ESU 009– Nutraceuticals for special situation such as stress, osteoporosis and hypertension
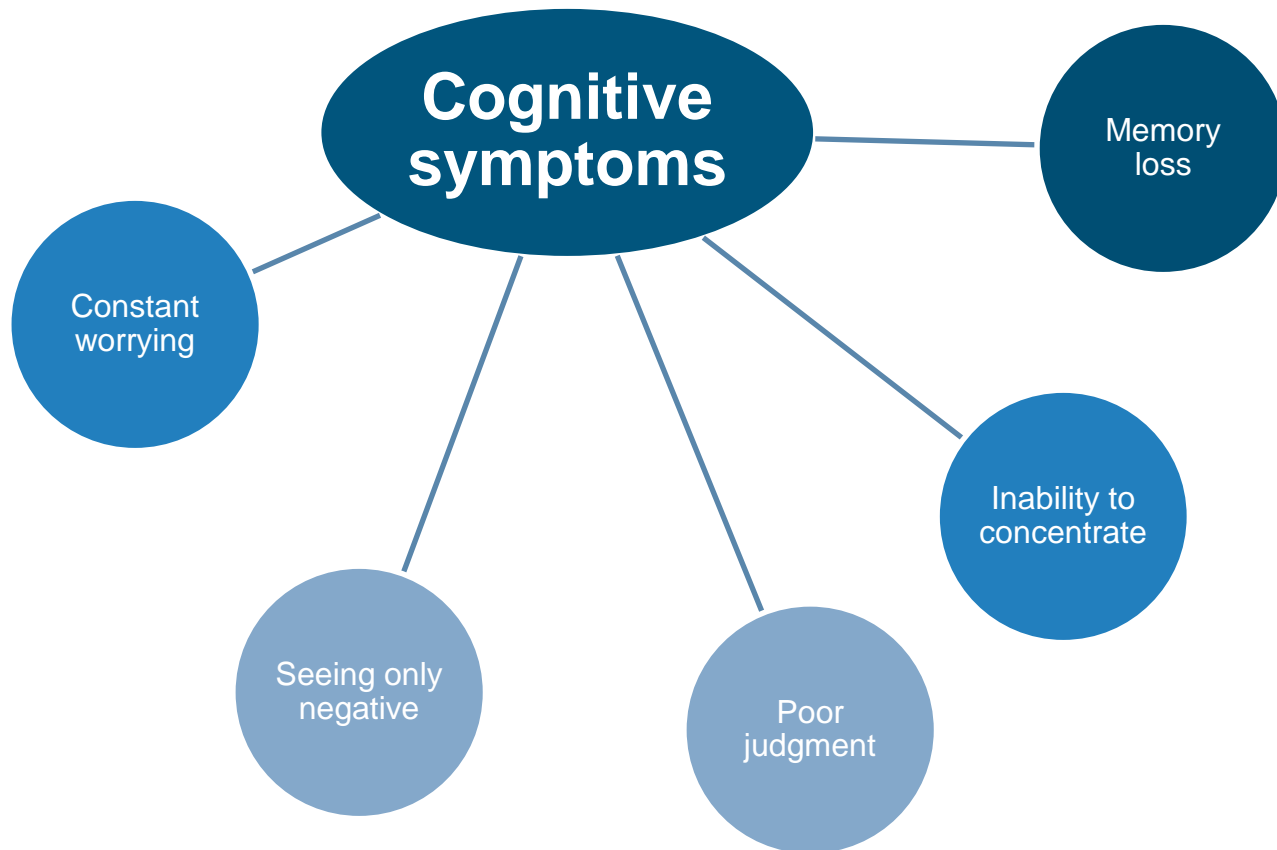
Lecture 13

- Stress has become the leading health problem in our society.

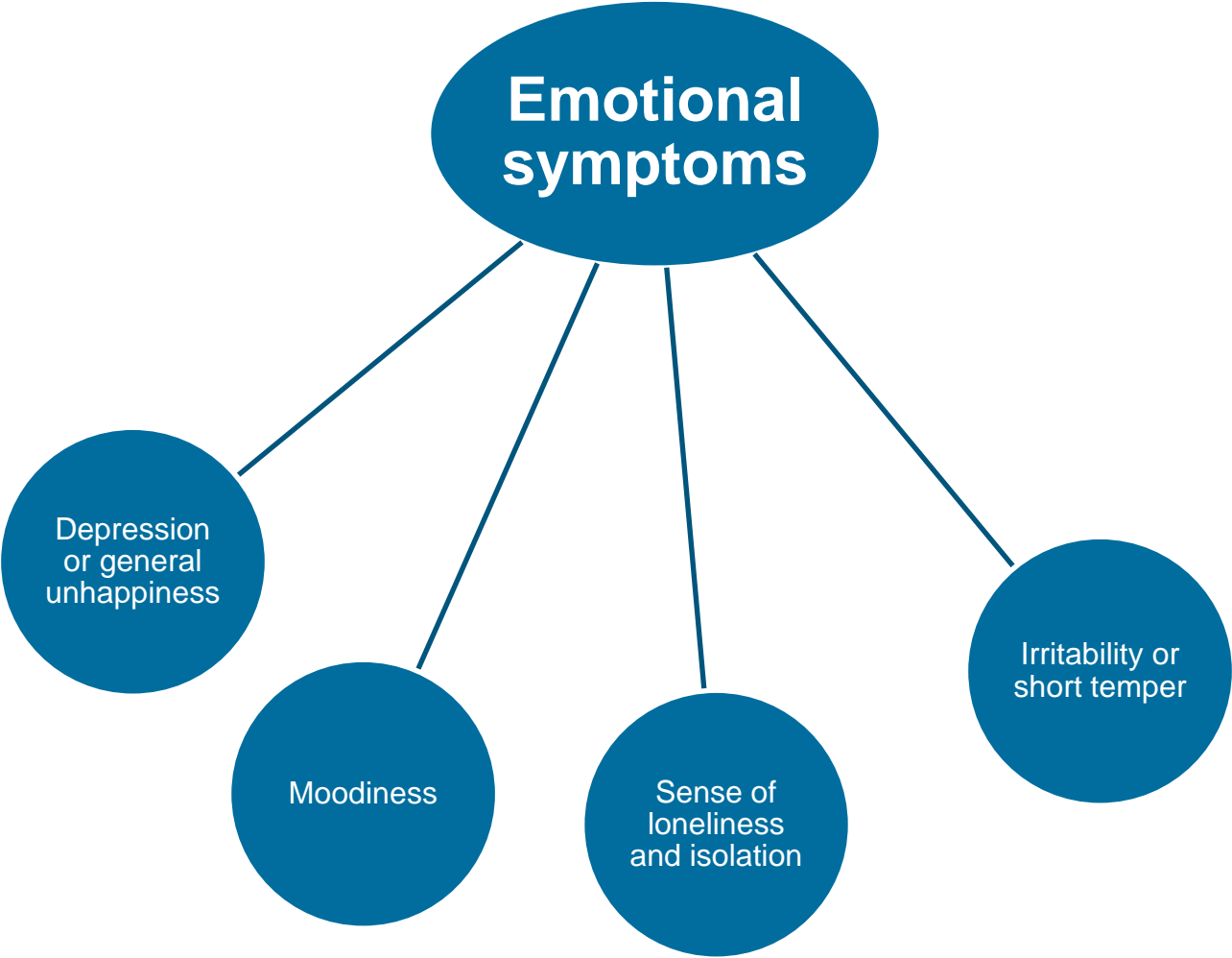- Stress is a normal physical response to events that make you feel threatened or upset

Warning signs
and
symptoms
of

Cognitive symptoms

- Memory loss
- Constant worrying
- Seeing only negative
- Poor judgment
- Inability to concentrate

Physical symptoms

- Frequent colds
- Aches and pains
- Chest pain, rapid heartbeat
- Diarrhea or constipation
- Nausea, dizziness
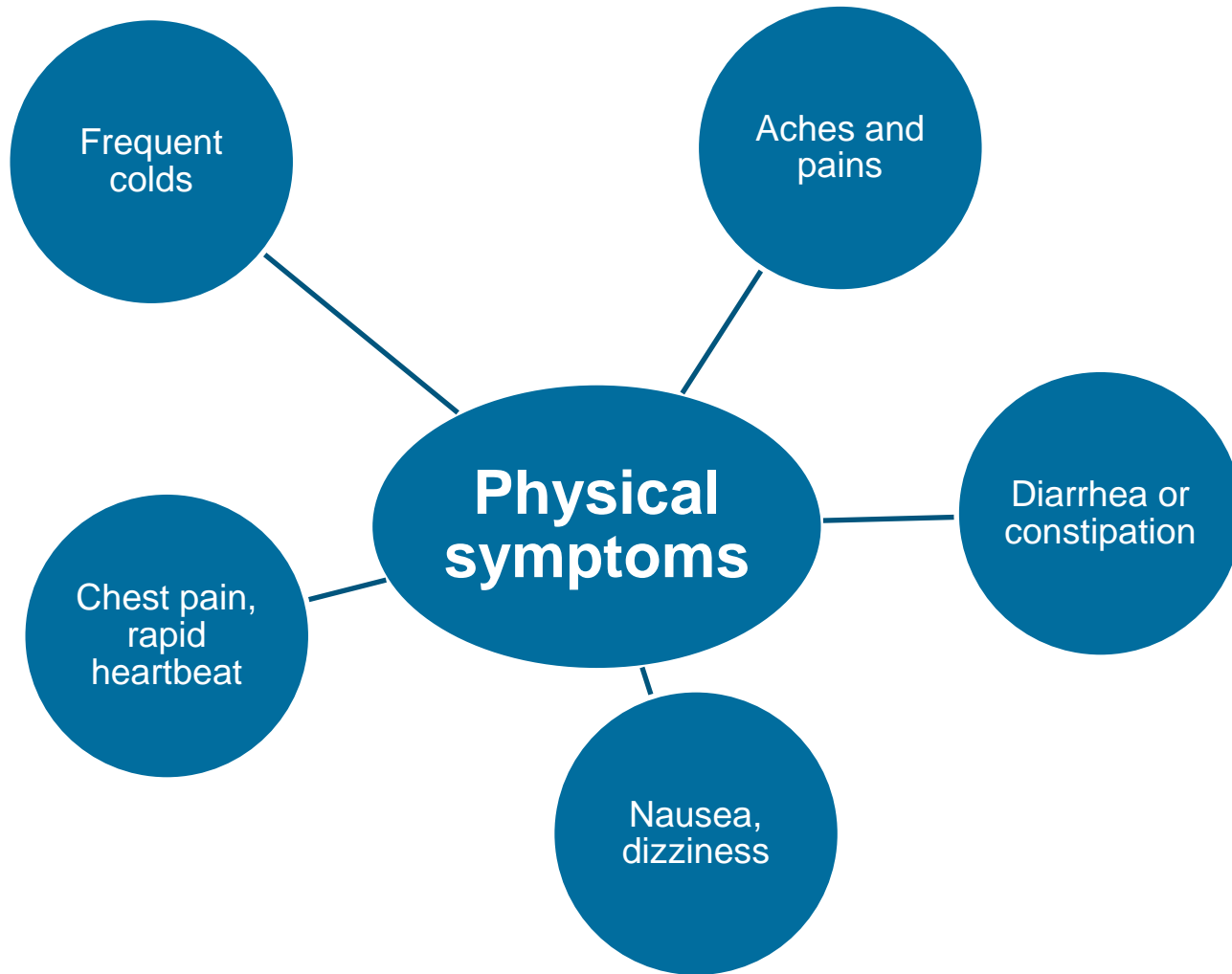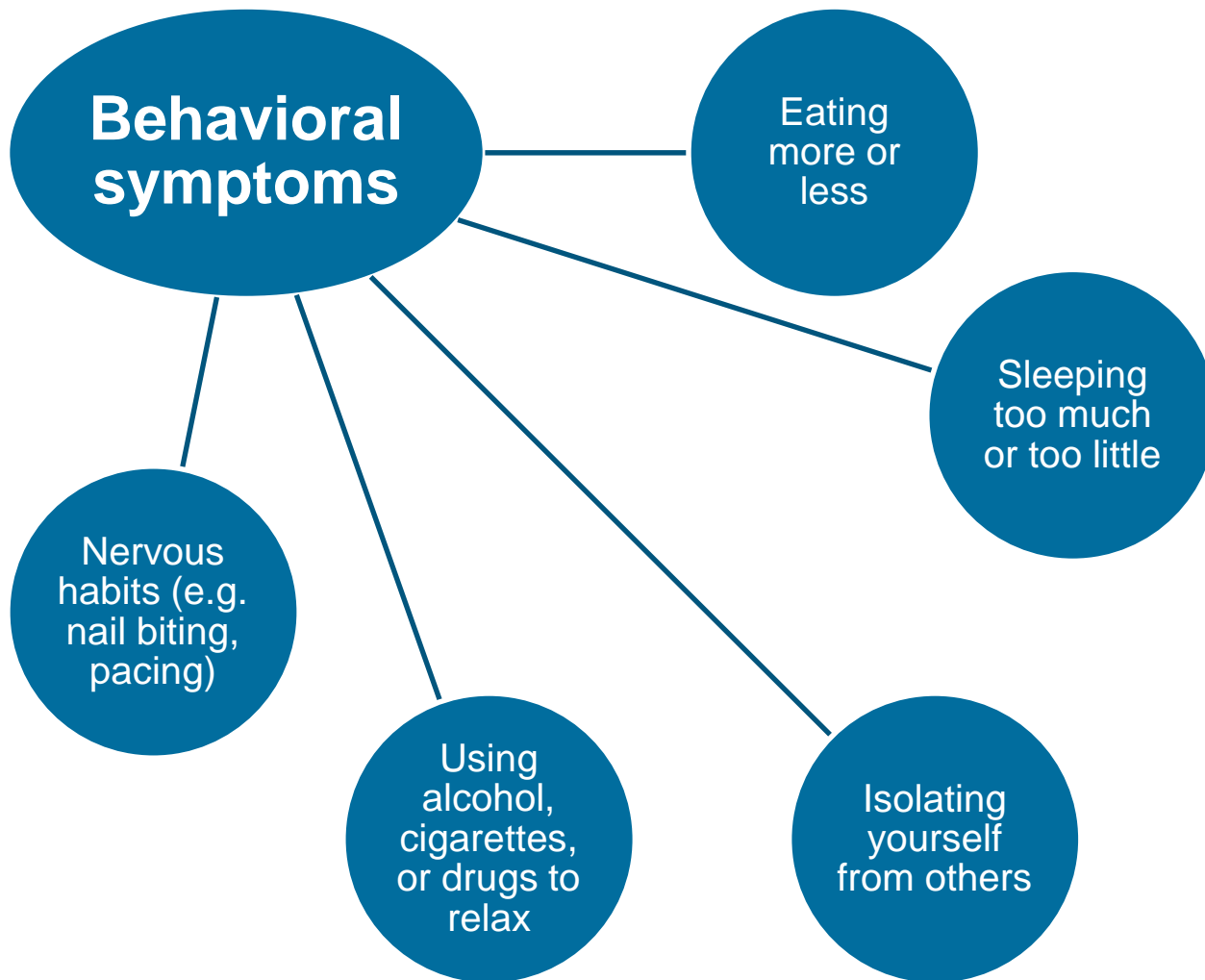
Nutraceuticals for reducing stress

- Folic acid

- Potassium

- Magnesium

- Zinc

- Omega 3

- B complex vitamins

- Vitamin C

- Tryptophan

FOLIC ACID RICH FOODS:

RICH SOURCES
Brussel sprouts
Asparagus
Spinach
Kale
Blackeye peas
Cereals
Liver
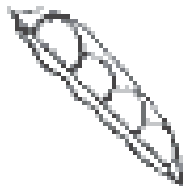
GOOD SOURCES
Broccoli
Cabbage
Green beans
Cauliflower
Beef extracts
Kidney beans
Iceburg lettuce
Bean sprouts
Chick peas
Soy beans
Peas
Okra

MODERATE SOURCES
Most fruits
Nuts
Brown rice
Bran
Whole grain breads
Whole grain pastas
Most other vegetables
Potatoes
Yogurt
Oats
Cheese
Milk
Beef
Eggs

Food Sources of Magnesium

Wheat Bran

Almonds

Spinach

Cashews

Black-eyed peas

Oatmeal

Peanuts

Brown rice

Top 10 Potassium Rich Foods

1. Dark, leafy greens: spinach, kale, and collards
2. Beans: white, lima, kidney, peas, and pinto
3. Potatoes: both white and sweet (with skins)
4. Dried fruit: coconut, apricots, peaches, prunes, dates, and raisins
5. Squash: acorn, butternut, and zucchini
6. Fatty fish: salmon, halibut, and tuna
7. Fresh fruit: bananas, kiwi, nectarines, peaches, cantaloupe, and avocados
8. Fresh vegetables: asparagus, green beans, brussels sprouts, and mushrooms
9. Yogurt
10. Orange juice

field to plate. Nutrition Roadmaps

B Complex Vitamins (central node)

B1 Thiamine
- Part of enzyme Thiamine Pyrophosphate
  - Energy production, carbohydrate metabolism & function of nerve cells
- Food Sources
  - Seeds, nuts, soybeans, legumes, whole grains
  - Alcohol or sulfites destroy thiamine. Diuretics induce deficiency in B1

B2 Riboflavin
- Critical for energy production
  - Deficiency: cracked lips, corner of mouth, burning itching eyes/tongue, problems with mucous membranes
- Food Sources
  - Organ meats, whole grains, nuts, leafy greens, legumes

B3 Niacin
- Can be made in body from amino acid: tryptophan
  - Technically not an "essential" vitamin
- NAD/NADPH
- Critical for
  - metabolism of carbohydrate, fat, cholesterol
  - Energy production
  - Sex and adrenal hormones
- Critical in a myriad of enzymatic reactions
- Food Sources
  - Organ meat, fish, eggs, nuts, whole grains

Choline
- Works in tandem with other B vitamins to package and export fat from liver
  - Food Sources: Egg yolks, legumes, organ meat
- Technically not a B vitamin but closely associated

B5 Pantothenic Acid
- A component of Coenzyme A
  - Critical for carbohydrate and fat metabolism
- Manufacture of adrenal hormones & optimal functioning of adrenals
- Widely available: organ meats, legumes, vegetables

B6 Pyridoxine
- Critical for protein & structural compounds
- Neurotransmitters, red blood cells, prostaglandins
  - Excellent sources found in nuts, seeds, whole grains, legumes, vegetables
- Hormonal balance

B12 Cobalamine
- Works in tandem with folic acid
  - DNA synthesis
  - Reactivates folic acid
- Deficiency of B12 = deficiency folic acid
  - organic meat, fish, eggs, cheese.
- Impaired neurological function
- Some fermented foods "may" provide B12, however inconsistent amounts and questionable availability to body

Biotin
- Involved in manufacture of, and utilization of proteins and fat
- Can be manufactured by intestinal bacteria
  - Brewer's yeast, organ meats, soybeans, nuts, whole grains, mushrooms

Folic Acid
- Cell growth & division
- Critical in homocysteine metabolism
  - High levels consistent with damage to blood vessels and devt. heart disease
- Best food sources
  - Dark leafy greens, legumes, whole grains, cruciferous veg, nuts, berries, oranges

NOTE: Brewers yeast is an excellent source of most B vitamins

©2011 field to plate.

Ω3 Rich foods

- **Flaxseeds and walnuts**

- **Beans**

- Fish etc.

Tryptophan Rich Foods

- Oats

- Dried dates

- **Milk**

- **Yogurt**

- **Cottage cheese**

- **Red meat**

- Eggs

- **Fish**

- **Poultry**

- **chickpeas**, sunflower seeds, pumpkin seeds, **spirulina**, bananas, and peanuts

ZINC RICH FOODS

- Oysters

- Red meat and poultry

- Beans

- Nuts

- Whole grains

- Fortified breakfast cereals

- Dairy products

Reducing risk of

- Osteoporosis is defined as a "disease characterized by low bone mass and microarchitectural deterioration of bone tissue leading to enhanced bone fragility and a consequent increase in fracture incidence."

- Bone cells are dependent upon all nutrients for their cellular activity and hence nutrition plays an important role in the development, prevention, and treatment of osteoporosis.

Nutraceuticals with clinical evidence to support claims for benefits in Osteoporosis

- Calcium

- Copper

- Fish oils

- Fluoride

- Magnesium

- Manganese
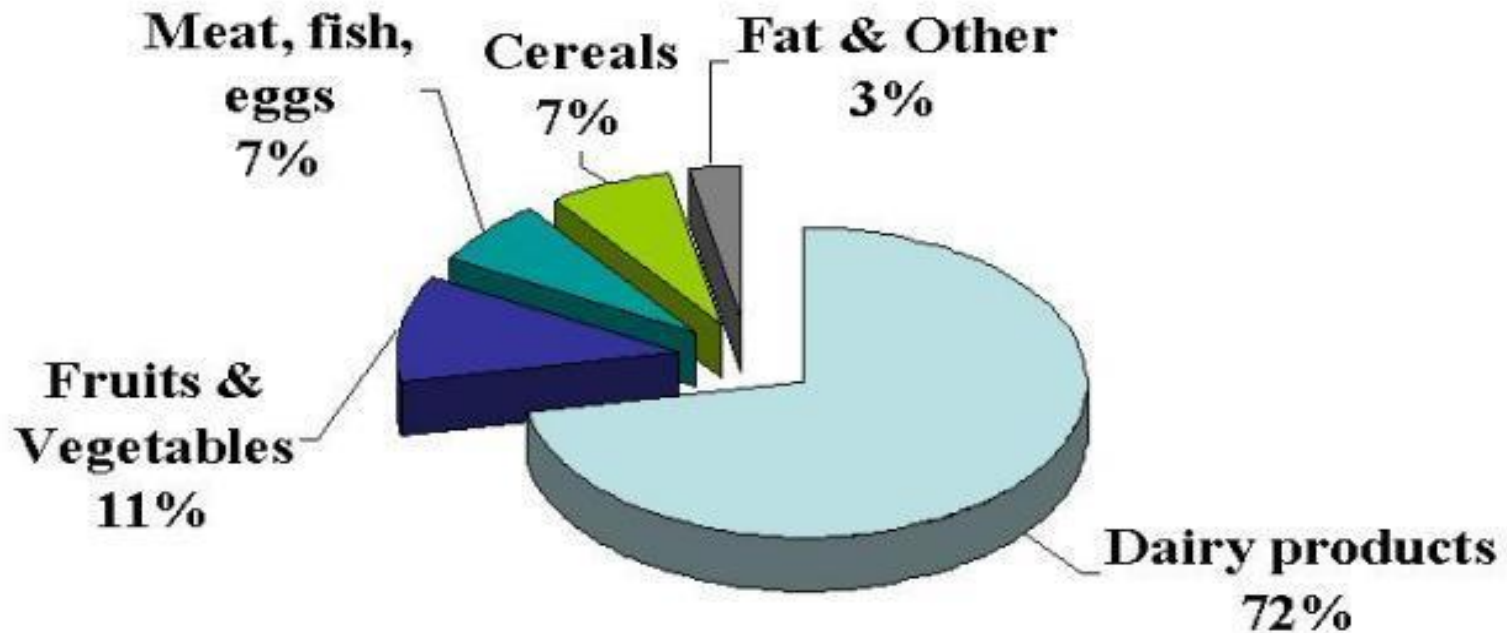
- Phytoestogens

- Vitamin D

- Vitamin K

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

Dietary sources of Calcium

Meat, fish, eggs 7%
Cereals 7%
Fat & Other 3%
Fruits & Vegetables 11%
Dairy products 72%

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FOOD FOR STRONG BONES

When it comes to building strong bones, there are two key nutrients:

CALCIUM
Supports your bones and teeth structure.

Apollo
HEALTH CITY
TOUCHING LIVES

VITAMIN D
Improves calcium absorption and bone growth.

Cheese

Collard Greens

Eggs

Salmon

Yogurt

Sardines

Milk

Tuna

Spinach

Fortified Cereal

MAGNESIUM RICH FOODS

SESAME SEEDS		**SUNFLOWER SEEDS**
SPEARMINT		**DILL**
WATERMELON SEEDS		**BASIL**
PINE NUTS		**BROCCOLI**
ALMONDS		**OKRA**
PUMPKIN SEEDS		**FLAX SEEDS**
BRAZIL NUTS		**SPINACH**
CACAO		**CHIVES**

Rawforbeauty

MINERALS   FOOD CHARTS

	EXCELLENT SOURCE	GOOD SOURCE	FAIR SOURCE
FLUORINE Fluoridated water lacks a balance of Calcium Fluoride (acid mineral)	Asparagus, Oats, Garlic, Rice Cabbage, Goat milk, Watercress	Rice bran, Beetroot, Endive Corn, Barley, millet, Wheat	Fresh vegetables, Fresh fruits
MANGANESE ESSENTIAL ASSOCIATED NUTRIENTS FOR EFFECTIVE ABSORPTION: Calcium and Phosphorus. Vitamins: B1 and E. (alkaline mineral)	Chestnuts, Brazil nuts, Hazel nut Almonds, Peanuts, Pecan nut Coconut, Walnut, Buckwheat Barley, Kidney beans, Lima beans	Pineapple, Grapes, Beetroot Parsley, Lettuce, Watercress Apricots, Bananas, Cherries Green beans, Kale, Artichoke	Avocado, Blackberries, Dates Carrots, Celery, Cucumber Dandelion, Figs, Lemons, Pears Apples, Melons, Parsnips, Chive
COPPER ESSENTIAL ASSOCIATED NUTRIENTS FOR EFFECTIVE ABSORPTION: Cobalt, Iron and Zinc. (acid mineral)	Sunflower seeds, Sesame seeds Brazil nuts, Hickory nuts Hazel nuts, Pecan nuts, Walnuts Pistachio nuts, Almond nuts Chestnut, Coconut, Peanuts	Wheat, Buckwheat, Rye, Soya bean Rice, Wheat germ, Parsley, Spinach, Olives, Dates, Apple Apricots, Beetroot, Broccoli Pears, Bananas, Green beans	Carrots, Berries, Garlic, Oats Celery, Prunes, Lettuce, Onion Peas, Lemons, Tomato, Peaches Capsicum, Pumpkin, Radish Black currants, Cabbage, Leek

Thank you

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