

Vitamin B complex

→ ① soluble of water
 2. Non soluble of fat
 لا تذوب في الماء
 - C-Ho metabolism
 TPP
 Impairment of glycos metabolism

death → heart failure
 Wet → palpitation + dyspnea + cardiac enlargement
 Thiamine deficiency
 Dry → peripheral neuropathy
 Vitamin

Vitamin	Name	Source	Function	Deficiency
B1	Thiamine Anti Beriberi	Plant (rice + yeast + bran) Animal → Liver, kidney, milk, egg, fish	* growth * Nerves in Normal condition	Thiamin Pyrophosphate (TPP) TPP → B1 Coenzyme 1. Oxidative decarboxylation of α-Keto Acidic 2. Trans Ketolation TPP → Pentose Pyruvic acid → α-Ketoglutaric Acid
B2	Riboflavin	Plant (Yeast + grain + Dry beans and pea) Animal Liver, egg, milk	* Forms 2 coenzymes: FMN hydrogen carriers for FAD healthy for: Skin + Mucosa membrane ① Vision	Deficiency of riboflavin: Ariboflavinosis 1. Cheilosis: Cracks + redness at corners of mouth 2. Glossitis: Painful + smooth + purplish + red tongue 3. Seborrheic dermatitis
B3	Niacin Anti Pellagra Vitamin	Plant → (Yeast, Leafy, grain) Animal → (Meat, Liver, milk)	NAD + NADP ← Coenzymes Nicotinamide Adenine Dinucleotide Nicotinamide Adenine Dinucleotide Phosphate H+ e- catabolic pathways in Metabolism	Deficiency of Niacin: Pellagra → 3Ds 1. Dermatitis (skin dry + scaly + brown) 2. Diarrhea 3. Dementia → Loss of mental power + Loss of ability of concentration
B5	Pyridoxine	Plant → Yeast, seeds Animal → Egg + meat + Liver + Yolk	① Tryptophan → Niacin (B3) ② Formation of anti bodies hemoglobin ③ Important for nervous system	deficiency → Anemia + skin lesion + Seizures ↓ Anri Body production
B9	Folic acid Anti-megaloblastic Anemia	Sources: Rich: Yeast, leafy vegetable Moderate: Cereals, pulses, cereal Poor: Milk	1. Single Carbon donor acceptors 2. DNA synthesis + RBCs formation	Active form of folic acid is "Tetrahydrofolate" Folic Acid → Tetrahydrofolate * Folate supplementations?? Neural Tube defects
B12	Cyanocobalamin Anti-pernicious Anemia	* Animal source only eggs, meat, Liver + fish microorganisms (Intestinal flora)	glycoprotein Intrinsic factor	2. Reduced DNA synthesis → Folate Deficiency cell division is arrested B. Megaloblastic Anemia → RBCs + spleen C. Birth defects during pregnancy
B12		* Function of B12 DNA + RBC's (Folate and Iron) + Myelin sheath	Deficiency of B12 Megaloblastic Anemia + peripheral neuropathy numbness, tingling of extremities	

لماذا B complex في معايرة 10

- ✓ Generally, Vitamin B complex vitamins are not stored in the body, **ONLY B12 is stored in liver.**
- ✓ Vitamin B12 deficiency is seen **after gastrectomy.**
- ✓ Vitamin B12 deficiency is very common among **vegetarians** of low socioeconomic group.