




# Build up your defense system

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# Happy Diabetes Awareness Month

- ▶ <https://www.niddk.nih.gov/health-information/community-health-outreach/national-diabetes-month>

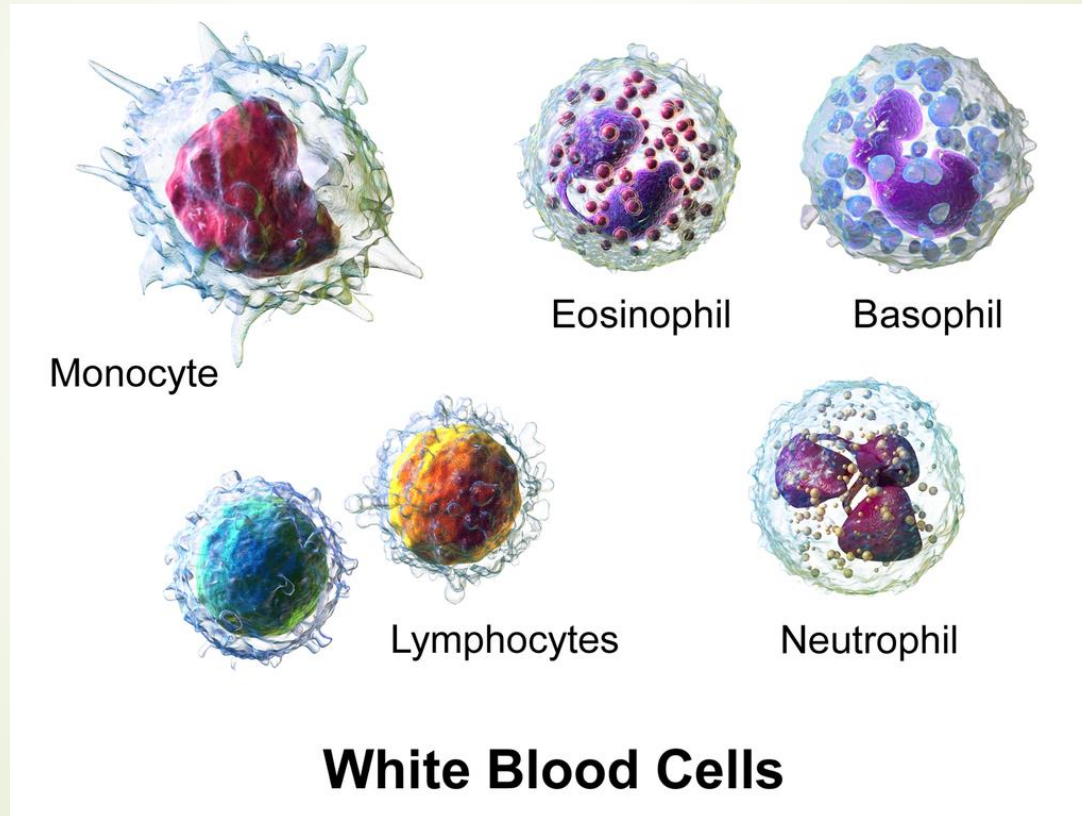



world diabetes day

14 November



# How we fight illness





# How to strengthen your immunity

- 1. Practice good hygiene
  - Wash hands, don't touch face & eyes
  - Get vaccinated
  - Get regular medical care
- 2. Eat healthy (more on that later)
  - Healthy gut
- 3. Exercise regularly
- 4. Stress less
  - Stress weakens immunity
- 5. Be tobacco free
  - Causes inflammation which weakens immunity
- 6. Get enough sleep
  - Body works on rebuilding immunity while you sleep

# What foods improve my immunity?

- Anti-inflammatory & Antioxidant-rich
- High fiber – strengthens gut microbiome
- Plant foods build immunity
- Vitamin C-rich foods
  - Strong antioxidant
  - Helps in repair and regeneration of tissues
  - Protects cells
- Selenium-rich foods
- Garlic

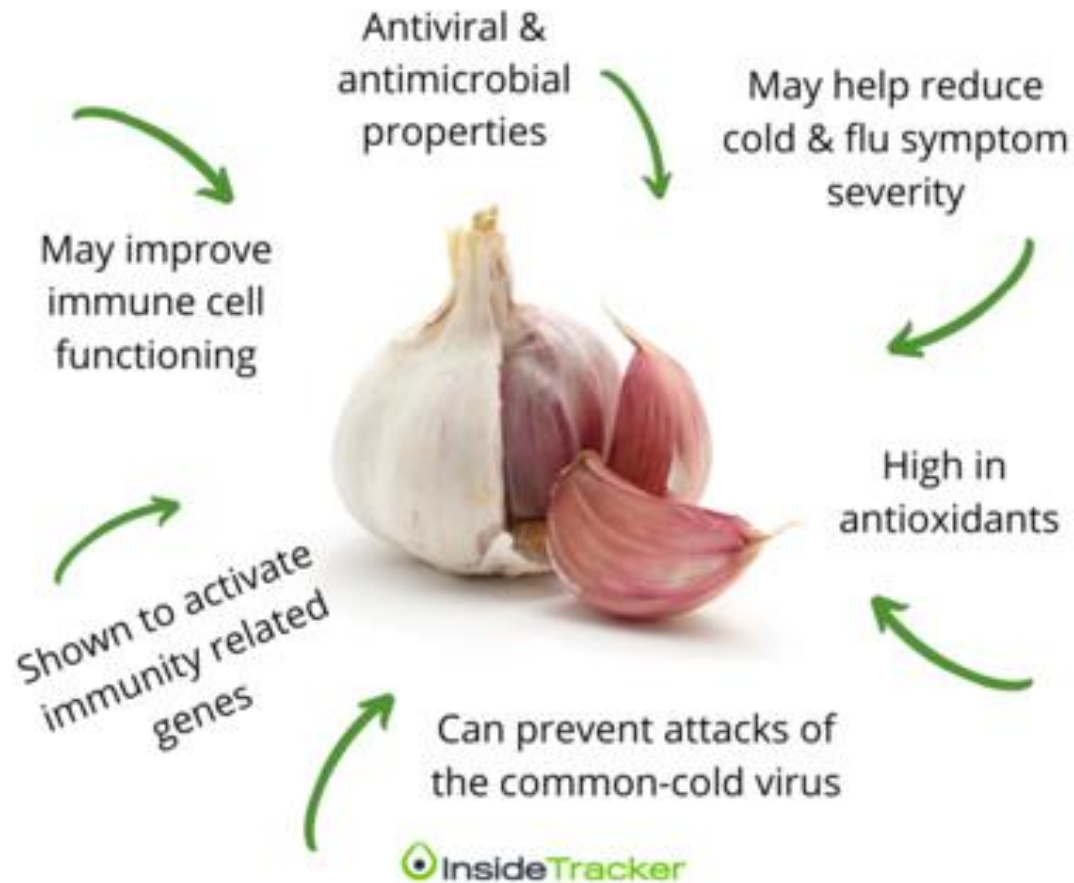


# Vitamin C

Citrus fruits, green peppers, strawberries, tomatoes, broccoli and sweet and white potatoes are all excellent food sources of vitamin C (ascorbic acid)



# BENEFITS OF GARLIC



# Selenium

- Powerful antioxidant
- Deficiency associated with chronic diseases & weakened immunity
- Brazil nuts, brewer's yeast, wheat germ, garlic, truly whole grains, sunflower seeds, walnuts, raisins, shellfish, and both fresh and saltwater fish.





# Inflammation

Inflammation is an immune response designed to remove damaged tissue and foreign substances.

There are two main types...

## Acute



Acute inflammation is caused by injuries and infections like splinters, cuts, and sprains.

Response length: minutes-weeks

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## Chronic

Aggravation must be sustained to lead to chronic inflammation. Diet, autoimmune disorders, and general stress are common causes.



Response length: months-years



# How to fight inflammation




## Anti-inflammatory

-  Fruits
-  Veggies
-  Whole grains
-  Nuts & seeds
-  Legumes
-  Soy
-  Berries, tomatoes, turmeric, walnuts, red wine, green tea



## Pro-inflammatory

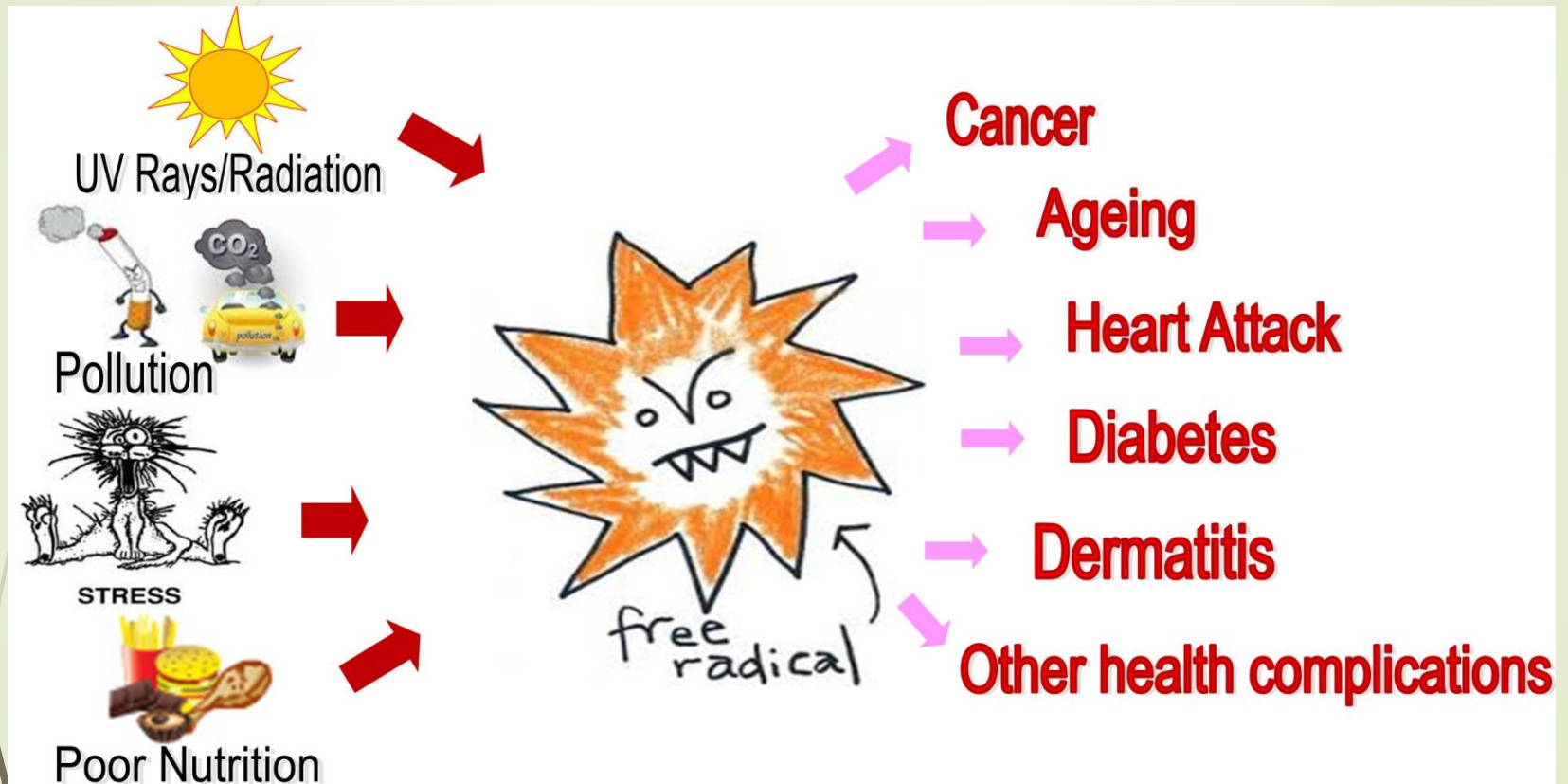
-  Refined, processed foods
-  High calories
-  Excess sugar
-  High fat
-  Obesity

# Anti-inflammatory Diet

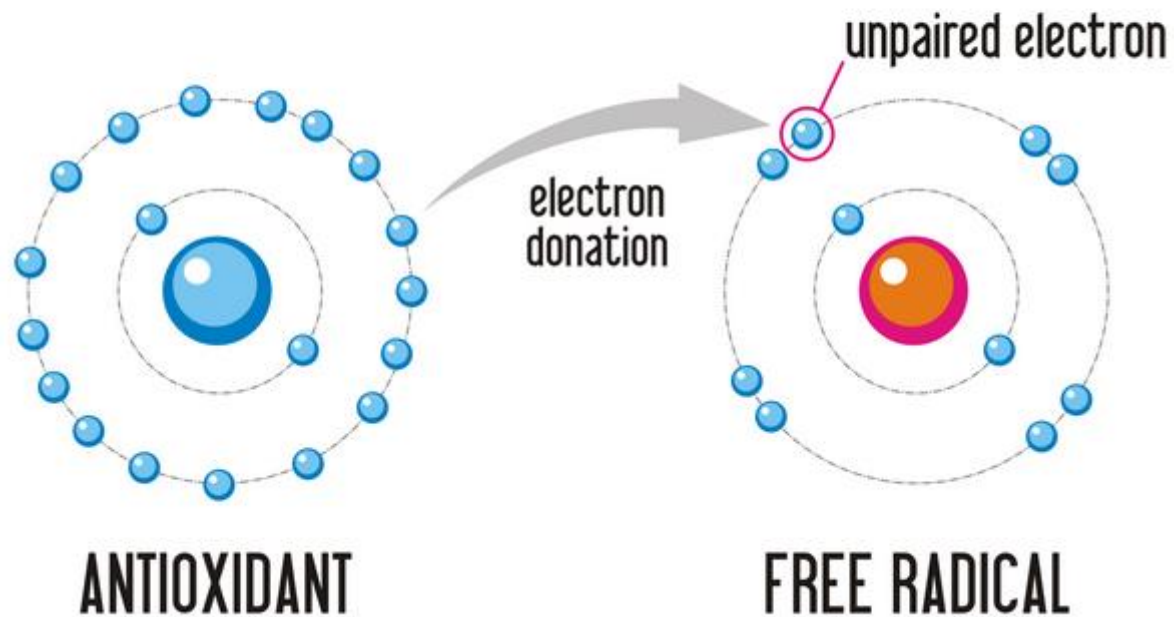
- **Eat from the rainbow**
- Low in processed, low nutrient foods
- Lots of fruits and veggies
- Calories to maintain a healthy weight
- High fiber whole grains
- Low in animal protein
- Choose plant proteins: legumes, soy, nuts & seeds
- Healthy unprocessed fats: olives, nuts, seeds, avocado
- Includes Omega-3 fats: walnuts, flax, chia, fish
- Lots of antioxidant spices and herbs: garlic, green herbs, ginger, and turmeric
- Drink tea
- Moderate amount of red wine (if you drink)
- A little bit of chocolate (>70% cocoa)



# What is oxidation?

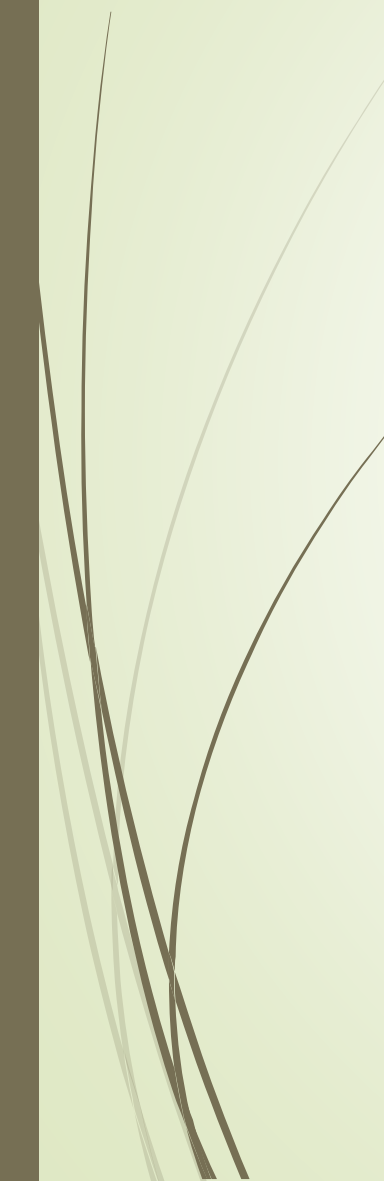


## How antioxidants reduce the free radicals



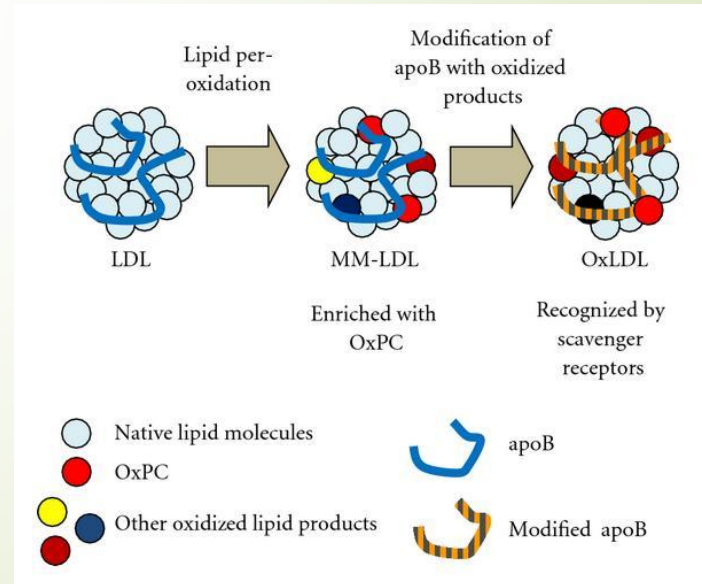



# What are Antioxidants?

- ▶ Help to reduce the oxidative damage to our cells from Free Radicals = instable molecule
  - ▶ Oxidation is like rust on a car
  - ▶ Antioxidants protect against: cancer, arthritis, cataracts, diabetes, stroke, hypertension, heart disease type 2 diabetes and ageing
  - ▶ Vitamins C & E
  - ▶ Selenium, manganese, copper and zinc
  - ▶ Flavonoids & Carotenoids
    - ▶ Found in fruits, veggies, whole grains, teas, spices
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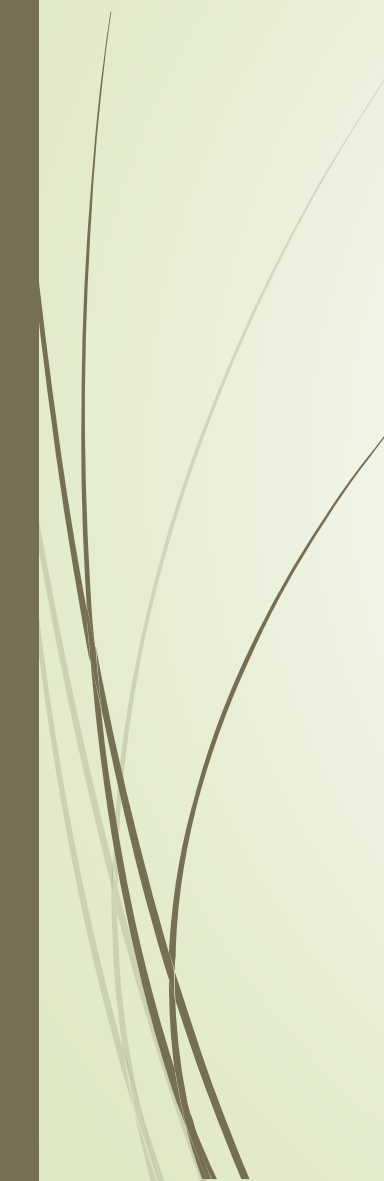
# Antioxidants and Heart Disease

- Reduce oxidized fats in the blood stream
- Oxidized fats can damage blood vessels in the brain (ie. increase risk of stroke)
- Decrease artery stiffness
- Prevent blood clots
- Lower blood pressure
- **Reduce inflammation**





# Check out if your foods have antioxidants

- Apple – turns brown if exposed to air – low in antioxidants
  - Mango – cut it open and nothing happens – lots of antioxidants
  - Put lemon onto your fruit salad to keep it from turning brown – Vit C is antioxidant
  - Oil turns rancid from oxygen exposure – low in antioxidants
- 



# What are phytochemicals?

- Found in plant foods
- They protect the plant from harm
- Also help us – protect cells, DNA, reduce cancer risk, reduce inflammation
- Colorful plants have lots of phytochemicals
- Some phytochemicals act as **ANTIOXIDANTS**

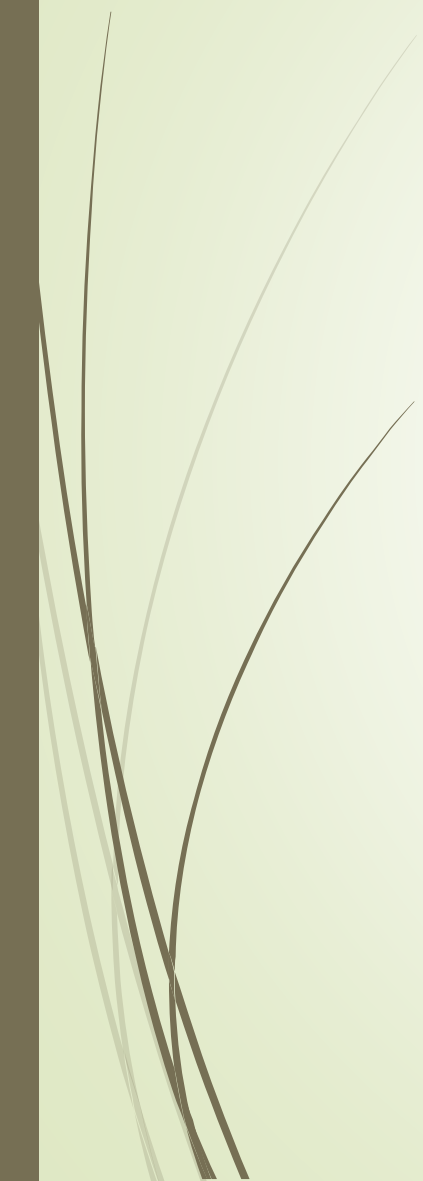



# SOURCES OF PHYTOCHEMICALS

COLOR OF FRUIT AND VEGETABLE GROUPS	SOURCES OF ONE OR MORE OF THE FOLLOWING	FOUND IN ONE OR MORE OF THE FOLLOWING FOODS
<b>GREEN</b>		
	Lutein, Zeaxanthin, Indoles, Vitamin K &/Or Potassium	Turnip, Collard, Kale, Spinach, Lettuce, Broccoli, Green peas, Kiwi, Honeydew, Cabbage, Brussels Sprouts, Bok Choy, Arugala, Swiss Chard, Cauliflower, Leafy greens, Watercress, Endive
<b>YELLOW/ORANGE</b>		
	Beta-Carotene, Vitamin A, Bioflavonoids, Vitamin C, &/Or Potassium	Carrots, Sweet potatoes, Pumpkin, Butternut Squash, Cantaloupe, Mangoes, Apricots, Peaches, Oranges, Grapefruit, Lemons, Tangerines, Clementines, Peaches, Papaya, Nectarines, Pears, Pineapple, Yellow Raisins, Yellow Pepper, Bananas
<b>RED</b>		
	Vitamin C &/Or Anthocyanins	Cranberries, Pink grapefruit, Raspberries, Strawberries, Watermelon, Red Cabbage, Red Pepper, Radishes, Tomatoes, Cherries, Beets, Apples, Red Onion, Kidney Beans, Red Beans
<b>BLUE/PURPLE</b>		
	Anthocyanins, Vitamin C, &/Or Phenolics	Blueberries, Blackberries, Purple Grapes, Black Currants, Elderberries, Plums, Prunes, Raisins, Eggplant
<b>WHITE</b>		
	Allium & Allicin	Garlic, Onions, Leeks, Scallions, Chives



# Should I supplement?

- NO!
  - Best source of antioxidants are the actual plants
  - Studies with supplements have never had the good results that foods have, in fact, may cause harm
- 



# How to load up on antioxidants?

- Plant foods have 64x more antioxidants than animal foods
- Aim for fruits, veggies, herbs and spices at each meal
- Fill half your plate with veggies
- Have salad and cooked veggie at meals
- Have fruit or veggie as snack
- Eat unprocessed whole grains
- Drink tea & coffee
- Utilize spices (not salt)

# Antioxidants per Calorie

AKA, ORAC per Calorie

## Table of Foods

Note: The following table provides antioxidants (ORAC) per calorie for 287 foods. Antioxidant testing results are from USDA Oxygen Radical Absorbance Capacity (ORAC) of Selected Foods, Release 2 (2010) (see <http://www.ars.usda.gov/Services/docs.htm?docid=15866>).

Antioxidants per calorie is an important measurement, as incorporating antioxidants into the diet is limited by total calories consumed. Some foods that are extremely high in antioxidants by weight, such as dark chocolate, are much less attractive when considering antioxidants per calorie due to their calorie density. The antioxidant per calorie measurement is somewhat less practical in measuring essentially calorie free foods such as unsweetened green tea and in measuring foods, such as spices that cannot be eaten in substantial quantities. In the following table, spice-type items that cannot be eaten in significant quantities are shaded in green. Berries, which as a group make up the highest antioxidants foods that can be eaten in significant quantities, are shaded in red.

Level	Food	ORAC per 100g	Calories per 100g	ORAC per calorie
400 + ORAC per Calorie	Tea, green, brewed	1253	1	1253
	Tea, brewed, prepared with tap water	1128	1	1128
	Spices, cloves, ground	290283	323	899
	Spices, oregano, dried	175295	265	661
	Rosehip	96150	162	594
	Spices, thyme, dried	157380	276	570
	Spices, cinnamon, ground	131420	247	532
	Spices, rosemary, dried	165280	331	499
	Chocolate, dutched powder	40200	100	402
200- 400 ORAC per calorie	Spices, sage, ground	119929	315	381
	Spices, turmeric, ground	127068	354	359
	Chokeberry, raw	16062	47	342
	Thyme, fresh	27426	101	272
	Sage, fresh	32004	119	269
	Raspberries, black	19220	73	265
	Spices, basil, dried	61063	233	262
	Basil, fresh	4805	19	255
	Spices, parsley, dried	73670	292	252
	Cocoa, dry powder, unsweetened	55653	229	243
	Blackberries, raw	5905	25	236
	Blueberries, wild, raw	9621	43	224
	Raspberries, raw	5065	25	203
Elderberries, raw	14697	73	201	
Peppermint, fresh	13978	70	200	
100- 200	Cranberries, raw	9090	46	196
	Juice, black raspberry	10460	54	193

# Sprouting

- When foods are sprouted, it can increase their antioxidant power
- [https://www.youtube.com/watch?v=QOn1hVZUDvo&feature=emb\\_rel\\_end](https://www.youtube.com/watch?v=QOn1hVZUDvo&feature=emb_rel_end)



# Carotenoids

- Beta Carotene
- Lycopene
- Lutein
- Zeaxanthin
- Lower risk of cancers and CVD
- Source:
  - Orange and yellow fruits and veggies
  - Dark green leafys
  - Eat a huge salad as a main dish at least once a day



# Flavonoids

- Anthocyanins
- Flavonols
- Isoflavones
- Catechins
- Anti-inflammatory antioxidants = anti-cancer
- Lowers risk of cardiovascular disease
- Sources:
  - Berries, black & green tea, soy, veggies  
whole wheat, wine, purple grape juice
  - Oregano, olives, onions, garlic, leeks,  
chives





# Isothiocyanates

- Cruciferous veggies
  - Bok choy
  - Broccoli
  - Brussels sprouts
  - Cabbage
  - cauliflower
  - Collard and mustard greens
  - Kale and Swiss chard and watercress
- Immune-strengthening
- Cancer fighting





# Spices

- Flavor compounds in spices are the Antioxidants
- Turmeric
  - Curcumin – gives it yellow color
  - Anti-inflammatory
- Oregano/Marjoram
- Peppermint
- Cinnamon, Cloves
- ½ tsp cinnamon on your oatmeal increases the antioxidant power from 20 units to 120 units

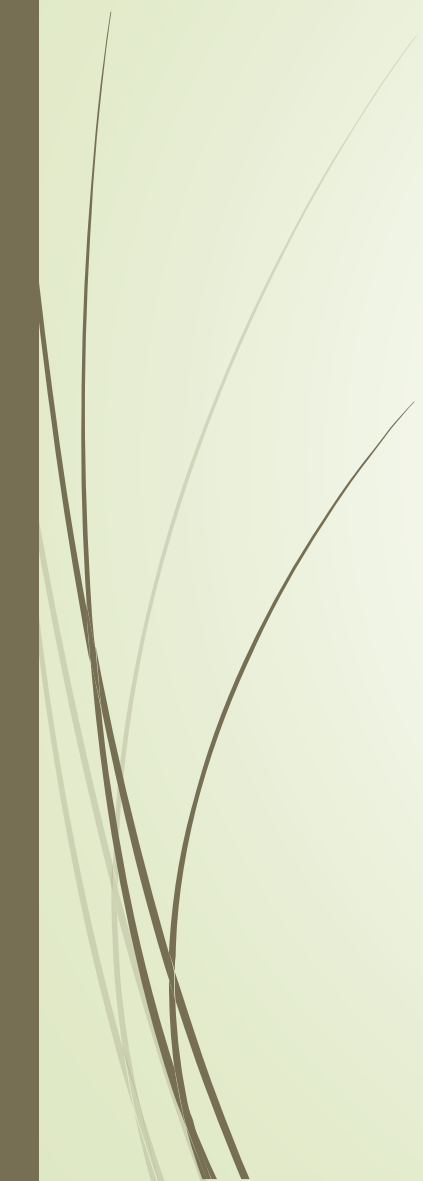
# What can you do to have more immune-strengthening foods this holiday season?

- Salad every day?
- Make some soup/stew?
- Fruit &/or Veg at each meal?
- 2 cups veg at lunch AND dinner?
- Sprout?
- Fewer dairy and animal foods?
- More spices?





# Don't forget it isn't just food!

- 1. Practice good hygiene
    - Wash hands, don't touch face & eyes
    - Get vaccinated
    - Get regular medical care
  - 2. Eat healthy (more on that later)
    - Healthy gut
  - 3. Exercise regularly
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# My immune-boosting holiday dish

- Hasselback Squash with Herby Tahini
  - Butternut Squash (Carotenoids)
  - Garlic (Flavonoids)
  - Quinoa (Selenium)
  - Salad greens (Isothiocyanates)
  - Pomegranate (Vitamin C)
  - Tahini (lignans antioxidant)
  - Mint (vitamin A & C)
  - Lemon (Vitamin C)
  - Tofu (antioxidants, isoflavones)
  - Miso paste (selenium, fermented)



# Tips for slicing the squash





HAPPY THANKSGIVING



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- 
- Tofu Feta: <https://www.connoisseursveg.com/tofu-feta/#wprm-recipe-container-16350>
  - Squash: <https://nourishingamy.com/2021/03/29/hassleback-squash-with-herby-tahini-vegan-gf/>