

# Where are your Micronutrients?

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# Happy Vegan Month!

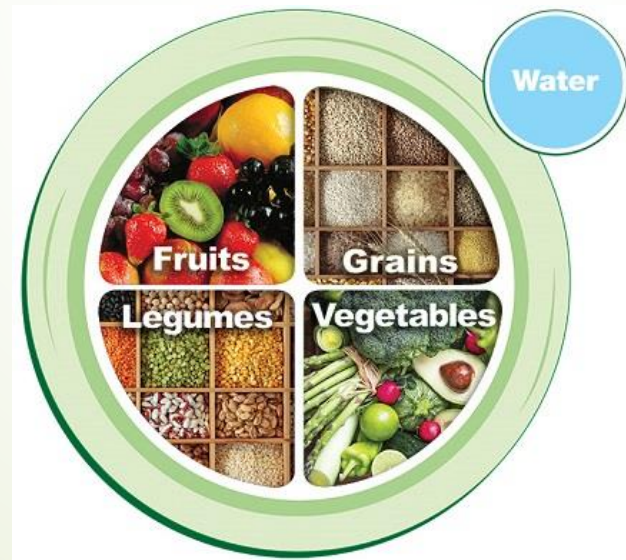
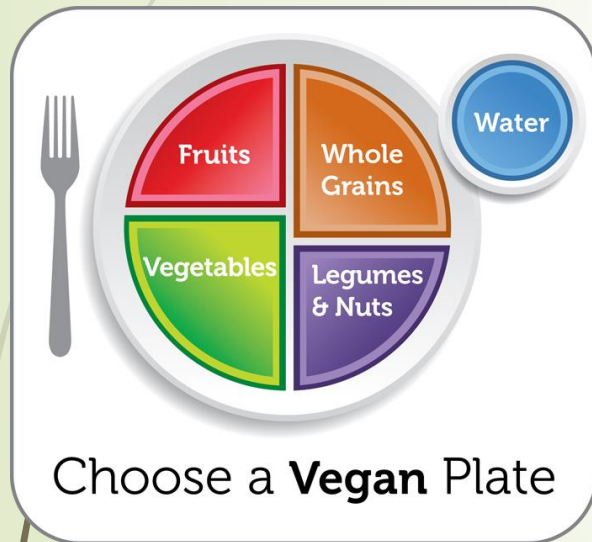
- What have you been doing eating more plants/less animals?
- Any new recipes?
- How are you doing with SMART goals?



# What is best for our heart?

## Whole Foods, Plant-based Eating Style

Whole foods, plant-based diet is only plan to show reversal of chronic disease





# Nutrients in a WFPB diet

- Macronutrients:

- Carbs

- Grains
- Fruits
- Veggies
- Beans

- Protein

- Beans, legumes
- Nuts, seeds

- Fats

- Avocado, olives
- Nuts, seeds

- Micronutrients & water

- Vitamins

- Help release energy from macros
- Help functions in body
- 13 vitamins

- Minerals

- Structure: bones & teeth
- Found in our body fluids
- 16 minerals

- Water

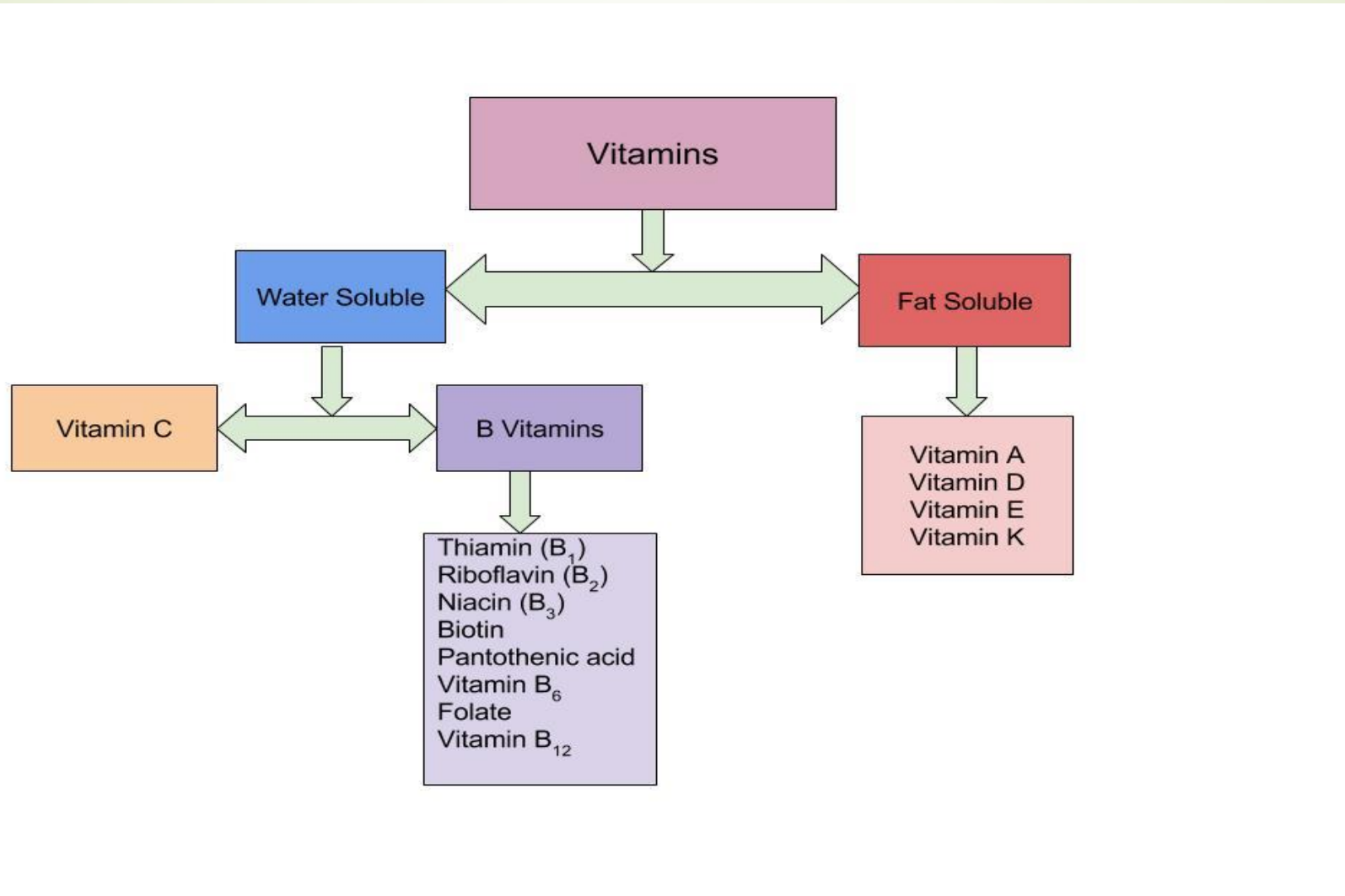
- All our bodily functions need water
- 60% of our body

## To maximize micronutrients: Eat *Whole Foods* instead of *Food Products*

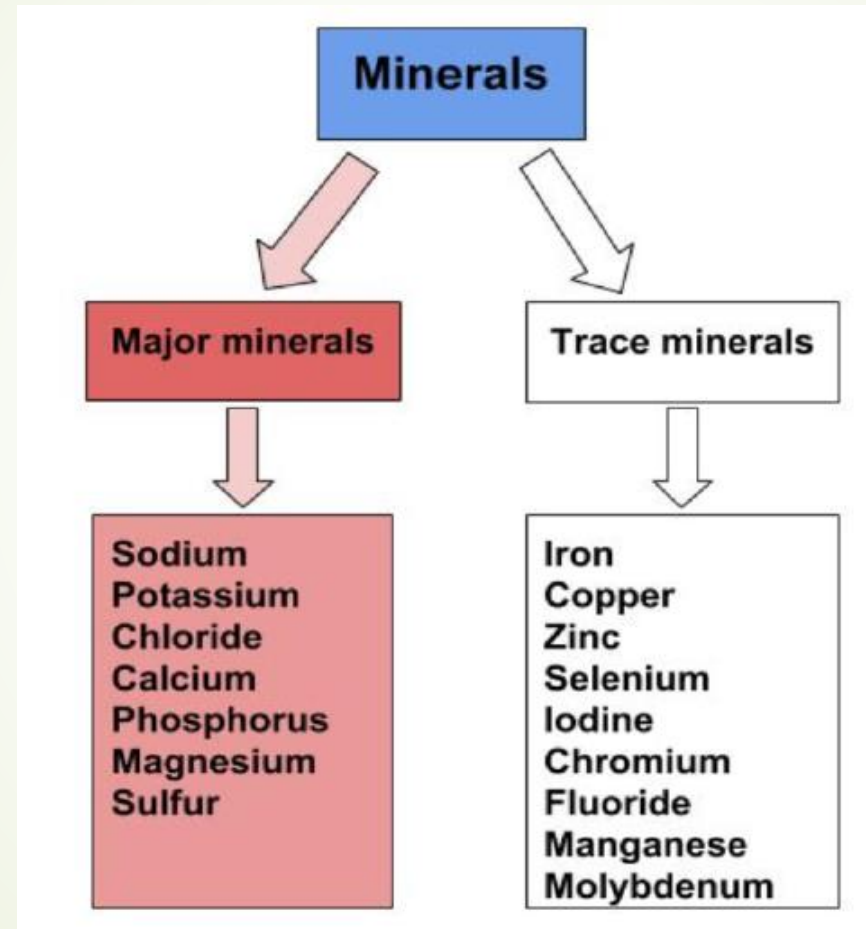
1. Vegetables
2. Fruits
3. Beans
4. Nuts and Seeds
5. Whole intact grains
6. Herbs and spices



# Vitamins



# Minerals





# How much do you need?

- ▶ <https://www.nal.usda.gov/fnic/dri-calculator/index.php>
- ▶ Nutrient calculator



# WFPB – Nutrients to consider


- Vit B12
- Vit D
- Calcium
- Iron
- Zinc
- Iodine





# Vitamin B12 – RDA = 2.4 ug/d

- Function: Helps with making red blood cells, DNA, nerve function
- At risk for deficiency: vegans, elderly
- Signs of deficiency: tingling, numbness, fatigue, memory loss, falling
- NOTE: Metformin may lower B12 – have it checked at least every 3 years
- Not made by plants or animals – only by microbes
- Food sources: only animal products or fortified foods
- **Supplement if WFPB – 2000 mcg/week, cyanobalamin (if >65 yo, 1000 mcg/day)**



# Calcium – RDA = 1200 mg/d (men 51-70 = 1000 mg/d)

- Function: 99% of calcium in body is in bones and teeth, 1% for muscle contraction, nerve function, blood clotting, blood pressure
- Signs of deficiency: weak, brittle bones = osteoporosis
- At risk for deficiency: growth periods, elderly, low calcium and Vit D intake, sedentary lifestyle, female
- NOTE: Oxalates in dark greens may inhibit absorption
  - Kale, collards, mustard greens are well absorbed
  - Spinach, chard, rhubarb, beet greens not well absorbed
- Food sources: dairy products and multiple plant-based foods (aim for at least 600 mg/d)

# Calcium Sources

## Plant Sources of Calcium: Approximate Amounts

### 300 mg of calcium

Fortified plant milk, 8 oz

Fortified orange juice, 8 oz

Fortified energy bar

### 200 mg of calcium

Collard greens, kale,  
mustard or turnip greens,  
1 cup cooked

Tofu, calcium-set, ½ cup

Blackstrap molasses,  
1 Tbsp

### 100 mg of calcium

Soybeans, ½ cup cooked

Soy nuts, ½ cup

Instant oatmeal, 1 packet

Almond butter or tahini,  
2 Tbsp

Bok choy, 1 cup cooked

Edamame, 1 cup cooked

Tempeh, ½ cup

### 75 mg of calcium

Dried figs, 5

Textured vegetable  
protein, ½ cup prepared

Chia seeds, 1 Tbsp

### 50 mg of calcium

Broccoli, 1 cup cooked

Navy beans, cooked,  
½ cup


Vegetarian baked beans,  
½ cup

Navel orange

Almonds, 2 Tbsp raw

Flax seeds, ground, 3 Tbsp

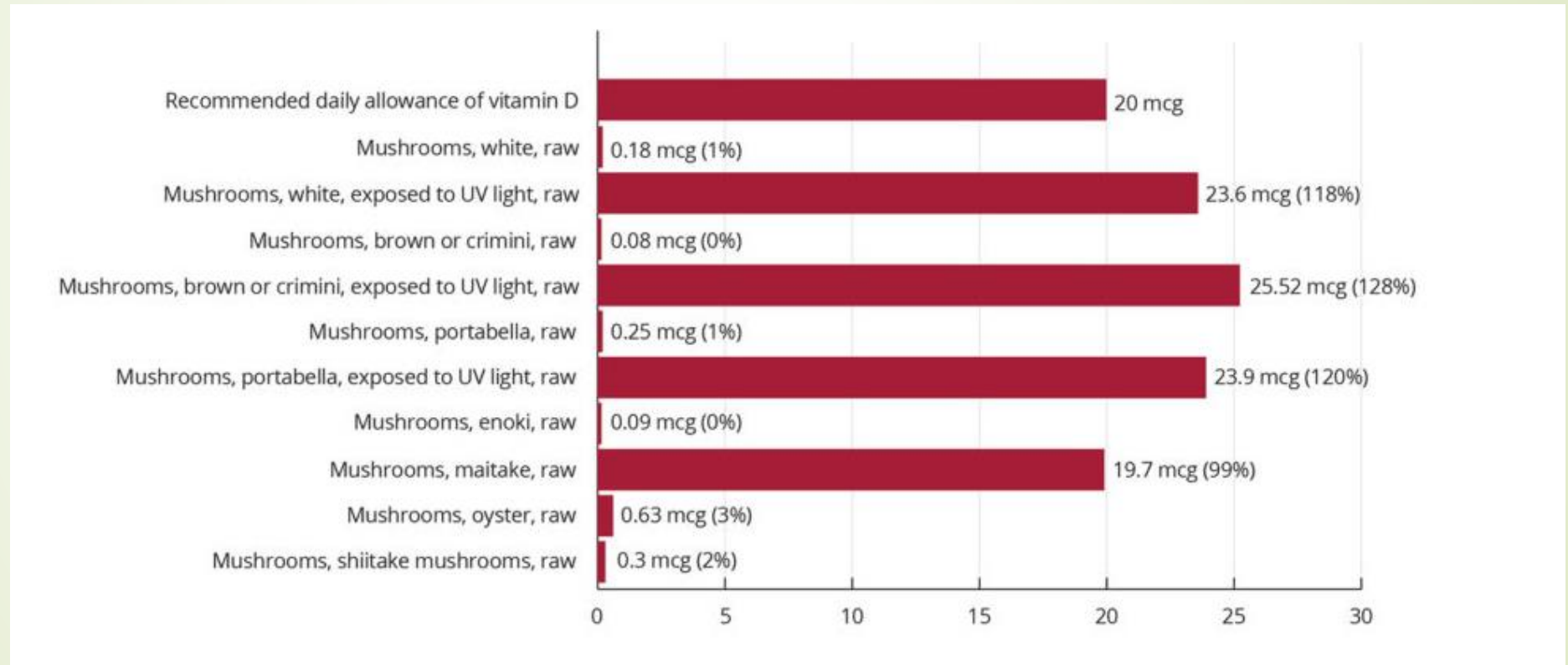
See USDA's Nutrient Database for Standard Reference <https://ndb.nal.usda.gov/ndb/search/list/> for more information on calcium content of foods.



# Vitamin D – RDA 15 mg/d (51-70), 20 mg/d >70

- Function: help with bone health by regulating calcium
- Deficiency: bone loss, osteomalacia, Rickets in children
- Vit D2 & D3: D2 is plant-based, D3 is from lanolin (sheep's wool) – but they do make D3 that is vegan
- Sources: sunlight, fatty fish, eggs, fortified foods, some mushrooms
- How much sunlight?
  - If latitude of LA and south: 15 min/day (30 min darker skin or older)
  - If more north, dark skinned or winter months – may need supplement (2000 IU Vit D3)
- May be associated with reduced progression to type 2 DM

# Mushrooms exposed to UV light





## Iron – RDA = 8 mg/d

- Functions: Helps red blood cells carry oxygen to muscles and tissues, immunity, DNA synthesis
- Deficiency = Anemia
- Signs of anemia: Fatigue
- Heme vs non-heme iron
- Phytates (in nuts, seeds, grains) – may bind iron
- Eat with Vit C foods – helps absorption
- Vegetarians store less iron – this might be good
- Coffee/tea and calcium decrease absorption
- Sources: beans/legumes, whole grains

## Iron Content of Selected Foods

Food	Serving	Prep	Iron (mg)
<b>Vegetables</b>			
Spinach	1/2 C chopped	boiled	3.2
Swiss chard	1/2 C chopped	boiled	2.0
<b>Grains</b>			
Oatmeal	1/2 C	cooked	1.0
Rice (white, long-grain, enriched)	1/2 C	cooked	1.4
<b>Soy Products &amp; Legumes</b>			
Tempeh	3 oz	cooked	1.5
Soy milk	1 C		1.0 - 1.5
<b>Nuts</b>			
Almonds	1/4 C	roasted	1.3
Pistachios	1/4 C	dry roasted	1.2
<b>Fruits</b>			
Dried figs	1/2 C		1.5
Raisins	1/2 C		1.4
<b>Enriched Cereals</b>			
Grape nuts	1/2 C		16
Total- whole grain	1/2 C		8.0
<b>Other</b>			
Molasses	2 T		3.8





## Zinc – RDA 11 mg/d (men), 8 mg/d (women)

- Function: helps enzymes do their job, wound healing, taste perception
- Deficiency: lowers immunity, hair loss, loss of taste/smell
- Half of zinc intake in US is from meats
- Vegetarians may need 50% more than RDA
- Phytates inhibit absorption
- Sources: animal foods, fortified cereals, whole grains, beans, tofu, nuts/seeds

# Folate – RDA 400 ug/d

- Function: DNA synthesis, new cell formation (red blood cells), breakdown homocysteine
- Deficiency: Anemia, fatigue, weakness, neural tube defects, elevated homocysteine
- Elevated homocysteine increase atherosclerotic lesions
- Sources: think 'foliage', beans, whole grains, seeds



# Iodine – RDA 150 ug/d

- Function: Part of thyroid hormones, help regulate growth, development and metabolic rate
- Deficiency: Goiter (hypothyroid)
- Food sources: iodized salt, seafood, dairy, sea vegetables (seaweed, nori, kombu – edible kelp), plants from iodine-rich soil



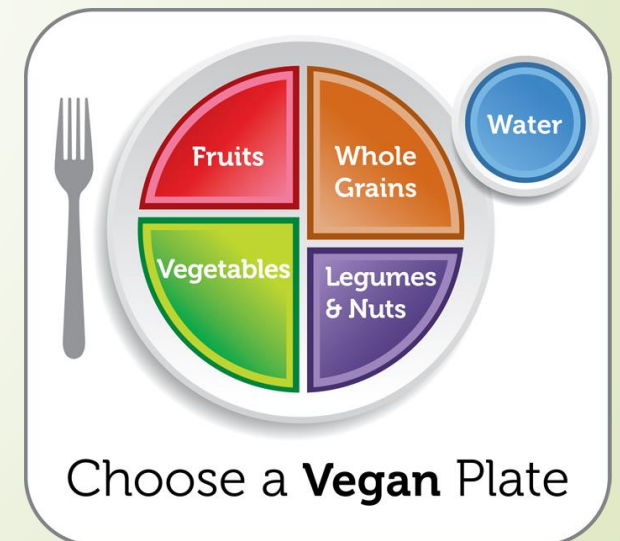
# Nutrients to consider for COVID

- Vitamin D3
  - From [Chrisbeatcancer.com](http://Chrisbeatcancer.com)
  - 4000 IU/day
  - 80% of COVID patients are deficient
  - Vitamin D3 nearly doubled survival rate in nursing homes
- Vitamin C – may help reduce symptoms
- Zinc – may help reduce symptoms
- Help to improve immune system



# Meal Planning to get your micronutrients

- **Fruit (3/day) + Vegetable (4+/day)**
- **Aim for fruit &/or veg at every meal**
- A **whole grain (5/day)** or starch with every meal
- A **protein (3/day)** or with every meal



## To maximize micronutrients: eat these multiple times a day

1. Vegetables – include variety dark greens
2. Fruits – with skin
3. Beans/lentils/peas
4. Nuts and Seeds
5. Whole intact grains
6. Herbs and spices



# Planning Ahead

- ▶ Think about what you want for the upcoming week
- ▶ Batch cook a few items:
  - ▶ Oatmeal?
  - ▶ Beans/lentils?
  - ▶ Quinoa/brown rice?
  - ▶ Sweet potatoes?
  - ▶ Roasted veggies?
- ▶ Cut your veggies into the shapes you will need for the week:
  - ▶ Diced or sliced
  - ▶ Sticks



# Build a better Power bowl

- 1-2 cups raw and/or cooked veggies
- ½ -1 cup tofu or beans or lentils
- ½ cup cooked whole grain
- 2-3 cups salad greens/kale/spinach
- 1 Tbsp nuts or seeds
- Dressing or sauce
- **Extras:** herbs, fruit, avocado





# Build a better salad


- Base of dark greens
- Top with favorite veggies
- Add leftover grains or veggies
- Add fruit
- Add a protein: beans, tofu, lentils, tempeh
- Add nuts/seeds
- Add a dressing (keep it on the side)



# Build a better soup

- Start with aromatics: carrots, onion/leeks, celery, garlic - sauté in pan coated with cooking spray
- Add other veggies: mushrooms or cauliflower or squash or potatoes or peppers
- Add beans/lentils and low sodium veggie broth and cook for about 20 - 45 min
- Add seasonings of choice
- Add 2 -3 cups raw greens until wilted and serve.





The food you eat  
can be the safest  
form of medicine  
or the slowest  
form of  
poison.  
-Anne Wigmore

[2ndacthealth.com](http://2ndacthealth.com)

**Remember your Why**

Eat as if your life depended on it!

