

# Eye movement may be the earliest warning sign of a potentially dangerous thiamine deficiency

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Horizontal gaze-evoked nystagmus, a vision condition in which the eyes make repetitive, uncontrolled movements, may be one of the earliest warning signs of thiamine deficiency. This finding is important because early detection is necessary to avoid the risk for permanent neurologic deficits and early death. A case report is published in *Annals of Internal Medicine*.

A researcher from the University of Illinois College of Medicine presented the case of a 29-year-old woman who was hospitalized for frequent vomiting over a 2 week period. While in the hospital, the patient reported unsteadiness when walking, vertigo, and objects seeming to move back and forth in her field of vision (oscillopsia). The [clinician](#) determined that she had intermittent nystagmus that was horizontal and left beat when she was looking straight ahead, and she could not keep her eyes in an eccentric, lateral position (bilateral gaze-holding failure). This type of nystagmus results from dysfunction of the neural integrator, which is located in the nucleus prepositus hypoglossi bilaterally in the floor of the fourth ventricle. The early manifestations of [thiamine deficiency](#) seem to cluster around susceptible brainstem nuclei located in the floor of the fourth ventricle, leading the clinician to suspect [thiamine](#) deficiency.

The patient improved with thiamine supplementation and the Wernicke triad of encephalopathy, ataxia, and ophthalmoplegia was avoided. According to the researcher, a careful ocular motor and vestibular examination may enable a diagnosis of thiamine deficiency before a patient develops dangerous manifestations of a thiamine deficiency.

**More information:** *Annals of Internal Medicine* (2020).

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