

## Substrate Deficiencies

Symptoms	Vitamins													Trace Elements				
	A	D	E	K	B1	B2	B3	B5	B6	B7	B9	B12	C	Fe	Zn	Cu	Se	Ca
	Retinol E50 0.75 mg 2500	Chole- calcif- ferole E55 20 µg 800	Toco- pherole E56 10 mg	Phyllo- chinone E56 65-80µg	Thiamin E51 1.2 mg	Ribo- flavine E63 1.7 mg	Niacine E52 15-20mg	Pantho- tenat E53 6 mg	Pyri- doxine E53 1.7 mg	Biotine E53 30-35µg	Folate E53 500 µg	Cyano- cobala- mine E53 3 µg	Ascorbic Acid E54 70 mg	E61.1 10-12 mg	E60 7-10 mg	E61.0 1.5-3 mg	E59 30-70µg	E58
ICD-10 (Chapter IV) RDA (metric) RDA (IU)																		
Beri-Beri																		
Pellagra																		
Scurvy																		
<b>General Symptoms</b>																		
Fatigue																		
Sleeplessness																		
General weakness																		
Sweating																		
Immune impairment																		
Growth impairment																		
Male infertility																		
Erectile Dysfunction																		
Anemia																		
Non resolving Iron-Deficiency																		
Hyperhomocysteinaemia																		
Hypoglycemic Synkope																		
Macrocytosis																		
Osteomalacia/Osteoporosis																		
<b>Dermatology</b>																		
Acne																		
Hyper-/Parakeratosis																		
Hyperpigmentations																		
Erythema																		
Eczema																		
Suffusions																		
Ekchymosis																		
Brittle nails																		
Dry hair																		
Dry eyes																		
Alopecia/Effluvium																		
Impaired wound healing																		
Mouth/Tongue burning																		
Mouth lesions (Perlèches, Cheilosis)																		
Inflamed tongue																		
Periodontal changes																		
Tooth decay																		
<b>Neuro-psychological symptoms</b>																		
Memory impairment																		
Personality changes																		
Dizziness																		
Moodiness																		
Nervousness																		
Apathy																		
Confusion																		
Paranoic ideas																		
Depression																		
Insomnia																		
Pica (Swallowing foreign bodies)																		
Night blindness																		
Blurred vision																		
Opticus Neuropathy																		
Myopia																		
Headache																		
Rhinaesthesia																		
Loss of taste																		
Metallic taste																		
Hearing loss																		
Pain (Calf, legs)																		
Muscle cramps (at nighttime)																		
Muscle weakness																		
Myelopathy																		
Numbness (Hands, Feet)																		
Burning Feet																		
Pain sensitivity																		
Loss of vibration sensitivity																		
Ataxia																		
Loss of coordination																		
<b>Gastrointestinal symptoms</b>																		
Inappetence																		
Vomiting																		
Diarrhea																		
Constipation																		
Low stomach acidity																		
<b>Cardio-pulmonary symptoms</b>																		
Shortness of breath																		
Tachycardia																		
Palpitations																		
Heart Insufficiency																		
Edema																		