart disease. Lean proteins include skinless chicken, fish, low-fat dairy products and legumes.*



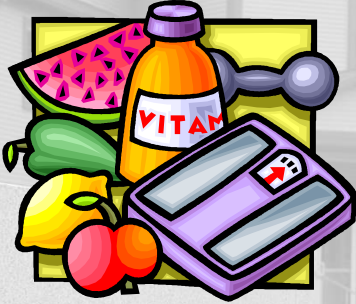
# Nutrients that Regulate

- **Vitamins, minerals,** and **water** are nutrients that work with the energy-providing nutrients to be sure that the body functions properly.
- **Water is the most vital nutrient because it provides the means for all other nutrients to be carry throughout the body.**
- Eating a variety of foods in the right amounts is usually all that is needed to get daily supply of vitamins and minerals.

- Vitamins, minerals, and water are not digested by our body, and they do not provide Calories. Instead vitamins, minerals, and water are released from foods we eat and are absorbed by the body's tissues. They work with carbohydrates, fats, and proteins to promote growth and regulate body processes.



# Vitamins



- Some diseases can develop because of lack of a particular vitamin.
- **Vitamins** are needed in small amounts for life and growth and to prevent diseases.

- Because the body cannot make most vitamins, they must be supplied by the foods we eat.
- Vit D- sunlight- helps maintain calcium levels in blood
- Folate- prevent birth defects

# Choosing a Multivitamin

## 100% RDA of these:

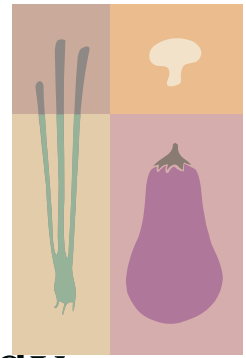
- B-1
- B-2
- B-3
- B-12
- B-6
- Vitamin A, C, D, E
- Folic Acid

## Other essentials:

- Copper .9 mg
- Selenium 50 mcg
- Zinc 11 mcg
- Magnesium 100 mg
- Iron (women) 18 mg

*This advice does not replace the advice of your healthcare team.*

# Minerals



- Minerals are used to regulate a wide range of body processes, from bone formation to blood clotting, and they are important for the body structure.
  - Ex. Calcium-too much sodium causes the release into blood out of the bones
- Most minerals are either quickly used or lost in waste products, therefore we must eat mineral-rich foods daily to replenish our supply.
  - Iron is an exception –it tends to be kept and recycled by the body, except when there is a blood loss.



# Water

- Water is found in every cell, in the spaces around the cells, in the fluid tissues of the body, and in body cavities
- Water carries dissolved nutrients throughout our body and assists in all of its functions such as: digesting foods, removing wastes, regulating temperature, and cushioning sensitive parts of our body.
- Each day we lose two to three quarts of water and if this water is not replaced the body can dehydrate.



# The Hidden Truth: *Sugar* *and Salt*



- Excess salt in the diet can contribute to heart disease, high blood pressure and stroke. The average daily consumption of salt should be no more than 2400 mg.
- Sugar is found in many foods particularly in the form of high fructose corn syrup. Due to its affordability it has oftentimes replaced sugar as a sweetener and preservative.

<http://www.mayoclinic.com/health/high-fructose-corn-syrup/AN01588> - Mayo

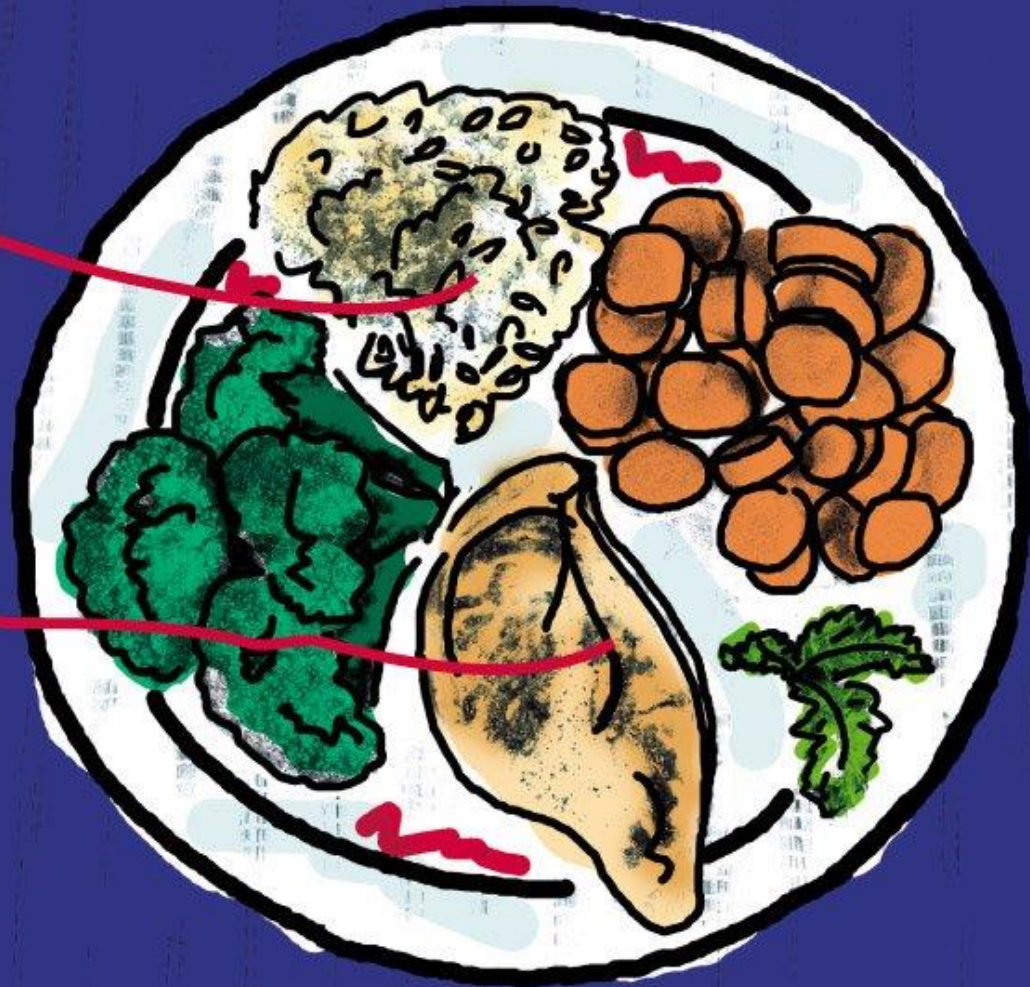
Clinic



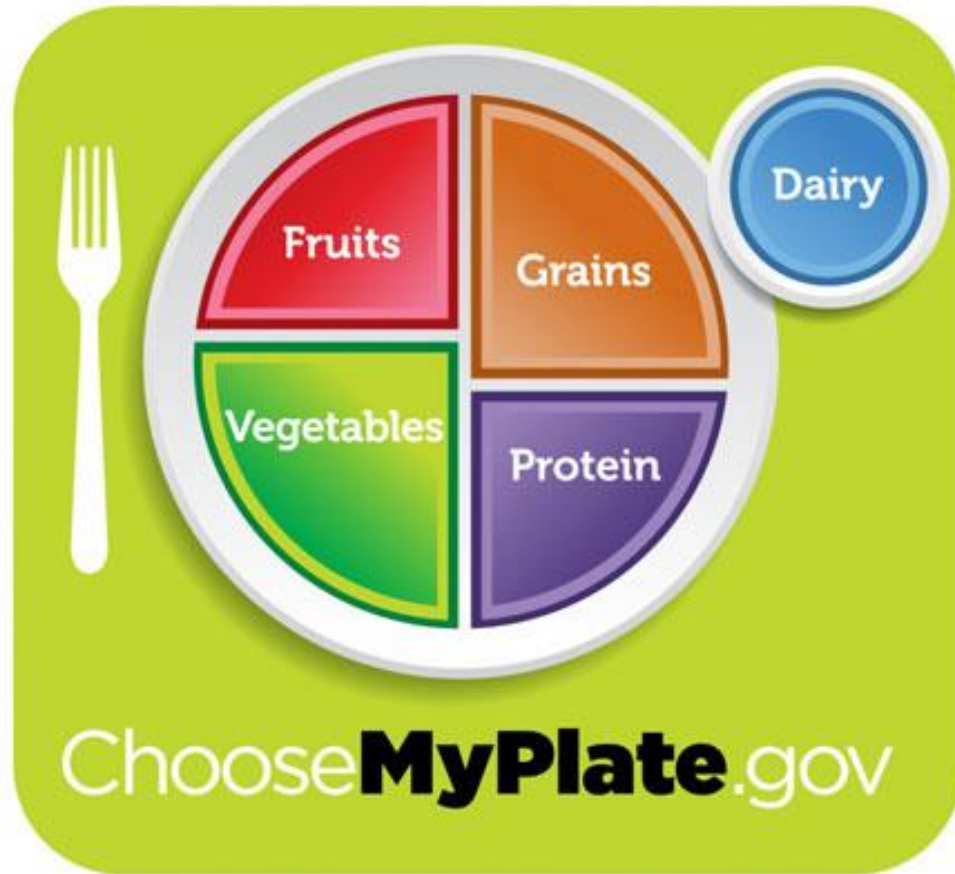
# The New American Plate™

$\frac{2}{3}$  (or more)  
vegetables,  
fruits,  
whole grains  
and beans

$\frac{1}{3}$  (or less)  
animal  
protein



# My Plate



# Standard Serving Sizes

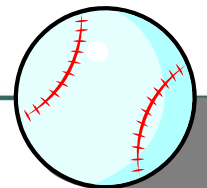


## Food/Serving

- Chopped vegetables = 1/2 cup
- Raw leafy vegetables = 1 cup
- Fresh fruit = 1 med. Piece
- Dried fruit = 1/4 cup
- Pasta, rice, cooked cereal = 1/2 cup
- Cereal = 1/4 to 1 1/4 cups
- Dried Beans = 1/2 cup cooked
- Meat, poultry, seafood = 3 oz.
- Nuts = 1/3 cup
- Cheese = 1 1/2 oz.

## Looks like

- 1/2 baseball
- adult fist
- 1 baseball
- 1 golf ball
- 1/2 baseball
- varied
- 1/2 baseball
- deck of cards
- Level handful
- 4 dice

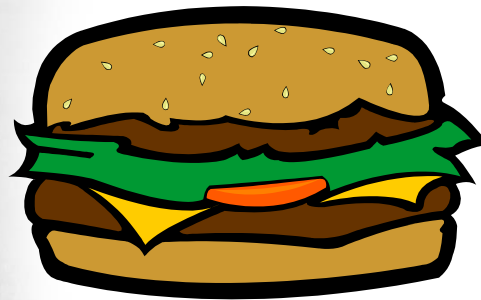




# Take the *Fat* out of Fast Food

## Limit:

- mayonnaise and tartar/special sauces
- burgers
- french fries
- processed cheese
- fish filet (w/ cheese/tartar)
- fried foods
- soda and milkshakes

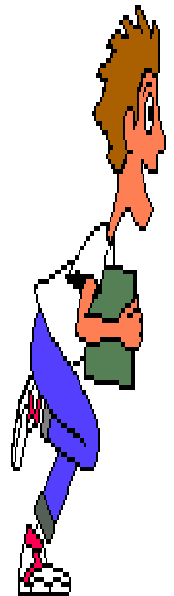


## Try:

- grilled chicken.
- ketchup or mustard.
- fruit/yogurt snack
- veggie burgers.
- 100% juice or low-fat milk.
- grilled chicken salad.
- low-fat/low-calorie dressing.

# Lunch on the Go: Guide to Meal Replacement Bars

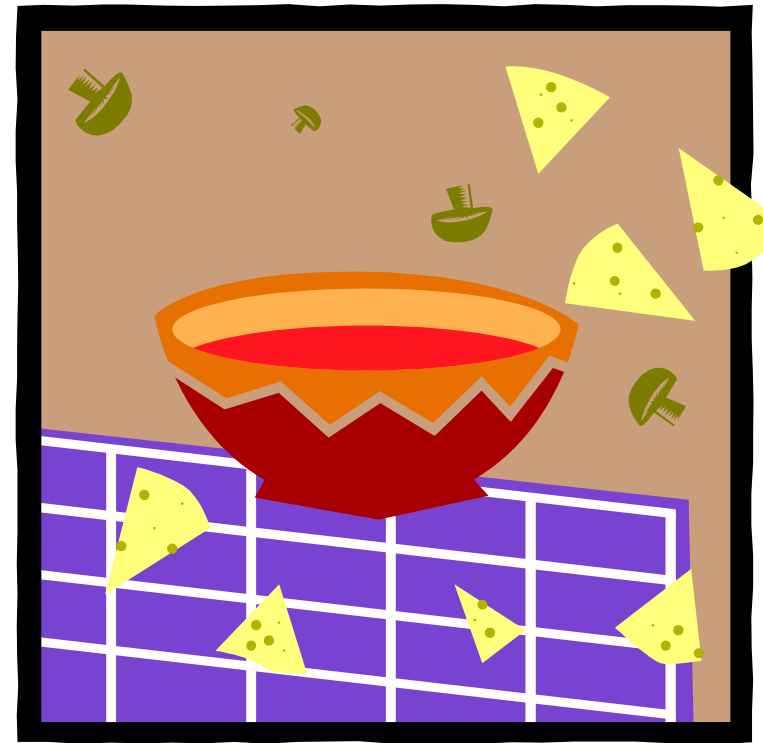
- *Include a piece of fruit for added fiber.*
- Meal replacement bar guidelines:
  - 10 – 15 grams of protein
  - 7 grams of fat or less
  - 200 – 250 calories



# Healthy Snacking Ideas

## Try:

- dried fruit
- fruit with a dip
- veggies with salsa or hummus
- veggies with bean dip
- yogurt
- soy milk
- canned tuna
- bean salad



# Labels and Claims



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## How to Read a Food Label

Step 1 – Start with the Serving Size

Step 2 – Figure out the Fat

Step 3 – Size up the Sodium

Step 4 – Don't forget Dietary Fiber

Step 5 – Pick up on the Protein

**Based on 2000  
calories for healthy  
woman, children and  
older adults.**

**2500 calories for  
healthy men.**

**Start  
Here**

**Limit  
these  
Nutrients**

**Get  
Enough  
of these  
Nutrients**

**Footnote**

### Sample Label for Macaroni and Cheese

#### **Nutrition Facts**

Serving Size 1 cup (228g)  
Servings Per Container 2

Amount Per Serving

Calories 250      Calories from Fat 110

% Daily Value\*

Total Fat 12g	18%
Saturated Fat 3g	15%
Trans Fat 1.5g	
Cholesterol 30mg	10%
Sodium 470mg	20%
Total Carbohydrate 31g	10%
Dietary Fiber 0g	0%
Sugars 5g	
Protein 5g	
Vitamin A	4%
Vitamin C	2%
Calcium	20%
Iron	4%

\* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

**Quick  
Guide  
to % DV**

**5% or less  
is low  
20% or more  
is high**



# Don't Be Fooled By Low Fat

Low Calorie	40 calories or less
Light or Lite	One third fewer calories or 50% or less fat than regular product
Fat-Free	Less than half a gram of fat
Low-Fat	3 grams of fat or less
Reduced Fat	25 % less fat than regular product
Fewer or Less Cal.	At least 25% fewer calories than regular product



**3 cookies – 150 Calories**

**4.5 grams of fat**



**3 cookies – 160 Calories**

**7 grams of fat**

# Watch Your Portion Size



**8 fl oz. cup      100 Cal.**  
0 Fat              25 Carbs.

**12 fl. oz can      150 Cal.**  
0 Fat              37 Carbs.

**20 fl. oz bottle   250 Cal.**  
0 Fat              63 Carbs.

**1 liter bottle     400 Cal.**  
0 Fat              100 Carbs

**2 liter bottle     800 Cal.**  
0 Fat              200 Carbs.



**Small 2oz.      160 Cal.**  
1.5 Fat      30 Carbs   7 Pro.

**Medium 3oz.   240 Cal.**  
2 Fat          45 Carbs. 10 Pro.

**Large 4oz.      320 Cal.**  
3 Fat          60 Carbs. 13 Pro.

# Super Foods

- **Salmon** - Good source of protein & omega 3 fatty acids.
  - (shown to decrease LDL and increase HDL)
- **Soy** - great substitute for animal products.
  - (high in protein and amino acids – known to reduce LDL)
- **Greens** - broccoli, asparagus, green beans, kale
  - (packed with vitamin A, C , iron, calcium)
- **Berries** — fresh berries are powerful disease-fighting food.
  - (high in vitamin C, folate, fiber & nutrients.)
- **Whole Grains** — Packed with valuable antioxidants not found in fruits and vegetables.

# Putting It All Together

- **Eat:**
  - fruits and vegetables.
  - whole grain breads and cereals.
  - low-fat meat and dairy products.
  - nuts and plant oils for good fat.
- 60 minutes of moderate physical activity/day.
- Consume alcohol and caffeine moderately.
- Drink water.
- Limit salt.

# References

- USDA - [www.nutrition.gov](http://www.nutrition.gov)
- Calorie King - [www.calorieking.com](http://www.calorieking.com)
- USDA National Agricultural Library – Food Safety Information Center
- National Institute of Health – National Institute of Allergy and Infectious Diseases
- U.S. Food and Drug Administration – Center for Food Safety and Applied Nutrition

Believe...



**...anything is possible!**

***"The only reason the bumble bee can fly is because no one told him that he can't!"***