

Most Commonly Observed Clinical Signs and Symptoms
of Nutritional Deficiencies

Area Examined	Clinical Observation: Objective and Subjective	Commonly Associated Nutrients	Other Causes
Mouth, Lips, Mucous membranes			
Lips	Angular stomatitis	Riboflavin, Niacin, B6, Folate, Vit B-12	Poor fitting dentures, herpes, syphilis, Plummer-Vinson Syndrome
	Cheilosis, vertical fissuring	Riboflavin, Niacin	AIDS, Environmental exposure
	Dryness	Water	Medications
	Pallor	Iron	
	Undifferentiated mucocutaneous border	Riboflavin	
Gums	Red, swollen, inter-dental gingival hypertrophy	Vit C, Folate, B-12	Medications-Dilantin, poor hygiene, lymphoma, Vit A toxicity
	Inflammation, generalized stomatitis	Vit C, Folate, B-12	
Teeth	Caries	Protein-Energy Malnutrition (PEM), Fluoride, Phosphorous	Oral hygiene, dry mouth
	Pitting, mottling		Excess fluoride
Tongue - Color	Beefy Red	Niacin, Folate, Riboflavin, Vit B12	Diabetes
	Magenta, purplish red	Riboflavin, Biotin	Crohn's Disease, Infection
	Scarlet	Niacin, Folate, possibly Vit B12, B complex	
	Pale	Iron	
Taste Acuity	Dysgeusia	Zinc	Trauma, Syphilis, Dry mouth
	Hypogeusia	Zinc, Vit A	Poorly fitting dentures
Tongue Texture	Aphous-like ulcers	Folate, Vit B12	
	Fissuring, Edema	Niacin	
	Geographic Tongue, pallor, patchy atrophy	Biotin	Drug-induced
	Glossitis	Niacin, Riboflavin, B12, Folate, B-6, Iron	
	Leukoplakia	Vit A, Niacin, Folate, Vit B12	Cancer, Pre-cancer, HIV

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Tongue Texture	Lobulated with filiform papillary atrophy	Folate	
	Papillary filiform atrophy	Niacin, Iron, Folate, Vit B-12, B-complex	Cancer therapy, Dehydration, Diabetes, Influenza, Polymeds
	Papillary hypertrophy	General under-nutrition and deficiencies	
	Pebbly, granular, cobblestone dorsum	Riboflavin, possible Biotin	
Eye	Angular blepharitis	Riboflavin, Niacin, B-6	
	Bitot's spots	Vit A	
	Brow, Outer 1 /3 missing	Iodine	Hypothyroidism
	Conjunctival Hemorrhage	Vitamin C	Scurvy, Alcoholism
	Corneal Arcus	Dyslipidemia, Elevated Cholesterol	Aging-may have normal lipids
	Kayser- Fleischer ring	Copper accumulation	Hereditary-Altered metabolism; Wilson's Disease
	Keratomalacia	Vit A	Alcoholism, Eye disease or injury
	Night blindness	Vit A, Zinc	
	Ophthalmoplegia	Thiamin, Phosphorous	Brain lesion
	Pallor of everted lower lids	Iron, Folic Acid, B-12	Non-nutritional anemias
	Photophobia, burning, itching	Riboflavin	Medications, Eye Surgery
	Pterygium		Non-nutritional
	Stare	Thiamin	Alcoholism
	Xerosis	Vit A	Aging, Allergies
Skin	Acanthosis nigricans	Caloric overnutrition	Insulin resistance, PCOS
	Casal's Necklace	Niacin	
	Cellophane-like	PEM, Essential fatty acids	Aging
	Ecchymosis, subcutaneous w/ minor trauma	Vit K, Vit C, PEM	Medications-Coumadin
	Eczematous dermatitis-Scrotum, Vulva	Riboflavin	
	Decubitus ulcers, Delayed wound healing	Vit C, Zinc, Protein, Calories, possibly, Linoleic Acid	Malignancy, Steroid use, Immobility, Diabetes, AIDS

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Skin, cont.	Dermatitis	Essential Fatty acids, Zinc, Niacin, Riboflavin	Addison's disease, Burns, Hyper-sensitivity reactions, Connective tissue disease
	Dry, Scaling	Vit A, Essential Fatty Acids, Zinc	Hypothyroidism, Psoriasis, Environmental factors, Hygiene
	Edema, pitting	PEM	Liver disease, CHF, Alcoholism
	Flaky-paint dermatosis	Protein	
	Follicular hyperkeratosis	Vit A, Essential Fatty Acids	
	Hyperpigmentation	Protein-Energy, Folate, Vit B12	
	Nasolabial Seborrhea, Dyssebacea	Riboflavin, Niacin, Vit B-6, Essential Fatty Acids	
	Pallor	Iron, Vit B-12, Folate	
	Pallor-lemon yellow tint	Vit B-12	
	Pellagrous dermatitis	Niacin, Tryptophan	
	Petechiae - perifollicular	Vit C, Vit K, possibly Vit A or Linoleic acid	Hematologic disorder, Trauma, Liver, Cushing's disease, Anticoagulant disorder
	Xanthoma, Xanthelasma (eyelids)	Fats, Elevated Cholesterol	Inherited dyslipidemia, Type IV
	Fingernails	Koilonychia (Spoon-shaped Nails)	Iron
Pale		Iron, Folate, Vit B-12	Non-nutritional anemias
Splinter-type hemorrhages under nails		Vit C	
White-spotting		Zinc, possibly Selenium	
Hair	Corkscrew hair	Copper, Vit C	
	Dull, thin, sparse	Protein, Iron, Zinc, Essential Fatty Acids	Chemicals, Chemotherapy, Hypothyroidism, Hereditary
	Easily/painlessly pluckable	Protein, PEM	
	Flag sign	PEM, Copper	Chemical treatment
	Swan neck hairs	Vit C	

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Musculoskeletal	Bone pain/tenderness	Vit C, Vit D	
	Epiphysial enlargement	Vit C (painful); Vit D (painless)	
	Fat wasting – temporal, hand, scapular	Protein-energy	
	Osteomalacia	Vit D, Ca	
	Osteoporosis	Vit D, Ca, Phosphorous, Mg, Vit K	Inactivity
	Joint pain	Vit C	
	Pain (bilateral) calf and thigh muscles	Thiamin	
	Motor weakness lower extremities	Thiamin, Vit E, Vit D	
	Muscle tenderness	Thiamin	Alcoholism, Loop diuretics
	Muscle-wasting	Protein, Energy, Ca, Vit C, Phosphorous, Thiamin	Inactivity
	Parotid gland enlargement	Protein	Cyst, Tumor, Hyperthyroidism, Habitual purging
	Rickets	Vit D, Ca	
Neurologic	Apathy	Protein, Thiamin, General malnutrition	Alcoholism
	Confabulation	Thiamin	Alcoholism
	Dementia	Niacin, Vit B12	Head trauma, Brain disease or Tumor, Cardiac arrest, Stroke
	Disorientation, irritability	B-complex, Niacin, Vit B-12, Vit C	Stroke, Depression
	Depression	Thiamin, Vit B-12, Potassium, Essential Fatty Acids	Losses
	Hyporeflexia	Thiamin, Vit B-12, Potassium	
	Hyperactive reflexes	Ca	Hypothyroidism, Uremia, Sarcoidosis, Malignancy
	Peripheral neuropathy	Thiamin, B-6, B-12	Diabetes, Alcoholism
General	Fatigue	Vit B-1, B-2, B-3, B-5, B-6, Folate, B-12, Mg, CoQ10	

Developed with several references including McLaren, McDonald and Medscape and WebMD sources. Nutrition-focused labs will provide objective information for targeted treatment of signs and symptoms.