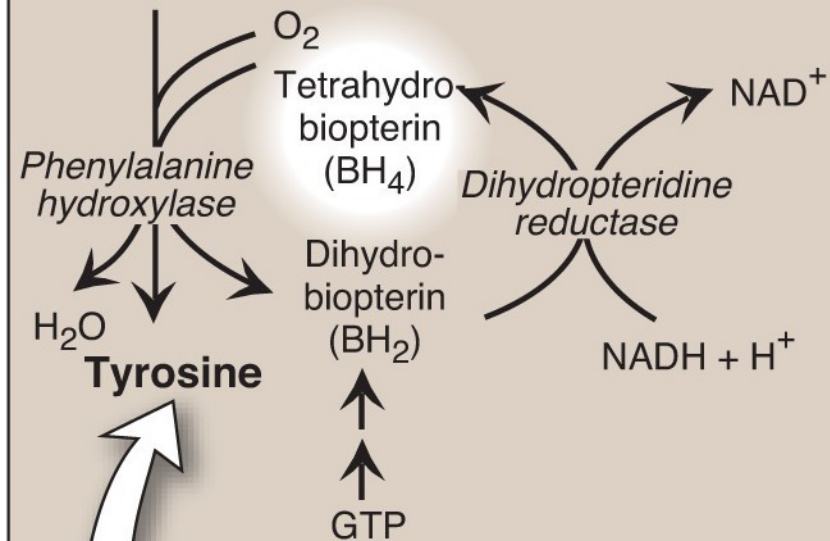


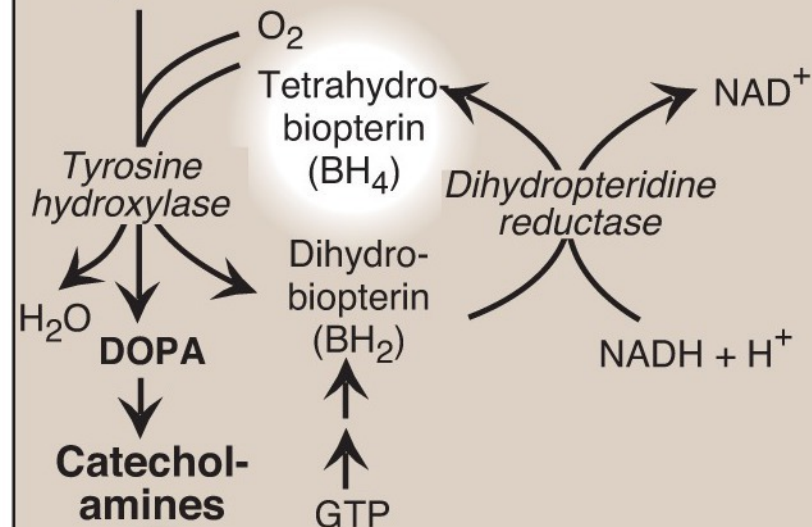
Tyrosine synthesis

Phenylalanine



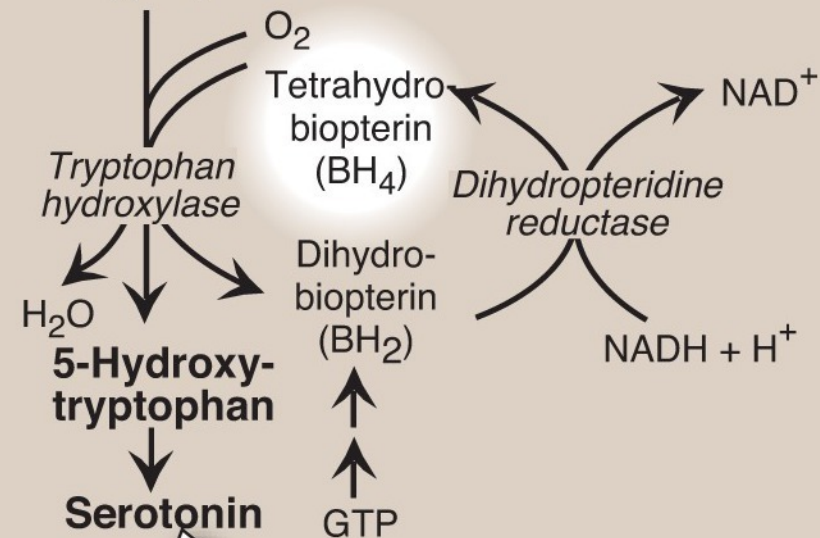
Catecholamine synthesis

Tyrosine



Serotonin synthesis

Tryptophan



A deficiency in *dihydropteridine reductase* or any of the enzymes of BH_4 synthesis leads to hyperphenylalaninemia and decreased synthesis of catecholamines and serotonin.