

# Abstract

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## Oral High-Dose Thiamine Improves the Symptoms of Chronic Cluster Headache.

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**BACKGROUND:** Cluster headache is a rare painful primary disorder occurring in either episodic or chronic patterns. Several authors found that the hypothalamus, the brain region regulating endocrine function and autonomic system, is involved in the pathophysiology of cluster headache. Some authors have found in patients affected by this disease abnormality in glucose metabolism.

**OBJECTIVE AND METHOD:** Considering the role of thiamine in brain function, in energetic metabolism, and in pain modulation, we treated a patient affected by cluster headache with oral high-dose thiamine.

**RESULTS:** We report a 41-year-old man suffering from primary chronic cluster headache since the age of 15 years. The patient began oral therapy with high-dose thiamine in December 2016. Oral thiamine supplementation led to a dramatic improvement of the symptoms. The therapy was effective in reversing all the symptoms of the disease.

**CONCLUSION:** Our observation suggests that a thiamine deficiency due to enzymatic abnormalities or to dysfunction of the circulation of thiamine in the intracellular space could cause a neuronal selective impairment in the centers that are involved in this disease and could have an important role in the pathogenesis of the symptoms of cluster headache.

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