

Thiamine and Thiaminase

Thiamine (vitamin B12) is a water-soluble vitamin needed by all living cells. Most animals acquire thiamine through their diet. Thiamine deficiency complex (TDC) is a disorder resulting from the inability to acquire or retain thiamine and has been documented in aquatic organisms throughout the Northern hemisphere, including the Laurentian Great Lakes. Thiamine deficiency has been linked to neurological disorders, immunosuppression, and lower reproductive viability. A common outcome is high mortality among early life stages. Thiamine is produced by many sources and is generally not limiting in natural systems. Consumption of food that contains high levels of thiaminase, a thiamine-degrading enzyme, is the primary explanation of low levels of thiamine in individuals and the resulting onset of TDC. Due to the dietary origin of thiamine and thiaminase and the importance for Great Lakes fishes, we have included both thiamine and thiaminase in GLATAR.

Key citations:

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