

[Open Peer Review on Qeios](#)

Thiamine

National Cancer Institute

Source

National Cancer Institute. *Thiamine*. NCI Thesaurus. Code C874.

A heat-labile and water-soluble essential vitamin, belonging to the vitamin B family, with antioxidant, erythropoietic, mood modulating, and glucose-regulating activities. Thiamine reacts with adenosine triphosphate (ATP) to form an active coenzyme, thiamine pyrophosphate. Thiamine pyrophosphate is necessary for the actions of pyruvate dehydrogenase and alpha-ketoglutarate in carbohydrate metabolism and for the actions of transketolase, an enzyme that plays an important role in the pentose phosphate pathway. Thiamine plays a key role in intracellular glucose metabolism and may inhibit the action of glucose and insulin on arterial smooth muscle cell proliferation. Thiamine may also protect against lead toxicity by inhibiting lead-induced lipid peroxidation.