

Vitamin deficiency and food supplements



AYURVEDA RESEARCH & CAREER ACADEMY (ARCA)

www.ayurvedacareer.com

Definition

- Vitamins are nutrients your body needs to function and fight off disease. Your body cannot produce vitamins itself, so you must get them through food you eat or in some cases supplements. There are 13 vitamins that are essential to your body working well. Knowledge of the different types and understanding the purpose of these vitamins are important for good health.

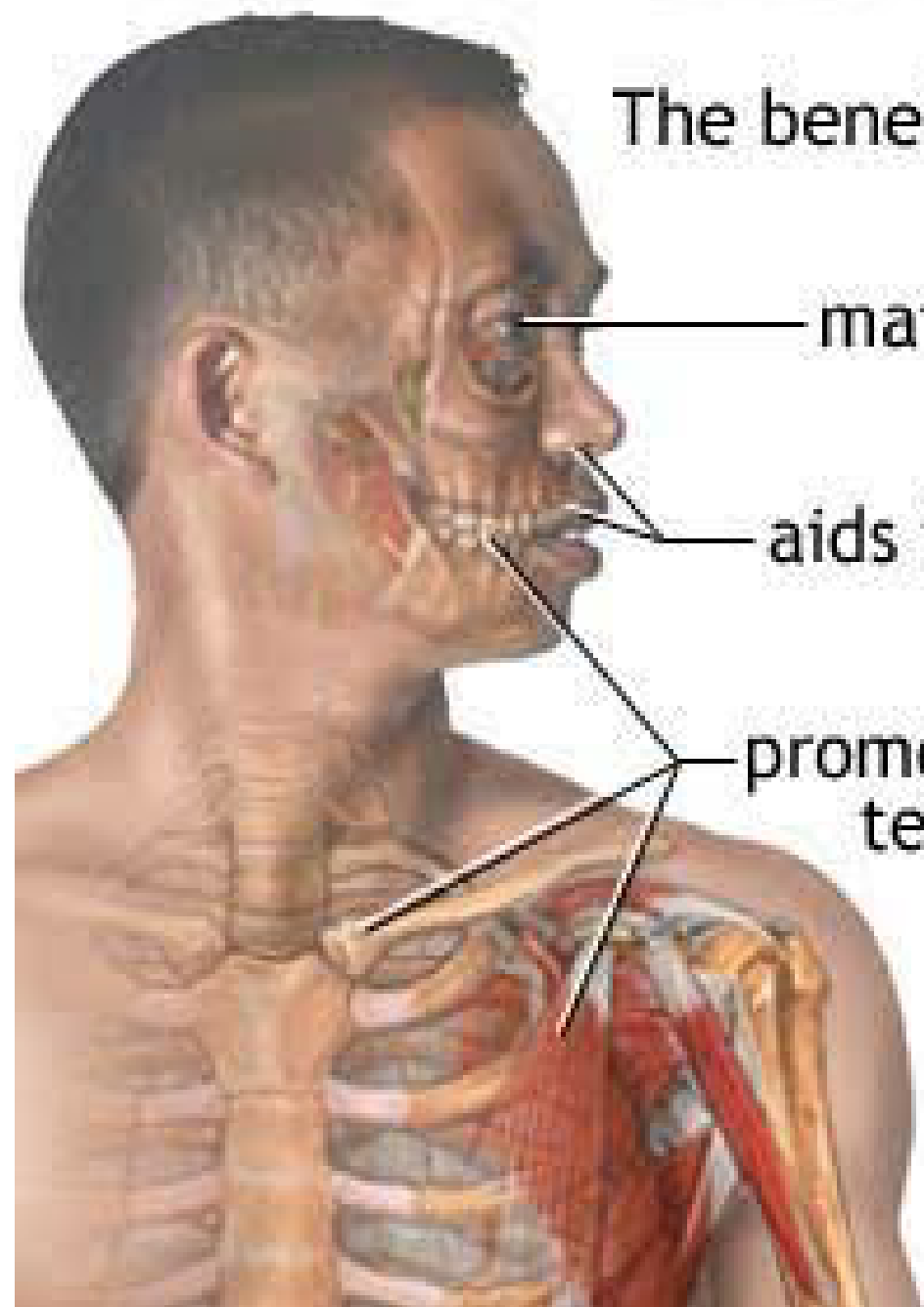
Vitamin Name	Chemical name	Solubility	Rec. Diet. Allowances	Deficiency diseases	Upper Intake level	Overdose disease
Vitamin A	Retinol, carotenoids	Fat	900µg	Night blindness keratomalacia	3000µg	Hyper vitaminosis A
Vitamin B1	Thiamine	Water	1.2 mg	Beriberi	N/D	
Vitamin B2	Riboflavin	Water	1.3 mg	Ariboflavinosis	N/D	
Vitamin B3	Niacin, niacinamide	Water	16 mg	Pellagra	35.0mg	Liver damage
Vitamin B5	Pantothenic acid	Water	5 mg	Paresthesia	N/D	
Vitamin B6	Pyridoxine, pyridoxamine	Water	1.3-1.7 mg	Anemia	100 mg	Nerve damage
Vitamin B7	Biotin	Water	30µg	Dermatitis, enteritis	N/D	
Vitamin B9	Folic acid, folinic acid	Water	400µg	Birth defects	1,000µg	Proprioception , nerve damage
Vitamin B12	Cyanocobalamin	Water	2.4µg	Megaloblastic anemia	N/D	
Vitamin C	Ascorbic acid	Water	90 mg	Scurvy	2,000 mg	
Vitamin D	Ergocalciferol, Cholecalciferol	Fat	5µg-10µg	Rickets, osteomalacia	50µg	Hypervitaminosis D
Vitamin E	Tocopherols, tocotrienols	Fat	15 mg	Hemolytic anemia	1,000 mg	Possible heart problems
Vitamin K	Phylloquinone, menaquinones	Fat	120µg	Bleeding diathesis	N/D	Increased coagulation

Vitamin	Name	Function	Sources
A	Retinol	Vision, protection of skin, teeth and mucosae	Liver, cod liver oil, dairy products, provitamin (β -carotin) in carrots, red pepper, tomatoes)
B1	Thiamin	Regulation of carbohydrate metabolism	Yeast, wheat bran, nuts, berries, pulses, sunflower seeds, fish
B2	Riboflavin	Metabolism, mucosae protection, respiration regulation	Yeast, gibs, milk and dairy products, fish, whole-grain products
B3	Niacin	Compartment of coenzymes (NAD, NADP), hydrogen & acid transfer in metabolism	Coffee, liver, meat, potatoes
B5	Pantothenic acid	Metabolism	Liver, wild rice, water melon, beans
B6	Pyridoxine	Amino group transfer in amino acid metabolism, protein anabolism	Yeast, crop seeds, bananas, soy beans, carrots, potatoes, walnuts, fish, green vegetables, meat, whole-grain products
B7/H	Biotin	Coenzyme	Veal liver, yeast, peanuts, almonds, egg yolk, bananas
B9	Folic acid	Protein and hemoglobin synthesis, mono-carbon transfer in metabolism	Yeast, gibs, red beet
B12	Cobalamin	Nervous system, protein and erythrocyte synthesis	Only animal products: liver, kidneys, beef, fish, egg yolk
C	Ascorbic acid	Collagen, bone and teeth production, support of iron resorption, antioxidant	Fruit and vegetables, particularly citrus fruits, dog rose, cassis
D	Calcitrol	Bone formation, calcium & phosphorus storage	Provitamin in cod liver oil, fish, milk, butter, mushrooms, vegetable oil, chicken, pork, sea fish. Synthesized through solar radiation in the skin
E	Tocopherol	Formation of red cells & tissues, antioxidant	Seed oil, nuts, butter, margarine, whole-grain crop, sunflower oil
K1	Phylloquinone	Hemostasis & blood coagulation	Green vegetables
K2	Menaquinone		

Mineral	Functions	Deficiency associations	Adult dose range	Food sources	Caution
Calcium	bone and tooth formation; heart and muscle function	osteoporosis, bone spurs, muscle cramps, rheumatism	200-1500 mg	barley, kale, unrefined grains; milk, green veggies	Prolonged excess may cause a mineral imbalance
Magnesium	energy processes, nerve function, enzyme activation	stress, senility, osteoporosis, insomnia	150-600 mg	avocados, almonds, whole grains, grapefruit	Doses over 400 mg can cause diarrhea in some people
Potassium	pH balance, nerve function	stress, atherosclerosis, high blood pressure	1800-5625* mg * a normal diet should contain sufficient potassium	potato peel, bananas, beans, almonds, whole grains	Do not take high supplemental doses (food sources are O.K.) when taking heart medicine without physician guidance
Sodium	pH balance, nerve function	excess is more common and is assoc with high blood pressure	limit daily intake to 1,500 mg	okra, celery, black mission figs	Very few people (athletes, diarrhea/vomiting) need to supplement
Phosphorus	energy production, bones/teeth, B Vit. activation	tooth/gum disorders, impotence, equilibrium	300-600 mg	barley, beans, fish, lentils, dark green veggies	Prolonged, large doses can cause calcium deficiency or mineral imbalance
Iron	Red Blood cell production	dizziness, depression, anemia	10-30 mg	blackberries, cherries, spinach	Do NOT take iron unless told to do so by your doctor. Iron excess is associated with health problems
Zinc	co-factor in numerous metabolic processes	prostate enlargement, immune deficiency, atherosclerosis	15-50 mg	wheat germ, wheat bran, pumpkin seed, avocado, sea food	Large doses (50mg, day) can cause a copper deficiency and other mineral imbalances
Copper	Red blood cell production; skeletal, heart & muscle function	osteoporosis, digestive function, nerve disorders	2-3 mg	green leafy veggies, almonds, beans, sea food	Higher doses can be toxic
Manganese	glandular function, bone and ligament health	diabetes, asthma, digestive disturbance	2-10 mg	nuts, seeds, avocados, grapefruit, apricots	High doses may create other mineral imbalances
Chromium	glucose metabolism; blood sugar regulation; heart function	atherosclerosis, diabetes, hypoglycemia, high cholesterol, overweight	200-500 mcg	whole grain cereals, molasses, meat, yeast	Nontoxic at therapeutic levels
Selenium	antioxidant, synergistic with vitamin E	cancer prevention; aging	100-200 mcg	bran, whole grains, tuna, broccoli, onion	Prolonged excess may be toxic

VITAMIN A

The benefits of vitamin A:



maintains health of specialized tissues such as the retina

aids in growth and health of skin and mucous membranes

promotes normal development of teeth, soft and skeletal tissue

Adult RDA: 1000 μg RE

Fat-soluble

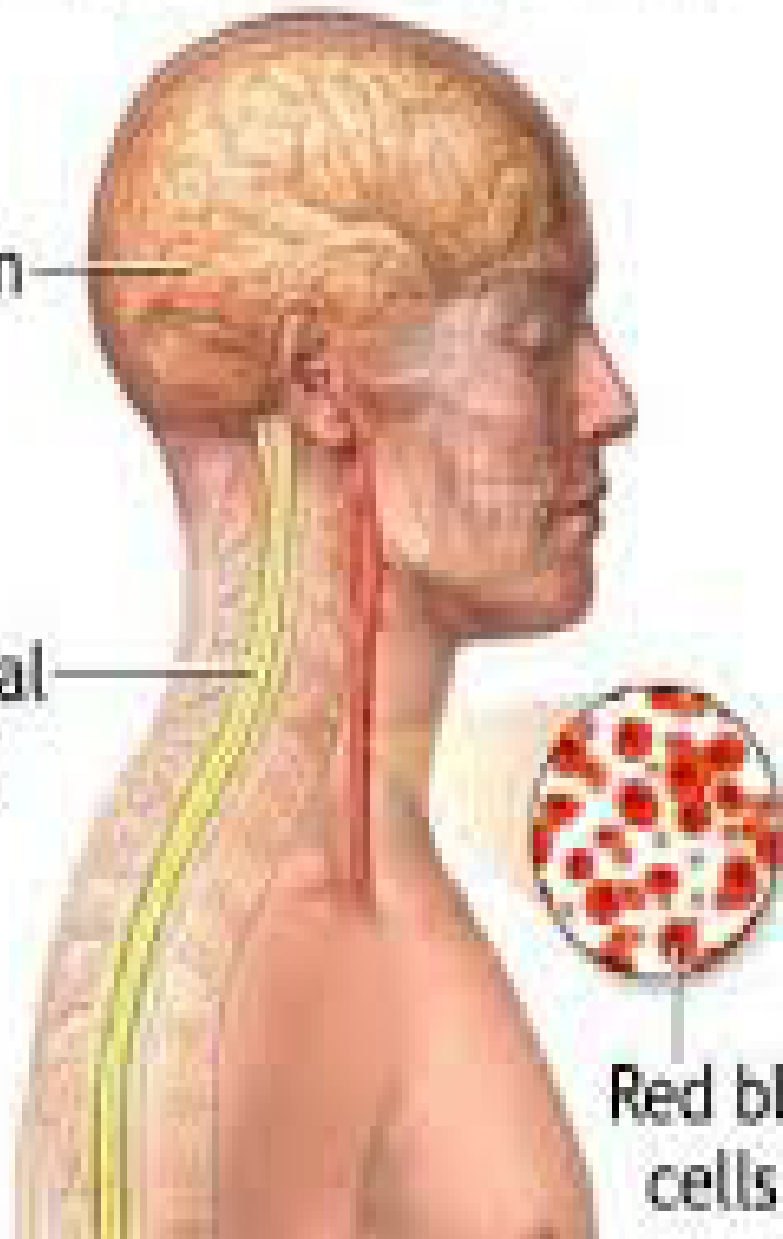
Vitamin B₁₂

Brain

Spinal
cord

Red blood
cells

Vitamin B₁₂ is important for metabolism, the formation of red blood cells, and the maintenance of the central nervous system, which includes the brain and spinal cord



Vitamin B6

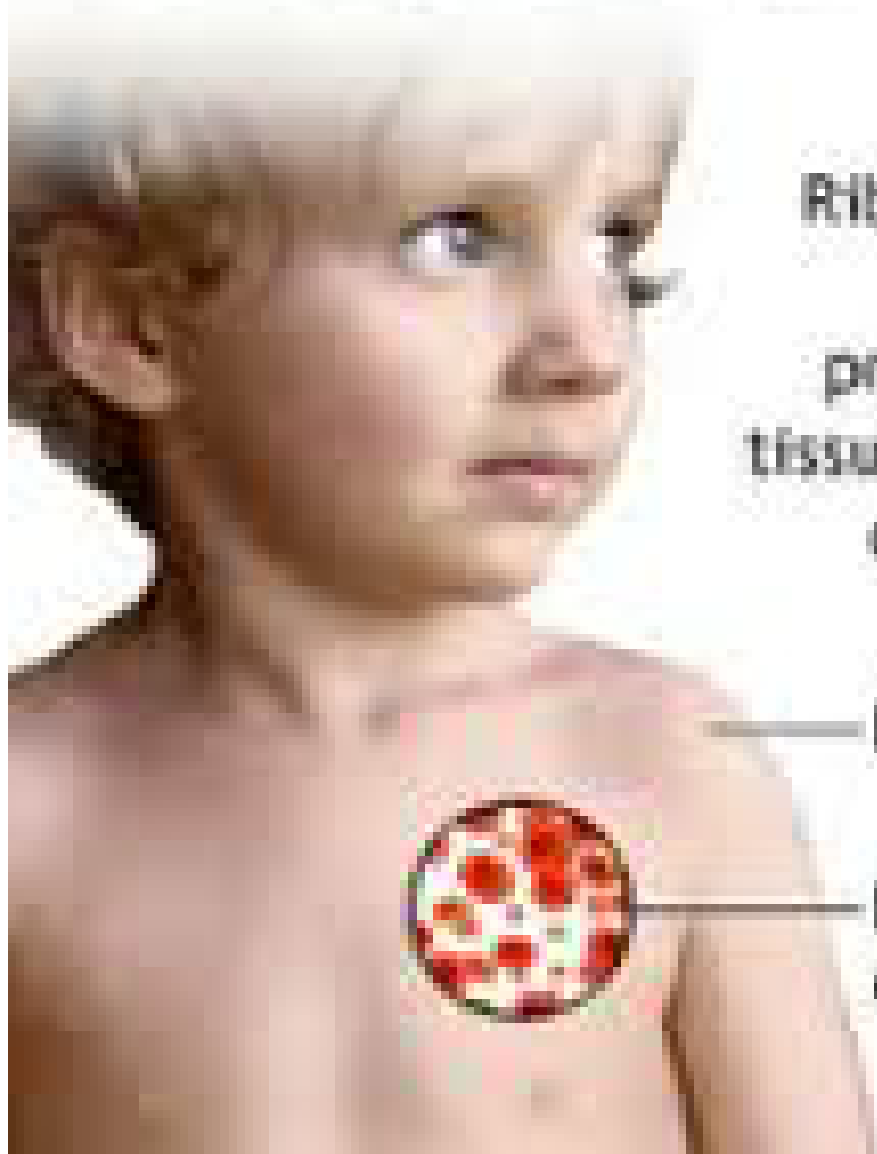


Vitamin B6 (pyridoxine) is important for maintaining healthy brain function, the formation of red blood cells, the breakdown of protein and the synthesis of antibodies in support of the immune system

Adult RDA: 2 mg

Water-soluble

Vitamin B₂



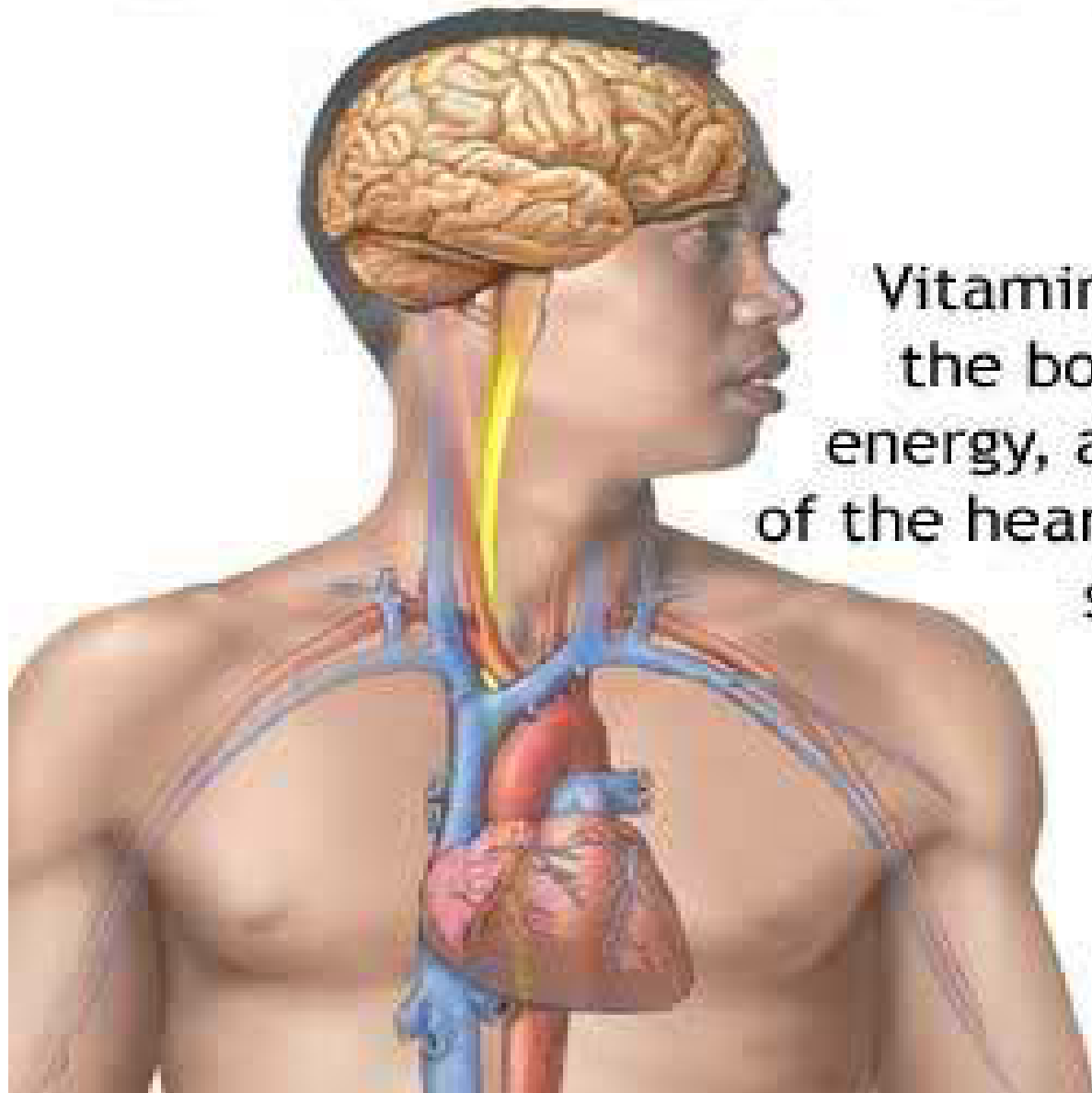
Riboflavin (vitamin B₂) works with other B vitamins to promote healthy growth and tissue repair, and helps release energy from carbohydrates

Healthy skin RDA: 1.7 mg

Water-soluble

Healthy red blood cell production

vitamin B1



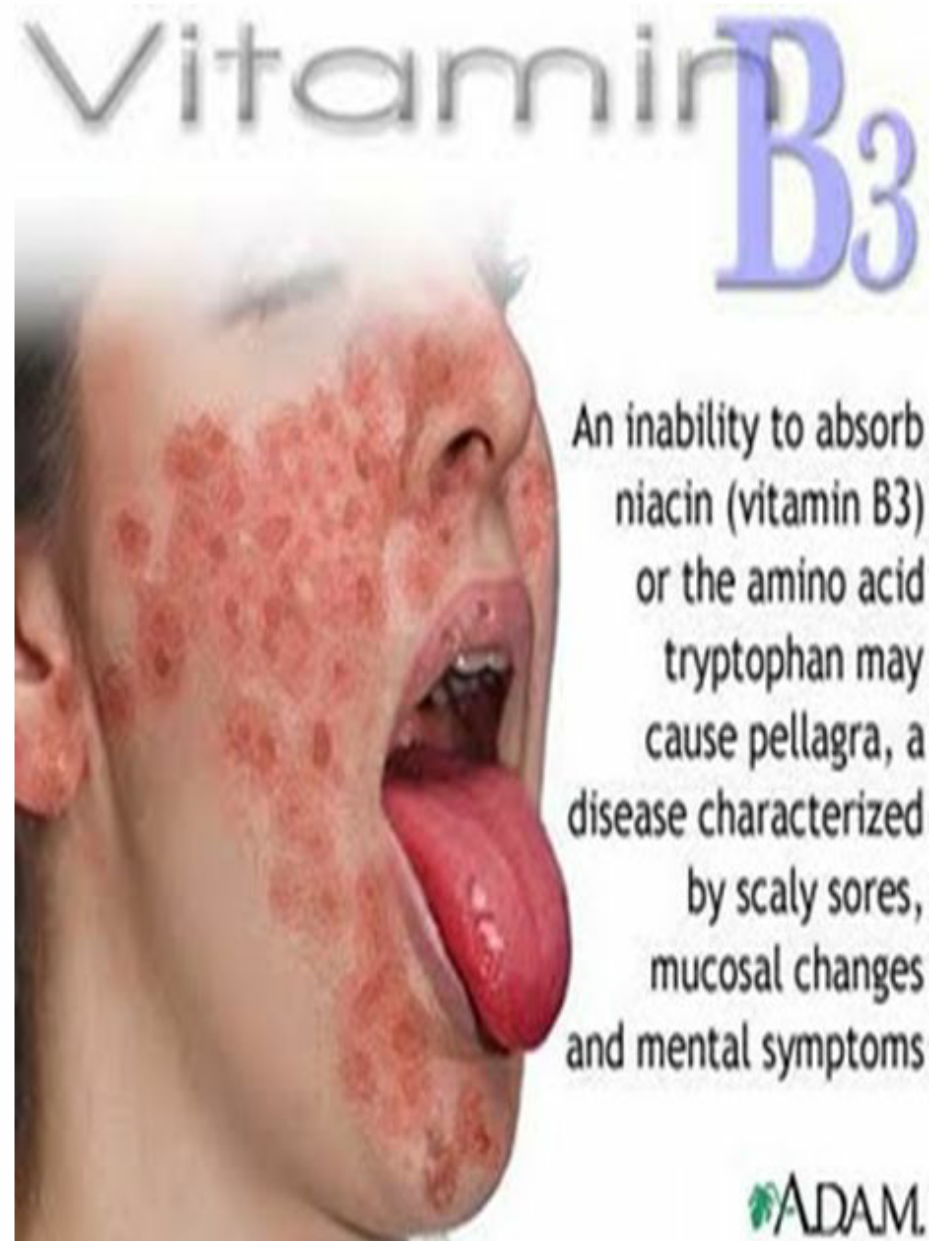
Vitamin B1 (Thiamine) helps the body convert food into energy, and aids the function of the heart and cardiovascular system and the brain and nervous system

RDA: 1.5 mg
Water-soluble

 ADAM.

Niacin (B3)

- **Deficiency Disease:**
 - **Pellagra** which is characterized by dermatitis, diarrhea, dementia, and death
- **Deficiency Causes:**
 - Weakness, poor appetite, and indigestion



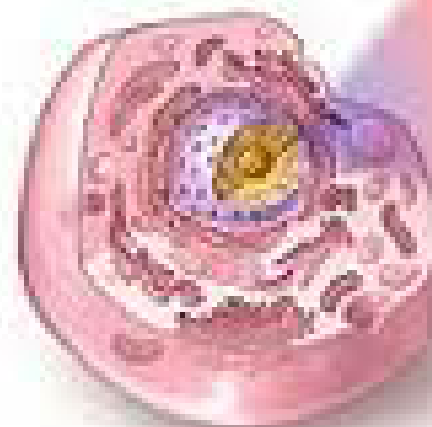
An inability to absorb niacin (vitamin B3) or the amino acid tryptophan may cause pellagra, a disease characterized by scaly sores, mucosal changes and mental symptoms

Vitamin B9 Folate

Folate aids in the production of red blood cells



Folate aids in the synthesis of DNA



Cell

Folate works with B12 and vitamin C to help the body digest and utilize proteins

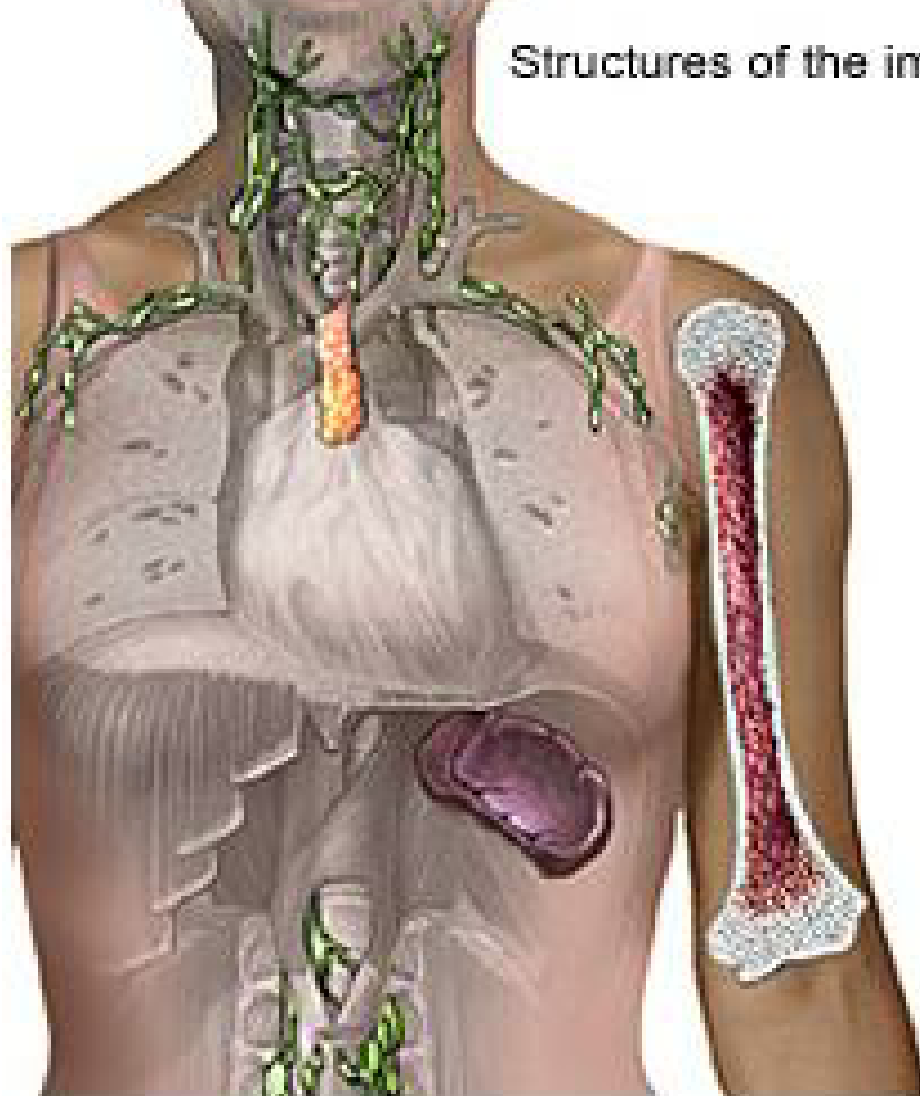
vitamin C



A deficiency of vitamin C may lead to a condition called scurvy, characterized by weakness, anemia, bruising, bleeding gums and loose teeth

vitamin C

Structures of the immune system



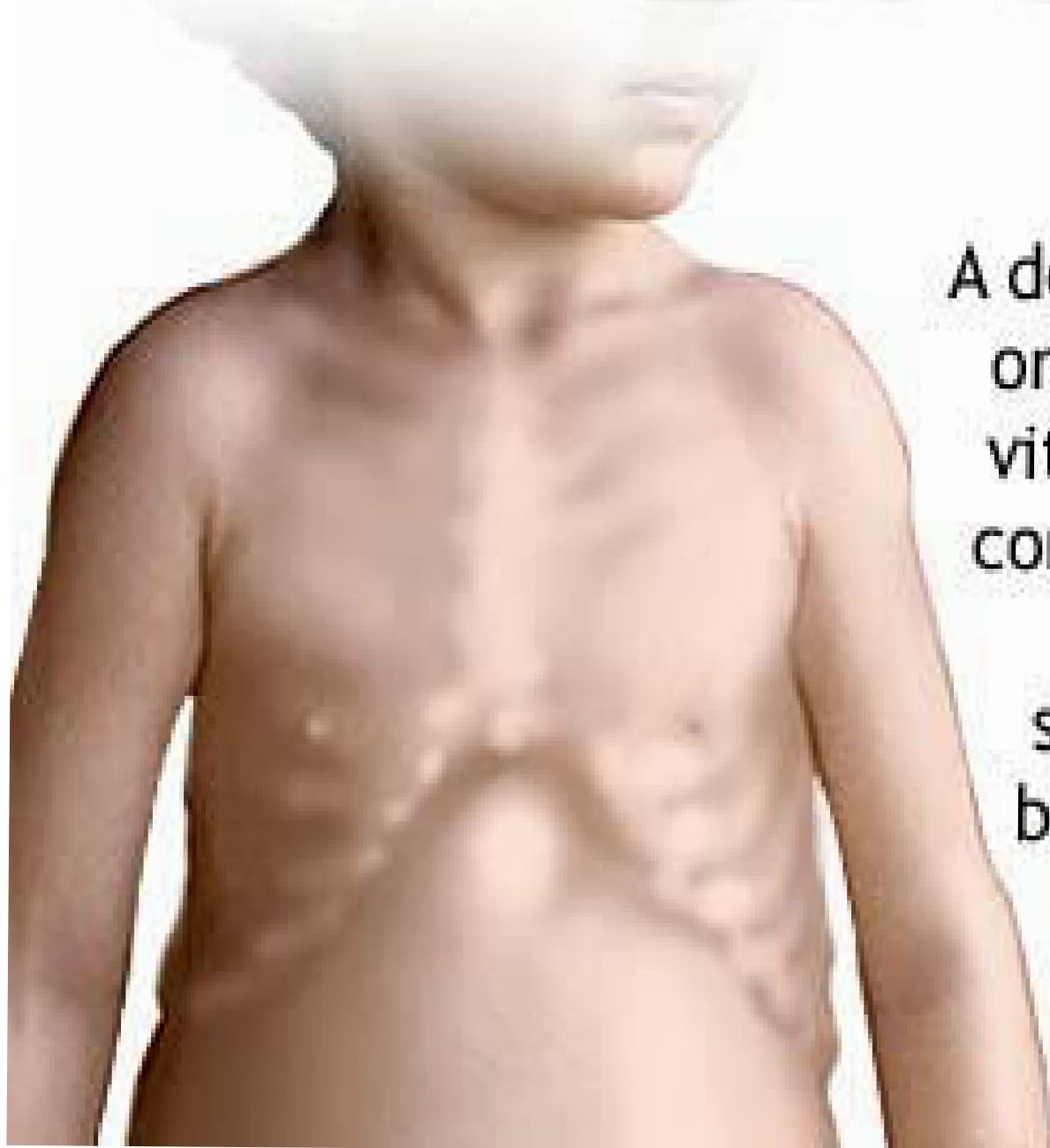
Vitamin C promotes a healthy immune system, helps wounds heal, maintains blood vessels and connective tissue and aids in the absorption of iron

RDA: 60 mg

Water-soluble

ADAM.

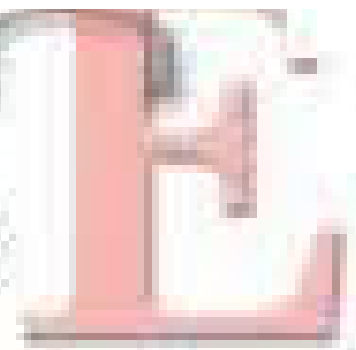
vitamin D



A deficiency of vitamin D or an inability to utilize vitamin D may lead to a condition called rickets, a weakening and softening of the bones brought on by extreme calcium loss

VITAMIN E

The benefits of vitamin E:



protects cell membranes and tissues from damage by oxidation



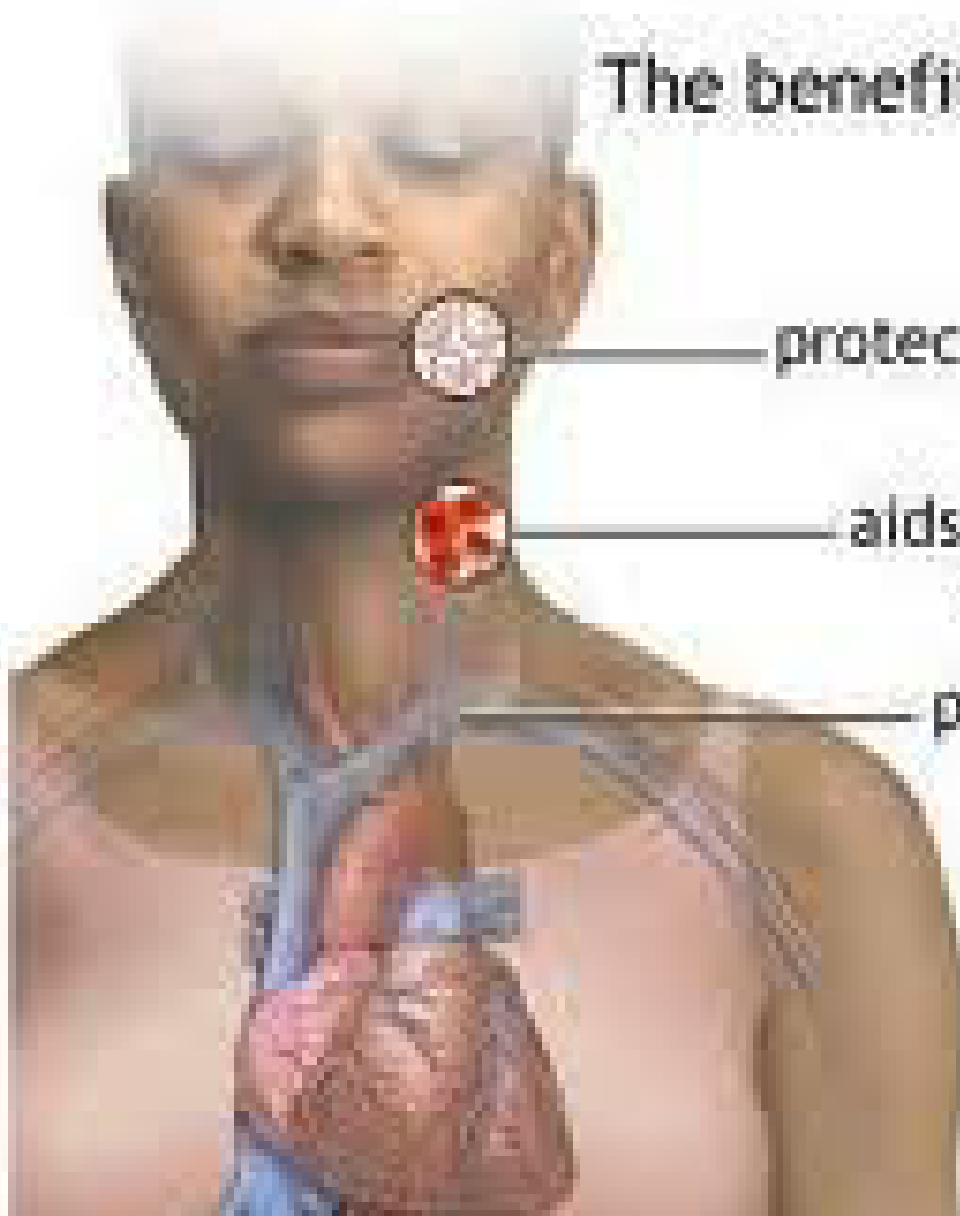
aids in the formation of red blood cells and the use of vitamin K



promotes function of a healthy circulatory system

Adult RDA: 10 mg α -TE

Fat-soluble



Vitamin D Daily Limits



1,000
IU/day



0 - 6
months

1,500
IU/day



6 - 12
months

2,500
IU/day

1 - 3
years

3,000
IU/day

4 - 8
years

4,000
IU/day

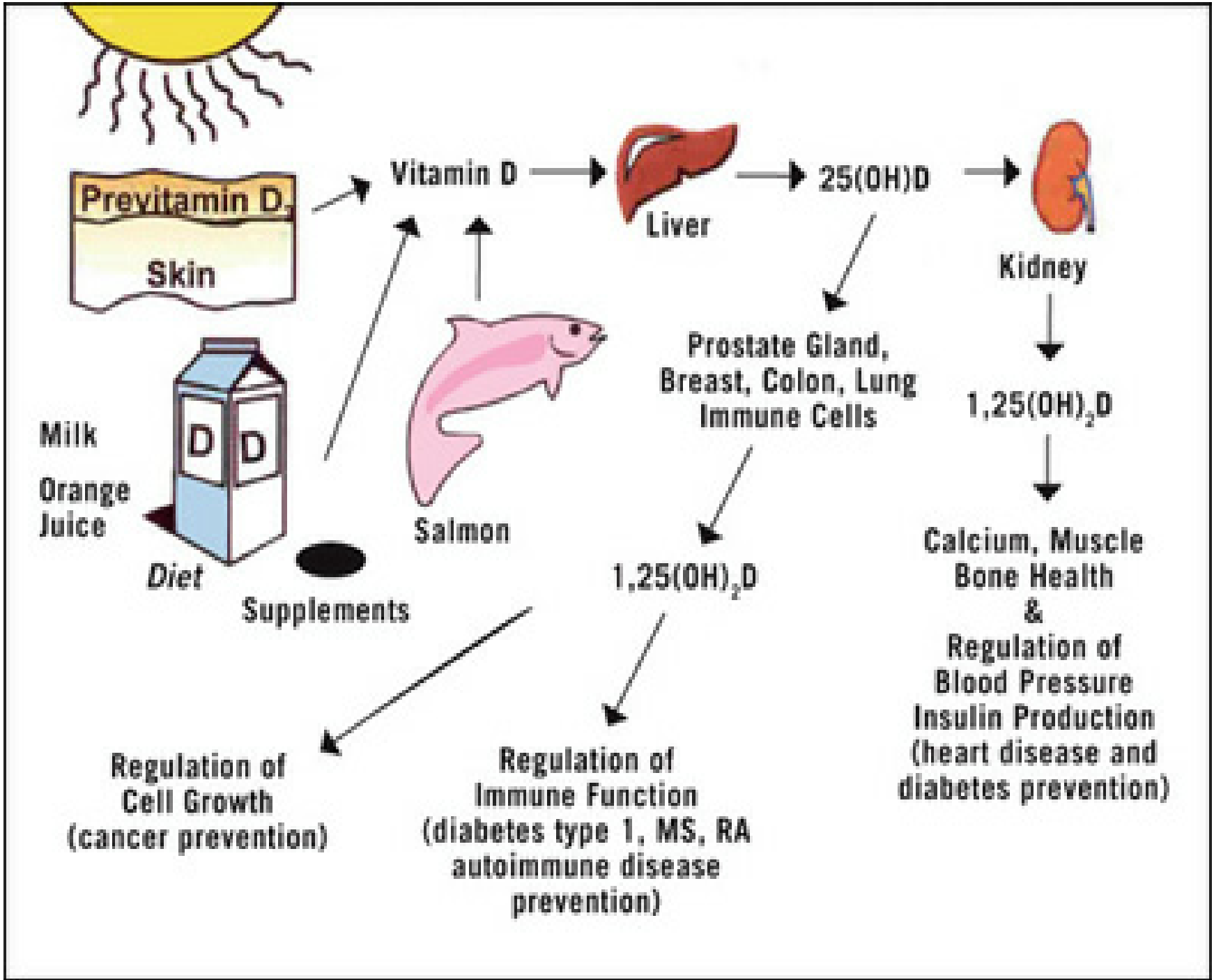


9 years
& older

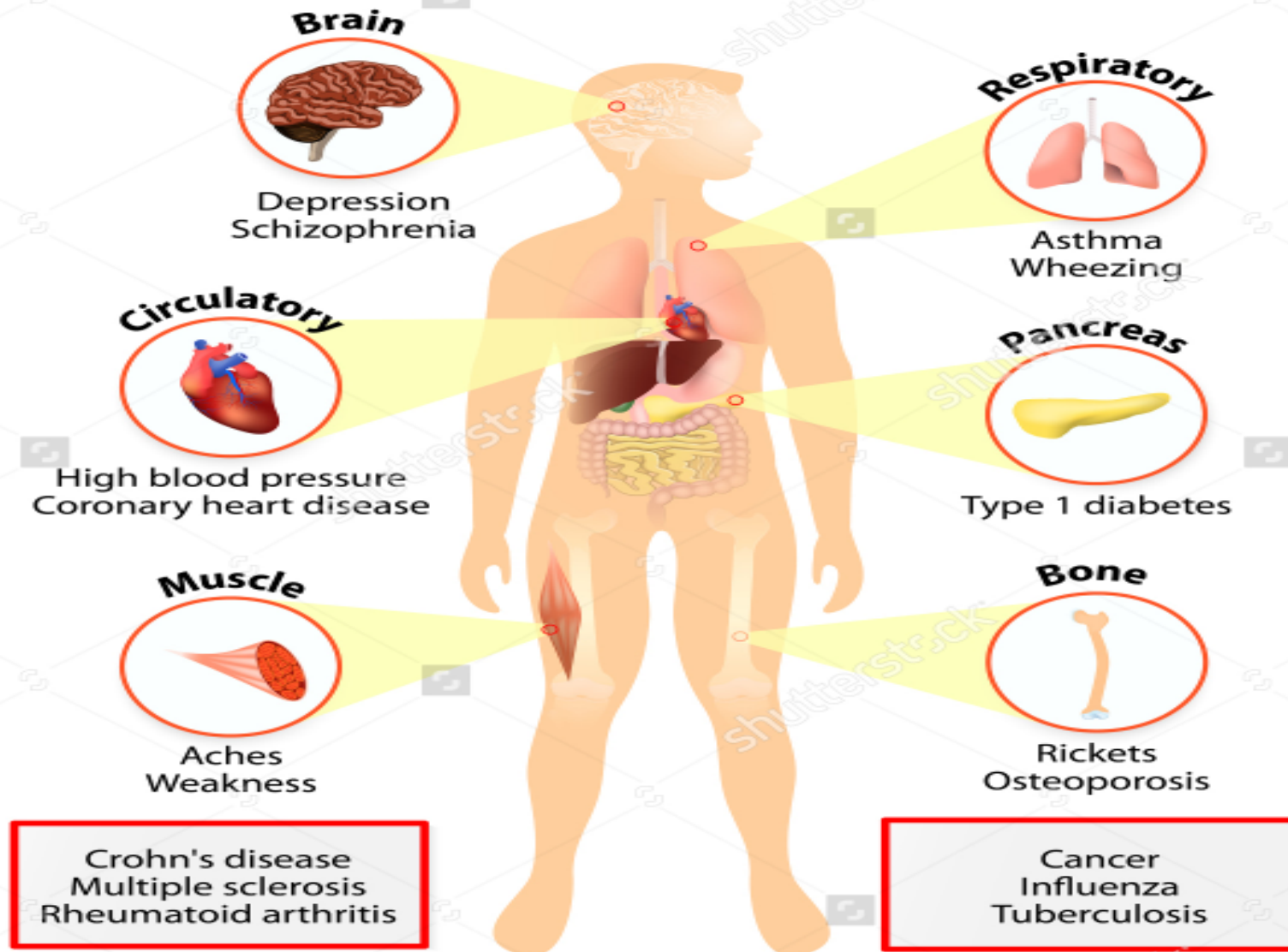
4,000
IU/day



pregnant &
lactating
women



VITAMIN D deficiency



Source

DAILY FISH SUCH AS SALMON, TUNA AND MACKEREL
Omega-3s,
vitamin D

MILK
calcium,
vitamin B2,
B5, B12

BROCCOLI
vitamin C,
vitamin K

SPINACH
iron, vitamin E

ORANGES
vitamin C,
folic acid

AVOCADOES
vitamin B2, B5, B6

EGGS
vitamin B,
iron, vitamin E

CARROTS
vitamin A

OYSTERS
zink



Vitamin A

Sources of vitamin A and beta-carotene:



Vitamin A comes from animal sources such as eggs, meat and dairy products

Beta-carotene, a precursor of vitamin A, comes from green, leafy vegetables and intensely colored fruits and vegetables





THE SUPERFOODS A TO Z

www.superherbalfoods.com



IS FOR APPLE

Apple - contains slow-acting sugars to keep you fuller longer



IS FOR BLUEBERRIES

Blueberries - rich in healthy compounds - said to help prevent obesity



IS FOR CARROTS

Carrots - natural sugars make them sweet. Chop, boil or steam them



IS FOR DAMSONS

Damsons - ripe in late summer, these lower blood cholesterol levels



IS FOR EGGPLANT

Eggplant or aubergines, they contain dietary fibre, helping digestion



IS FOR FIGS

Figs - high in cholesterol lowering pectin and a source of calcium



IS FOR GRAPES

Grapes - do wonders for high blood pressure and cholesterol



IS FOR HUBBARD SQUASH

Hubbard squash - great for healthy skin and good immunity



IS FOR ICEBERG LETTUCE

Iceberg lettuce - its high water content makes it low in energy density



IS FOR JALAPENO PEPPERS

Jalapeno peppers - nutritious and spicy, they give zing to recipes



IS FOR KIWI

Kiwi - virtually fat-free and even richer in vitamin C than oranges



IS FOR LEEK

Leek - rich in folate, antioxidants, source of vitamin C, B6 and K



IS FOR MELON

Melon - contains an enzyme believed to reduce stress



IS FOR NECTARINES

Nectarines - one large nectarine provides your whole day's vitamin C



IS FOR ONIONS

Onions - just two or three a week can help our health



IS FOR PEPPERS

Peppers - with three times the vitamin C of citrus fruits



IS FOR QUINCE

Quince - has anti-allergenic and anti-inflammatory properties



IS FOR RASPBERRIES

Raspberries - contain a good amount of potassium, iron and magnesium



IS FOR STRAWBERRIES

Strawberries - absolutely jam-packed with vitamin C



IS FOR TOMATOES

Tomatoes - the red colour comes from super healthy antioxidant lycopene



IS FOR UGLI FRUIT

Ugli fruit - zesty hybrid of grapefruit, orange and tangerine



IS FOR VINE LEAVES

Vine leaves - fantastic source of iron to boost your energy levels



IS FOR WATERCRESS

Watercress - high in B vitamins to improve mental function



IS FOR WATERMELON

X also Watermelon. Refreshing on a summer's day



IS FOR YELLOW PLUMS

Yellow plums - all types of plums are all packed with goodness



IS FOR ZUCCHINI

Zucchini or courgettes, they're 98% water and low in calories

We all know we need our five a day to stay healthy but most fruit and vegetables can also help us drop the pounds.

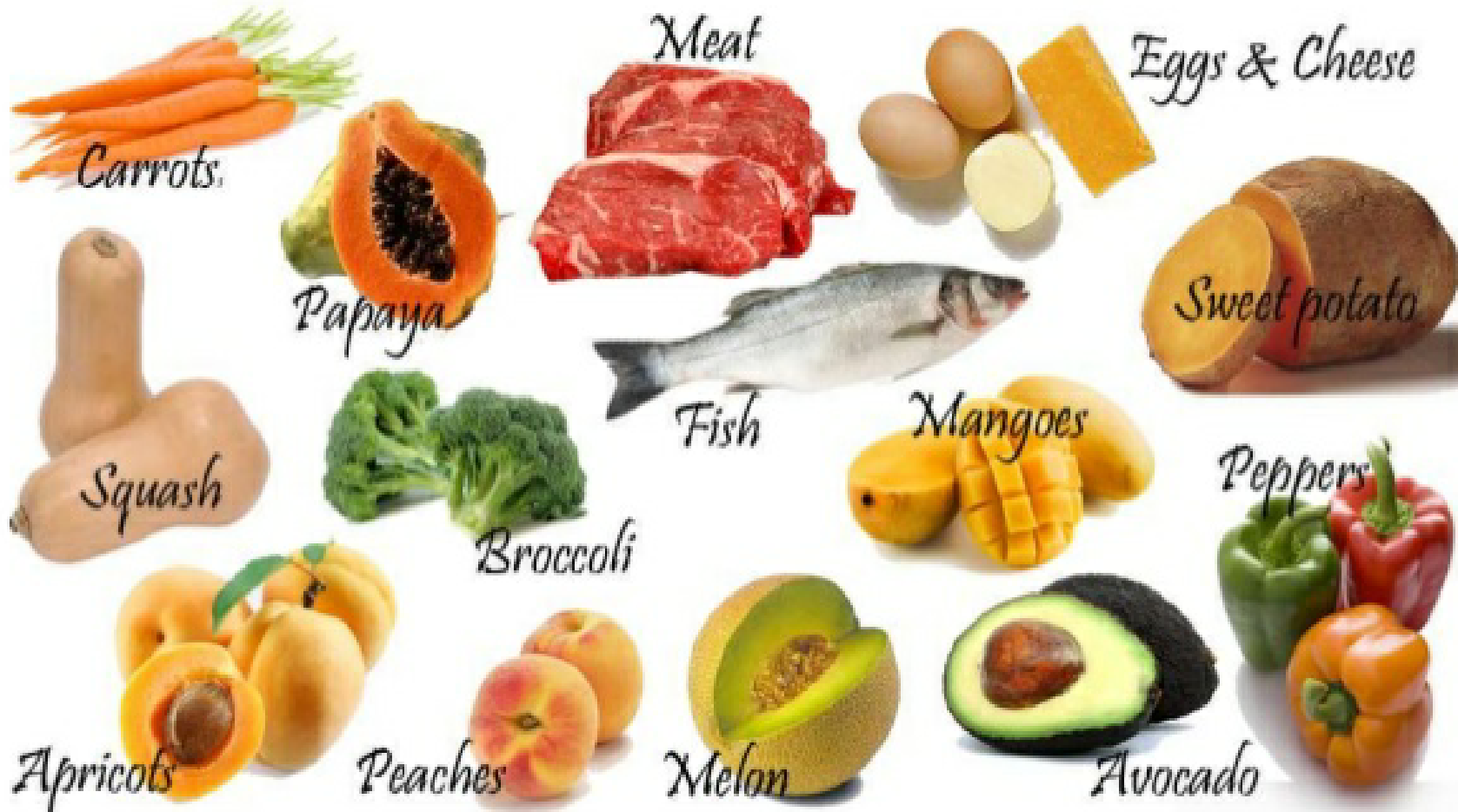
Eating foods like fruit and veg, which are low in energy density (i.e. they provide fewer calories per gram) has been shown not to just help us lose weight but also to keep it off long term.

And what's more, much of good old fruit and veg is what slimming experts call 'Superfree', which means you can eat as much of them as you fancy without having to weigh, count or measure them. So you will not only lose weight on their plan but not feel hungry as you do so.

For those trying to slim this is important as they're not only very low in calories but also very filling.

Take inspiration from this A-Z list of particularly nutritious and delicious 'Superfree' foods - and watch the pounds drop off without sacrificing on taste.

Sources of Vitamin A



Tomatoes



Fish



Cauliflower



VITAMIN K

VITAMIN RICH FOODS



Pumpkin



Broccoli



Spinach



Lettuce



Brussels Sprouts



Green Peas



Avocado

Vitamin B6

Food sources of vitamin B6 (pyridoxine) include beans, legumes, nuts, eggs, meats, fish breads and cereals



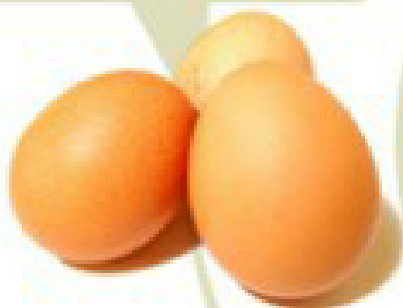
Fígado



Carne vermelha



Ovo de galinha



Legumes e cereais



ALIMENTOS RICOS EM
VITAMINA B1
TIAMINA

Leite



Vitamin B-2



Vitamin B9 Folate

Food sources of folate include beans and legumes, citrus fruits and juices, whole grains, dark green leafy vegetables, poultry, pork, shellfish and liver





Sunflower Seeds



Chicken Liver



Avocado

VITAMIN B5

VITAMIN RICH FOODS



Mushrooms

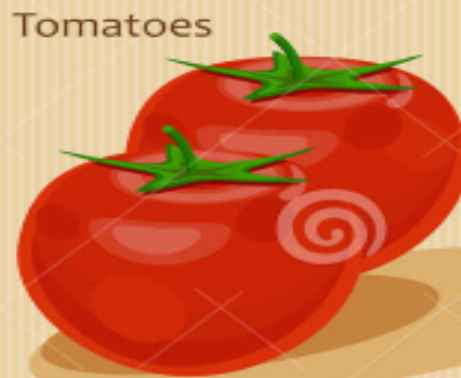
BENEFITS
treats hair loss
converts food into energy
supports nervous system health



Broccoli



Cauliflower



Tomatoes



Salmon



Vitamin B₁₂

Natural sources
of vitamin B₁₂:

Eggs, meat, poultry,
shellfish, milk and
milk products

B₁₂ is also added
to fortified grain
products, such as
cereals



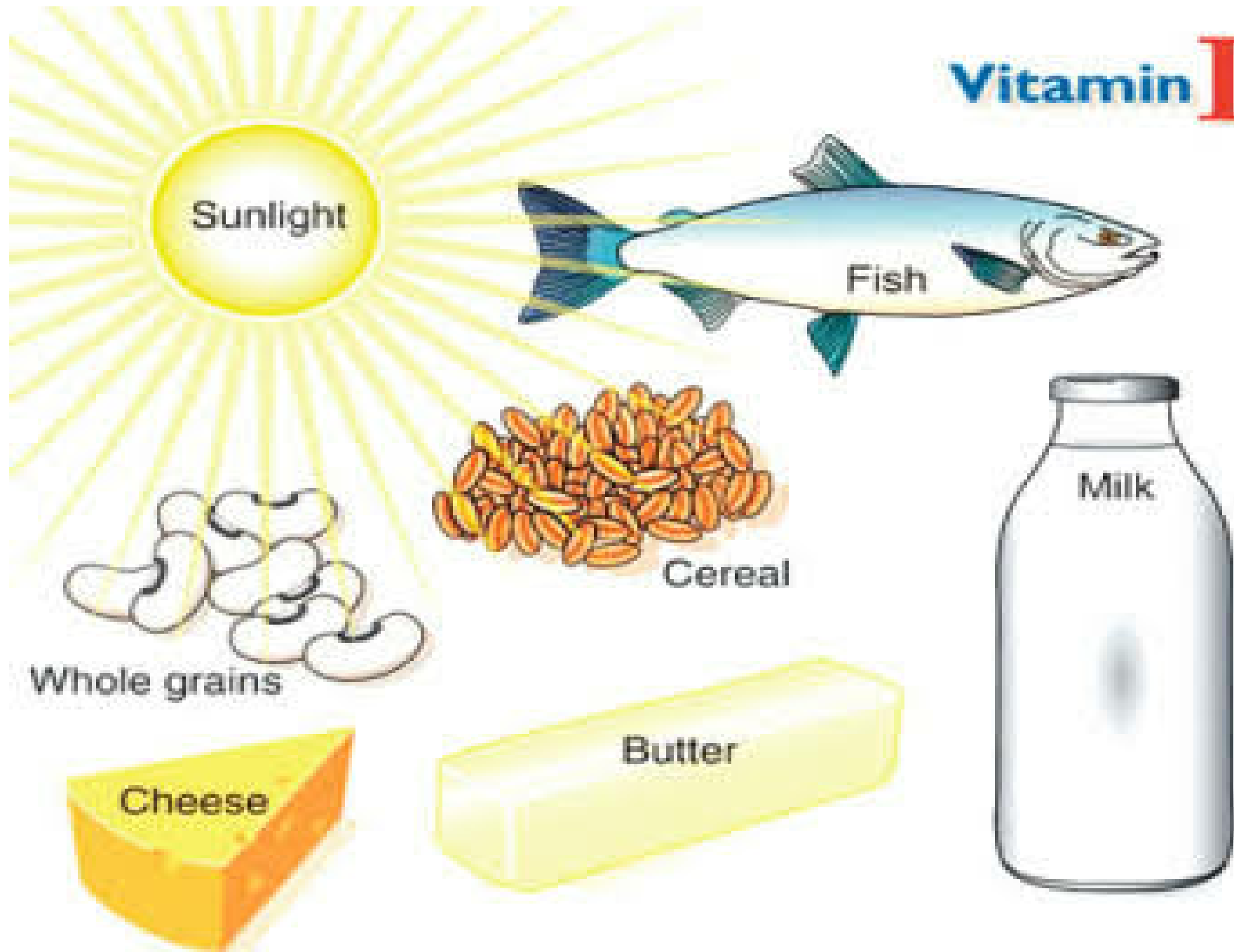
 ADAM.

The human body stores several years' worth of vitamin B₁₂, so nutritional deficiency of this vitamin is extremely rare. Although, people who follow a strict vegetarian diet and do not consume eggs or dairy products may require vitamin B₁₂ supplements.

Rich Sources of Vitamin C



Vitamin D





Zn

13 Zinc Rich Foods

Magnesium Rich Foods



Spearmint



Almonds



Dill



Pumpkin Seeds



Spinach



Brazil Nuts



Flax Seeds



Chives



Sunflower Seeds



Broccoli



Okra



Basil



Watermelon Seeds



Cacao



Pine Nuts



Sesame Seeds

Omega 3 fatty acids

Omega-3 fatty acids are most important, as they bring balance to our hormones, reduce inflammation, regulate our blood sugar, prevent blood clotting, keep our cholesterol and triglycerides in balance, relax our blood vessels, and make our cells healthy and resilient.



flaxseeds

navy beans



pecans



cold-water salmon



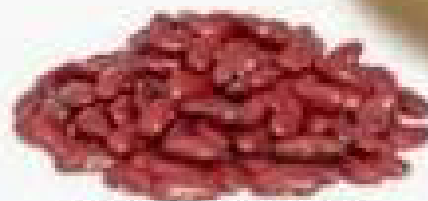
walnuts



leafy greens



cold-pressed olive oil



kidney beans



winter squash



Zn

13

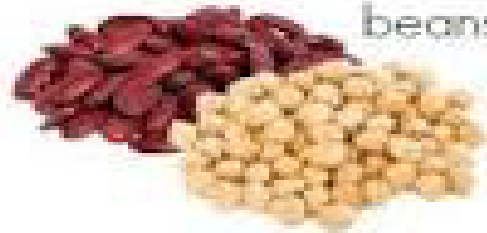
Zinc Rich
Foods

good sources of
plant based

IRON



chickpeas, kidney beans, butter
beans and other legumes



quinoa



oatmeal



pepitas, flaxseeds, chia
seeds and other seeds



dark chocolate and
cocoa powder



spinach and other
dark green leafy
vegetables



peanuts, almonds,
cashews and
other nuts



dates, raisins,
dried apricots
and other dried
fruits



Ca



High Potassium Foods



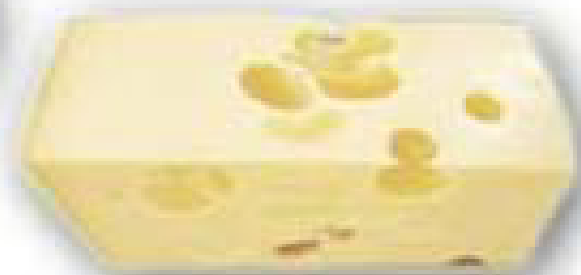
Foods High in Phosphorus

Meat



Fast Food

Cheese



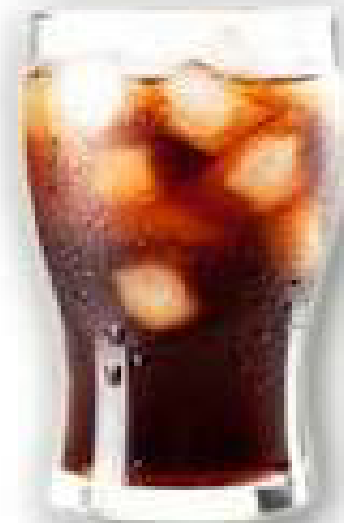
Seeds



Milk



Canned Fish



Cola



Cu

↓

Vitamins and Minerals to Stop Menopausal Fatigue

Vitamin A



Vitamin B complex



Zinc



Potassium



Vitamin C



Vitamin E



Iron



4 Vitamins and Minerals to Prevent Depression



4 Vitamins and Minerals to Prevent Brittle Nails

Zinc



Iron



Vitamin C



B-Group Vitamins



4 Vitamins That Can Combat Fatigue



Vitamin B₁₂



Vitamin C



Vitamin D



Vitamin E

6 Blood Building Foods To Fight Anemia

www.livelovefruit.com



Kale



Beets



Figs



Parsley



Stinging
Nettles



Spinach



LIVE LOVE FRUIT

Best Foods for Diabetes



Barley Grass



Kale Salad



Green Juice



Raw Zucchini with Tomato Sauce



Guscumole

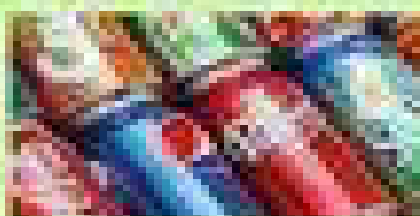


Avocado Sprouts Salad

Worst Foods for Diabetes



Pancakes and Syrup



Soda



French Fries



Bacon



Canned Fruit



Milk



Fast Food Hamburgers



Ketchup



Potato Chips

5 CANCER-FIGHTING SPICES



1. GARLIC



2. GINGER



3. CINNAMON



4. TURMERIC



5. CAYENNE PEPPER

FOODS FOR HEART HEALTH



Healing foods for **KIDNEYS**



apple



cabbage



onion



cherries



blueberries



garlic

egg-white



strawberries



Foods That Are Bad For Asthma



Foods That Are Good For Asthma

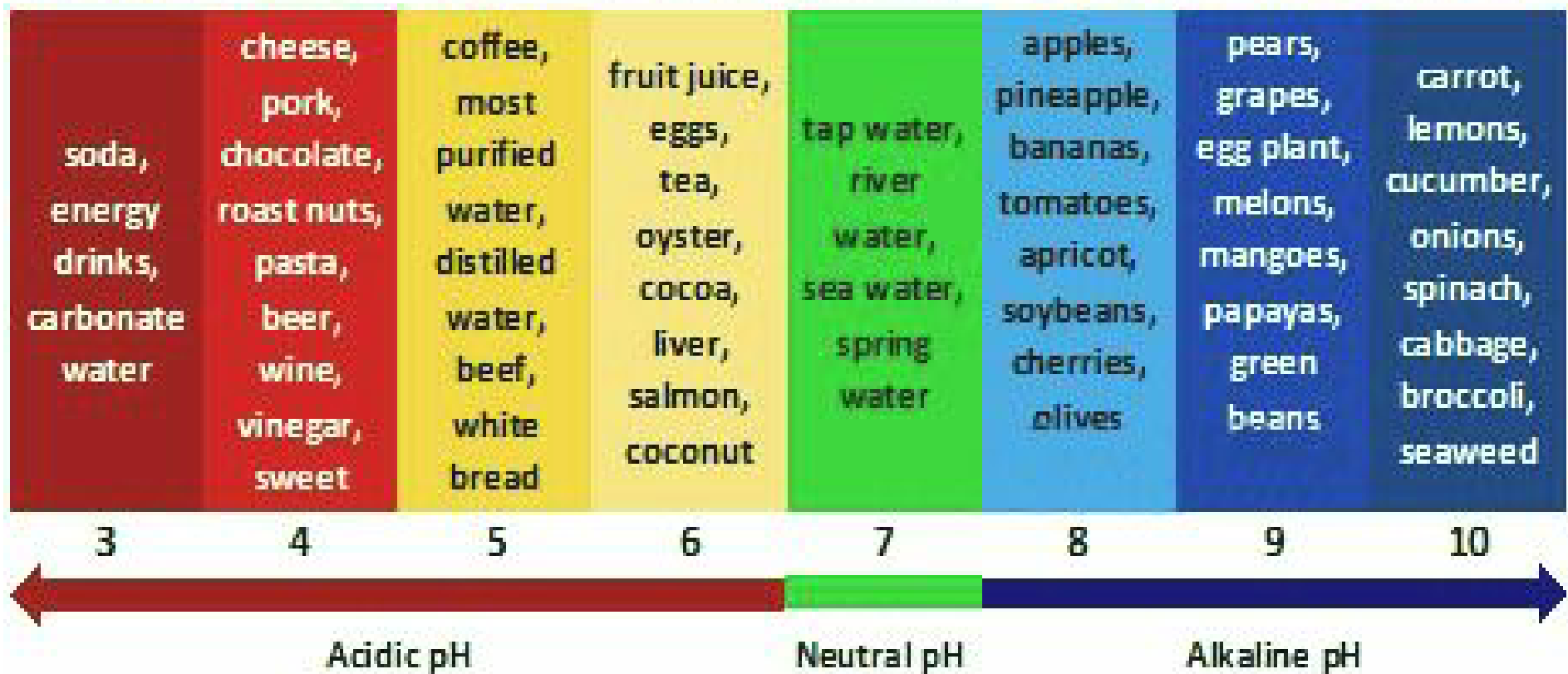


ALKALINE FORMING FOODS



ACID FORMING FOODS





Pic.5 pH In Foods and Drinks



THANK YOU