



INSPIRE

wellness & nutrition

Mindful Nutrition:
Let's Love our
Bones!

3 Stages of Bone Health

- Stage 1: first 25 years of woman or man's life – bone building
- Stage 2: from 26 years old to menopause/andropause – take steps to avoid breakdown of bone
- Stage 3: post menopause/andropause – over 50 years old – support bone growth and limit bone loss



What is osteoporosis?

- Chronic progressive “lifestyle” disease affecting mostly women
- 20 – 50% of post menopausal women are affected by low bone density
- Over 2 million men are affected – more likely to have a fracture related to osteoporosis than get prostate cancer
- Most serious complication: hip fracture

A “lifestyle” disease

- Major causes:
 - Old age
 - Hereditary bone disease
 - Low body weight (<127 lbs)
 - Current smoker
 - Steroid therapy

Normal Bone



Bone with Osteoporosis





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Other risk factors

- Poor nutrition
- Low hormone production
- Excess alcohol
- Lack of exercise



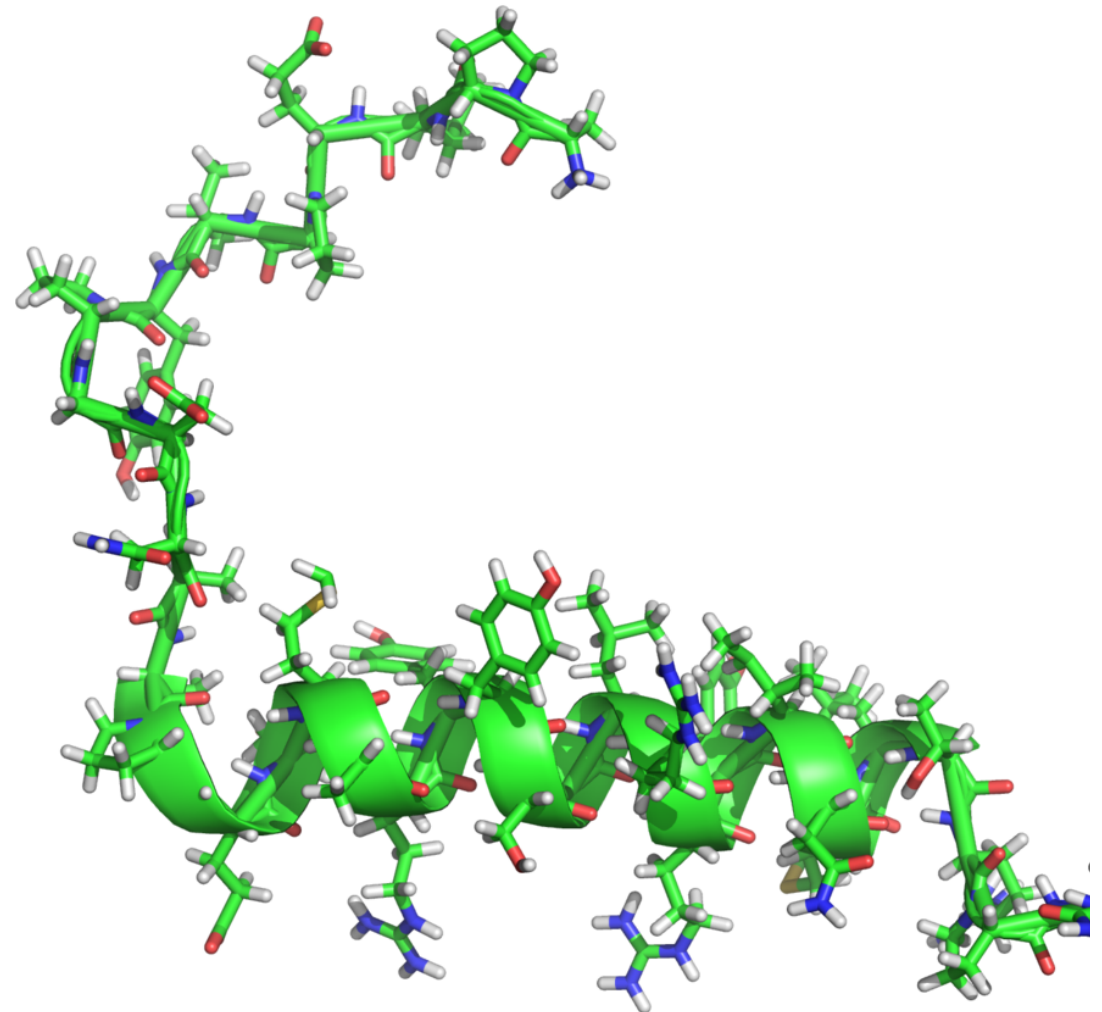
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- DEXA Scan- gold standard - get a baseline
 - Lab work: urinary and serum calcium levels, vitamin D levels, hormone analysis (parathyroid, thyroid)
 - Nutrition analysis
 - Lifestyle analysis - exercise



Find out the
status of
your bone
health

Hormones

- In first 3 – 5 years after menopause, average woman loses 7 – 10% of her bone density
- Hormone production drastically declines during this time
- Men don't see bone loss until later when testosterone declines



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Which hormones are related to bone health?

- **Growth hormone** – puberty – building both bone and muscle
- **Estrogen** - controls the action of rebuilding bone – increasing estrogen (estradiol) may slow bone loss
- **Progesterone and testosterone** – increase the rate at which bone is rebuilt
- **Thyroid hormones** – overactive thyroid can increase risk of low bone mineral density
- Increase in growth hormone and testosterone can support muscle mass – important for preventing falls



How can we improve our
hormone status?

Reduce stress

- Stress – physical and emotional – disrupts our adrenal glands and hormones
- Chronic high cortisol levels in the bloodstream creates the need for more hormones... thyroid, insulin, progesterone, testosterone... to do the same job. Cortisol blocks the bone-building effects of progesterone
- Meditation and breathing

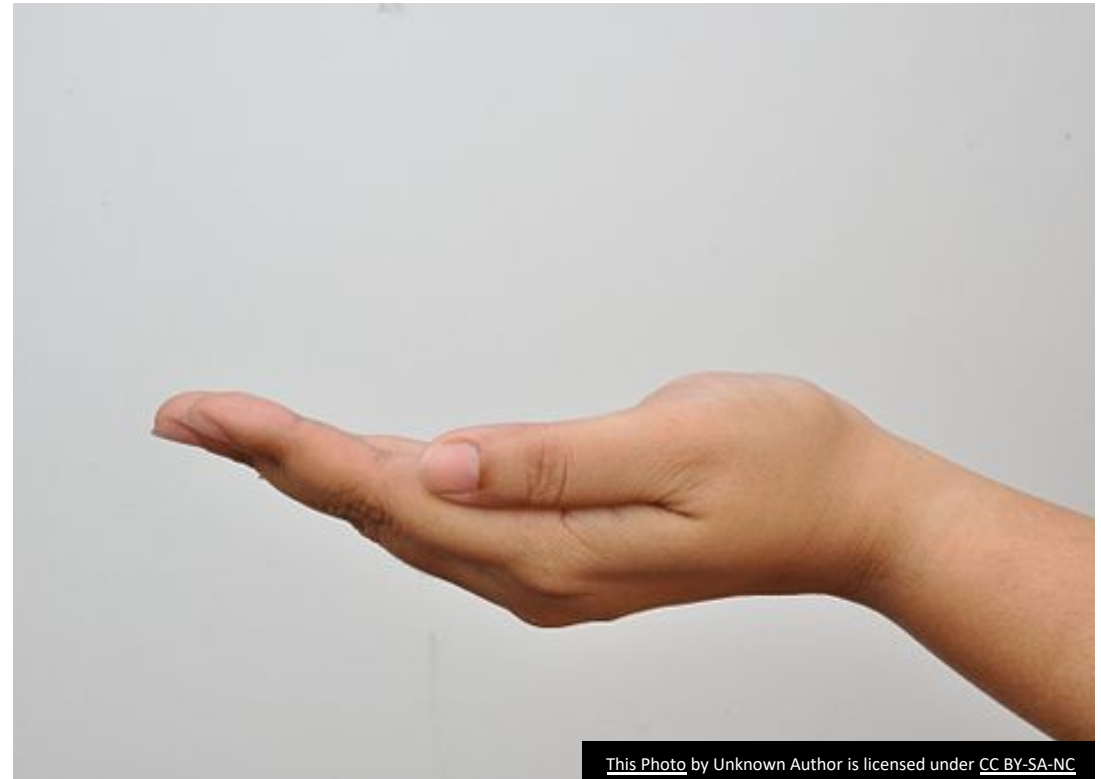
Eat adequate protein

- Protein makes up $\frac{1}{2}$ of bone volume and $\frac{1}{3}$ of bone mass
- Amino acids are the building blocks of hormones
- Excessive animal protein increases removal of calcium from bones
- Good sources of protein: eggs, tofu, quinoa, yogurt, nuts, whey, hemp, or pea protein powders
- Animal sources: grass fed beef, chicken, wild fish – use in moderation



Protein – rule of thumb

- Each meal include protein source – size of palm
- Each snack include protein source – 1/3 of palm



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Drink less alcohol

- Chronic heavy drinking disrupts balance between bone formation and removal of old bone
- Alcohol can suppress new bone formation
- Drink in moderation (or none at all) for many health benefits



Exercise

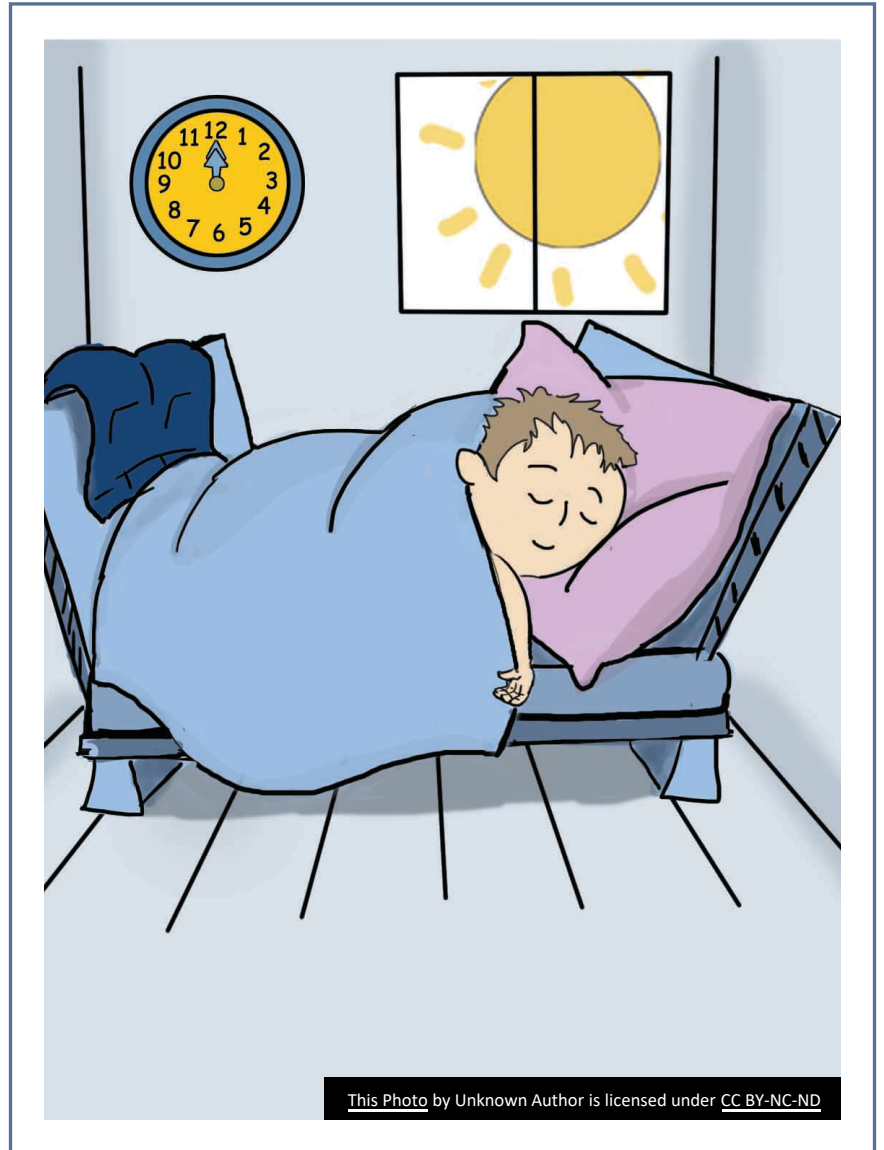
- Resistance training and high impact exercise most beneficial for bone health
- Regular exercise later in life w/adequate calcium and vitamin D has shown a modest effect on slowing decline of bone density
- Bone building: remodeling and resorption. Problem when there is imbalance.
- Weight bearing exercise stresses the bone activating a gene to build bones
- If you have osteoporosis – start exercise slowly!
- Lifting weights, yoga, hiking, running, brisk walking, pilates, tai chi, dancing



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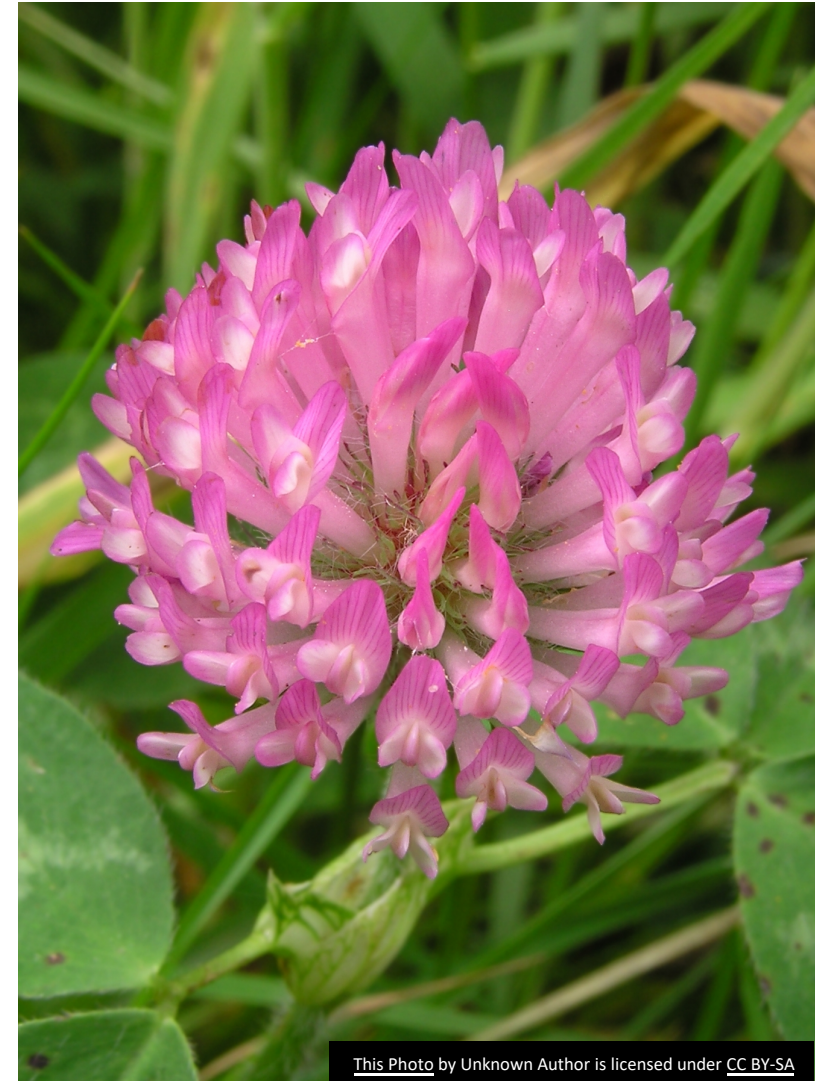
Sleep

- Recharges the brain while body relaxes and heals
- Blood supply to muscles increases, helping them to repair
- Growth hormone peaks during sleep – tissue growth and repair
- Insomnia causes testosterone to decrease by 40%



Hormone therapies & herbal alternatives

- Hormone replacement therapy (HRT)
- Bio-identical hormone therapy
- Other alternatives – lacking research:
 - Black cohosh
 - Red clover
 - Soy
 - Potential ... Herbal therapy focusing on HPA Axis where hormones are produced



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Diet and nutrition

- Provide all of the necessary elements for bone health
- Including protein, fatty acids, calcium, magnesium, Vitamins A, D, E, K and more



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Calcium

- Essential - but requires other trace minerals, vitamins, and hormones to build bone and reduce risk of fracture
- Too much calcium (> 1500 mg) associated with risk of renal stones, CVD, malabsorption of other nutrients
- Estimate how much calcium you are getting from food (average adult gets 400-700 mg/day), then supplement the difference
- Post-menopausal women: total calcium intake recommended 1200 – 1500 mg/day
- Take calcium supplements with food for best absorption



CALCIUM-RICH FOODS

Created by TheHealthnut-Corner



Fortified Cereal



Sweet Potato
(cooked)



Yoghurt



Sardines w/ Bones
(in oil)



Spinach
(cooked)



Patchoi
(cooked)



Dasheen Bush
(cooked)



Okro
(cooked)



Edamame
(cooked)



Tofu



Sesame Seeds
(roasted)



Chia Seeds



Soybeans
(cooked)



White Beans
(cooked)



Fortified
Orange juice

CALCIUM CONTENT IN SELECTED FOODS

FOODS	SERVING	CALCIUM CONTENT
Fortified Cereal	1 cup	1 000 mg
Tofu	1 cup	573 mg
Fortified Orange Juice	1 cup	500 mg
Yoghurt	1 cup	415 mg
Sardines with bones	3 oz.	351 mg
Spinach (cooked)	1 cup	245 mg
Patchoi (cooked)	1 cup	158 mg
Sesame Seeds (toasted)	1 oz.	140 mg
Dasheen Bush (cooked)	1 cup	125 mg
Edamame (cooked)	1 cup	98 mg
Chia Seeds	1 tbsp.	89 mg
Soybeans (cooked)	1/2 cup	84 mg
White Beans (cooked)	1/2 cup	80 mg
Okro (cooked)	1/2 cup	61 mg
Sweet Potato (cooked)	1 medium	43 mg

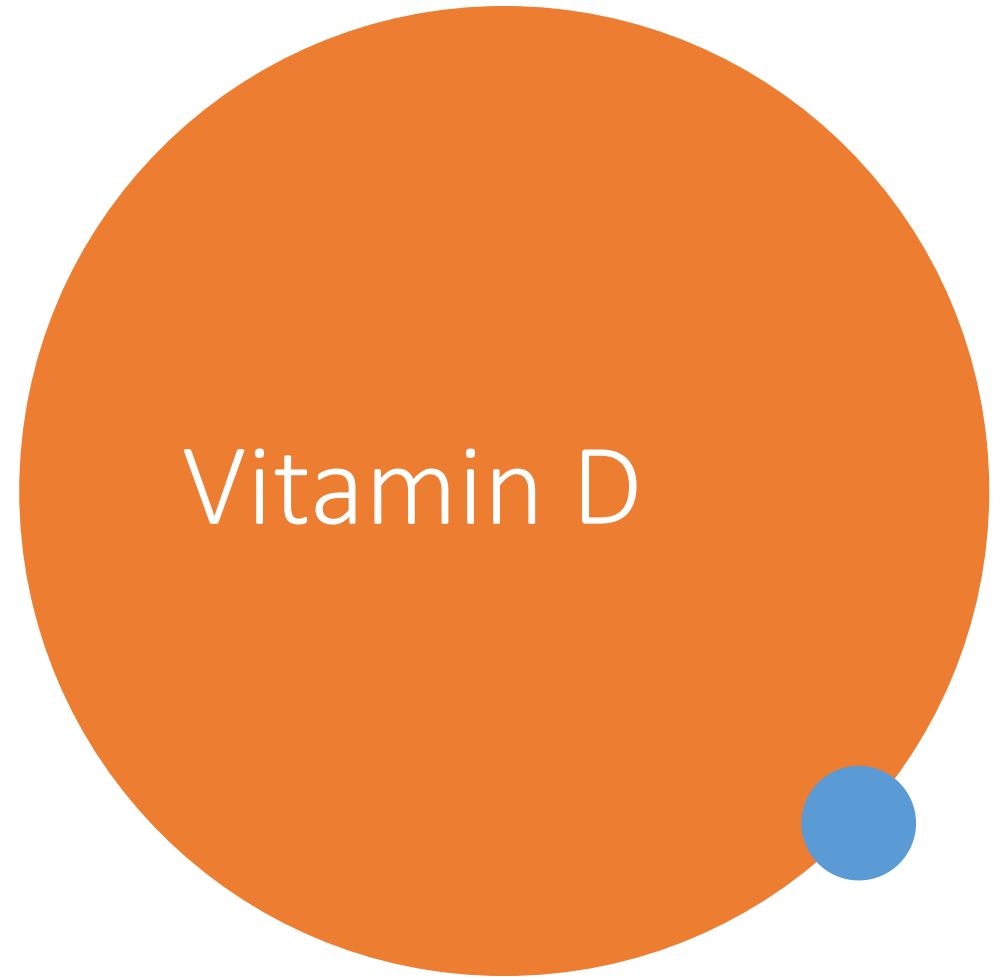
DAILY NEEDS FOR CALCIUM (RDA)

AGE GROUP	MALE	FEMALE	PREGNANCY & LACTATION
1-3 years	700 mg	700 mg	
4-8 years	1000 mg	1000 mg	
9-13 years	1300 mg	1300 mg	
14-18 years	1300 mg	1300 mg	1300 mg
19-50 years	1000 mg	1000 mg	1000 mg
51 -70 years	1000 mg	1200 mg	
71 years ≥	1200 mg	1200 mg	

Created by TheHealthnut-Corner



- Helps maintain serum calcium at normal levels
- Increases bone building cells
- Enhances intestinal absorption of calcium
- Essential for immune system and overall health



Vitamin D

The body makes vitamin D when it is exposed to Ultraviolet (UV) rays from the sun.



FOOD SOURCES:

Cheese
Margarine
Butter
Fortified Milk
Healthy Cereals
Fatty Fish




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Magnesium

- Co-factor in more than 300 enzymatic reactions in the body, including bone mineralization
- Helps form calcium crystals in bones
- Converts Vitamin D to active form in the body
- Regulates calcium metabolism
- Aim for 500 mg/day or ½ the amount of calcium

Food	mg per serving	Percent daily value
Almonds, dry roasted, 1 ounce	80	20
Spinach, boiled, ½ cup	78	20
Cashews, dry roasted, 1 ounce	74	19
Peanuts, oil roasted, ¼ cup	63	16
Cereal, shredded wheat, 2 large biscuits	61	15
Soy milk, plain or vanilla, 1 cup	61	15
Black beans, cooked, ½ cup	60	15
Edamame, shelled, cooked, ½ cup	50	13
Peanut butter, smooth, 2 tablespoons	49	12
Bread, whole wheat, 2 slices	46	12
Avocado, cubed, 1 cup	44	15
Potato, baked with skin, 3.5 ounces	43	11
Rice, brown, cooked, ½ cup	42	11
Yogurt, plain, low fat, 8 ounces	42	11
Breakfast cereals, fortified with magnesium	40	10

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- Zinc – 15 mg/day
 - Copper – 2 mg/day
 - Manganese – 2 mg/day
 - Vitamin K – 90 – 120 mcg/day
 - Vitamin B12 – 500 – 5000 mcg/day



Other
nutrients for
bone health

Acid – Alkaline Balance and Bone

- When food is broken down – turns into ash – either acidic or alkaline
- Acid-producing foods promote loss of calcium
- Standard American Diet (SAD) is more acidic, resulting in decreased calcium levels in body
- Ideal pH level for most people: 6.8 – 7.4

Acidic/Alkaline Foods

- Acidic:
 - Red meat
 - Refined sugar
 - White flour
- Salt – use Himalayan Crystal Salt – contains 84 trace minerals (including calcium) – perfect structure to alkalize the body
- High phosphoric acid foods – soda, coffee, certain teas, dairy, chocolate – if excess, leaches calcium and magnesium from body
- It's all about balance!

Most Alkaline	Alkaline	Lowest Alkaline	FOOD CATEGORY	Lowest Acid	Acid	Most Acid
Stevia	Maple Syrup, Rice Syrup	Raw Honey, Raw Sugar	SWEETENERS	Processed Honey, Molasses	White Sugar, Brown Sugar	NutraSweet, Equal, Aspartame, Sweet 'N Low
Lemons, Watermelon, Limes, Grapefruit, Mangoes, Papayas	Dates, Figs, Melons, Grapes, Papaya, Kiwi, Berries, Apples, Pears, Raisins	Oranges, Bananas, Cherries, Pineapple, Peaches, Avocados	FRUITS	Plums, Processed Fruit Juices	Sour Cherries, Rhubarb	Blueberries, Cranberries, Prunes
Asparagus, Onions, Vegetable Juices, Parsley, Raw Spinach, Broccoli, Garlic	Okra, Squash, Green Beans, Beets, Celery, Lettuce, Zucchini, Sweet Potato, Carob	Carrots, Tomatoes, Fresh Corn, Mushrooms, Cabbage, Peas, Potato Skins, Olives, Soybeans, Tofu	BEANS VEGETABLES LEGUMES	Cooked Spinach, Kidney Beans, String Beans	Potatoes (without skins), Pinto Beans, Navy Beans, Lima Beans	Chocolate
	Almonds	Chestnuts	NUTS SEEDS	Pumpkin Seeds, Sunflower Seeds	Pecans, Cashews	Peanuts, Walnuts
Olive Oil	Flax Seed Oil	Canola Oil	OILS	Corn Oil		
		Amaranth, Millet, Wild Rice, Quinoa	GRAINS CEREALS	Sprouted Wheat Bread, Spelt, Brown Rice	White Rice, Corn, Buckwheat, Oats, Rye	Wheat, White Flour, Pastries, Pasta
			MEATS	Venison, Cold Water Fish	Turkey, Chicken, Lamb	Beef, Pork, Shellfish
	Breast Milk	Soy Cheese, Soy Milk, Goat Milk, Goat Cheese, Whey	EGGS DAIRY	Eggs, Butter, Yogurt, Buttermilk, Cottage Cheese	Raw Milk	Cheese, Homogenized Milk, Ice Cream
Herb Teas, Lemon Water	Green Tea	Ginger Tea	BEVERAGES	Tea	Coffee	Beer, Soft Drinks