

Major Mineral Guide

MINERAL		FUNCTIONS	SOURCES
Ca	CALCIUM*	hard bones & teeth nutrient transit heart contractions regulated by several hormones & vitamin D most abundant	cheese yogurt leafy greens sardines firm tofu sesame seeds seaweed broccoli
P	PHOSPHORUS	balances with calcium part of DNA, ATP, & membrane phospholipids pH balance hard bones & teeth	<i>SAD diet = too much</i> carbonated beverages processed foods meat & seafood dairy
K	POTASSIUM*	electrolyte nutrient transport fluid & pH balance nerve conduction heart function stress depletes	avocado potato tomato banana acorn squash mango coconut water & milk
Mg	MAGNESIUM*	300+ chemical reactions muscle relaxation protein & fat metabolism heart contraction brain & nerve function	almonds Brazil nuts pine nuts seeds whole grains herbs spinach broccoli
Na	SODIUM	electrolyte fluid balance nutrient transport nerve function muscle contraction	<i>SAD diet = too much</i> salt processed foods fermented foods cheese seafood
Cl	CHLORIDE	electrolyte balances with sodium stomach acid production fluid balance immune function	salt processed foods fermented foods seafood & seaweed
S	SULFUR	enzyme function hair, skin, & nail health joint health protein structure energy metabolism liver function	eggs cruciferous vegetables garlic & onions nuts & seeds meat & seafood dairy







**common deficiency*

Trace Mineral Guide

MINERAL	FUNCTIONS	SOURCES
Fe	IRON* red blood cell formation oxygen delivery too much is inflammatory	liver meat fish oysters eggs beans lentils molasses
Zn	ZINC* stomach acid production fat metabolism protein synthesis immunity prostate health	oysters meat pumpkin seeds oats legumes tofu
Cu	COPPER enzyme cofactor estrogen metabolism neurotransmitter production adrenal health	beef beans & peas Brazil nuts sunflower seeds cashews rye
Cr	CHROMIUM blood sugar regulation insulin binding fat, protein, & carbohydrate metabolism	seafood liver whole grains cheese meat brewer's yeast
Se	SELENIUM antioxidant regeneration sexual function balances mercury from fish	Brazil nuts chard oats wheat germ seafood molasses
Mn	MANGANESE bone development enzyme cofactor pancreatic health macronutrient metabolism	hazelnuts peanuts whole grains raisins & prunes leafy greens
I	IODINE* thyroid hormone activation metabolism estrogen balance fetal development	iodized table salt kelp pulse kombu seafood
Mo	MOLYBDENUM liver function enzyme cofactor alcohol detoxification protein metabolism	lentils peas beans whole grains nuts soy yogurt & cheese

**common deficiency*

Vitamin Guide

	NAME	FUNCTIONS	FOOD SOURCES
A 	RETINOL PRECURSOR: BETA-CAROTENE	vision & eye health immune function cell growth & repair bone growth skin health antioxidant activity	liver fish cod liver oil eggs dairy leafy greens orange vegetables
Bs* 	1: THIAMIN 2: RIBOFLAVIN 3: NIACIN 5: PANTOTHENIC ACID 6: PYRIDOXINE 7: BIOTIN 9: FOLATE/FOLIC ACID 12: COBALAMIN	energy enzyme cofactors brain & nerve function mental health macronutrient metabolism immunity	nutritional yeast whole grains beans lentils meat fish eggs dairy
C 	ASCORBIC ACID	immune function wound healing collagen production vit E regeneration iron absorption antioxidant activity	pineapple papaya citrus kiwi berries tomatoes broccoli bell peppers guava
D* 	CHOLECALCIFEROL (D3)	hard bones & teeth mineral balance muscle contractions immune function heart health cell growth	SUN EXPOSURE liver fish cod liver oil eggs fortified dairy pork mushrooms
E 	D-ALPHA-TOCOPHEROL (MOST ACTIVE OF 8 FORMS)	immune function cardiovascular health skin health cell membrane stability antioxidant activity	nuts seeds extra-virgin olive oil avocado pumpkin spinach
K 	PHYLLOQUINONE (K1) MENAQUINONE (K2)	hard bones & teeth normal blood clotting blood sugar balance vit D regulation immunity	cruciferous & green vegetables kiwi eggs herbs fermented foods gut microbes

*common deficiency



fat soluble



water soluble



antioxidant



hormone-like

Phytonutrient Guide

	SOURCE/TYPE	CONSUME	NOTES	
CRUCIFERS <i>broccoli, cabbage, kale, etc</i>	fresh as possible	raw > light steam or sauté	time after harvest degrades nutrients	
BANANAS	personal preference	green = more prebiotics ripe = more sugars	digestibility/glycemic impact (not nutrients) change with ripening	
CITRUS	large, bright; eat pulp & membranes	fresh or juice "from concentrate"	membranes, pulp, concentrate juice high in nutrients	
PEAS & EDAMAME	fresh in pod	fresh>frozen>canned	heat/canning decreases nutrients	
LETTUCE & GREENS	dark, loose leaves; fresh as possible	fresh, torn apart	tearing triggers phytonutrient release	
STONE FRUITS <i>peach, nectarine, plum, etc</i>	red>white>yellow flesh	fresh or dried	dried with sulfur have most nutrients	
GRAPES	small, dark	fresh, juice, or dried	dried with sulfur (golden grapes) have most nutrients	
APPLES	sour green>uniformly red>patchy red	fresh, cloudy juice, or cooked	skin high in nutrients	
ONIONS	shallots or pungent varieties	bake, sauté, roast, or fry	heat increases quercetin content	
CARROTS	eat skin (if organic); pair with fat	roasted whole	fat improves carotenoid absorption; roasting whole retains nutrients	
BEETS & SWEET POTATOES	eat skin (if organic); pair with fat	bake, sauté, roast, or fry	skin high in nutrients; fat improves carotenoid absorption	
POTATOES	pair with fat/protein	cooked whole, then cooled	fat/protein, cooling lowers glycemic impact	
TOMATOES	eat skin & seeds; smaller (cherry>roma>steak)	cooked or processed (sauce or paste)	heat deactivates lectins & increases lycopene	
SPINACH	fresh as possible	lightly steamed/sautéed	wilting denatures oxalates, improves iron availability	
BERRIES	frozen, wild, dark	heated>frozen>fresh; thaw in microwave	nutrients locked in when harvested ripe & flash-frozen	
GARLIC	fresh or freeze-dried	mince/crush & let rest for 10 min before heating	pressing & resting enzymatically activates allicin	
CORN	darker varieties (blue>yellow>white)	canned > fresh/frozen; steam or roast (vs boiling)	canning improves nutrients; boiling pulls nutrients out	
GRAINS	whole, processed	soaked/sprouted/fermented	soaking/sprouting improves digestibility & increases nutrients	
BEANS & LENTILS	processed	canned>pressure-cooked>simmered>raw	canning/soaking improves digestibility & increases nutrients	

best FRESH:
heat/processing decreases nutrients



best COOKED:
heat increases nutrients



best with SPECIAL PREP:
certain processing increases nutrients



high in pesticides =
prioritize organic

