



Are your cancer patients **experiencing hypoglycemia?**

The underlying cause could be the tumor you're already treating¹

Non-islet cell tumor hypoglycemia (NICTH) is a rare, paraneoplastic hypoglycemia associated with extra-pancreatic tumors, typically of epithelial or mesenchymal origin.^{1,2}

Malignant (or less often, benign) tumors secrete an intermediate molecule of insulin-like growth factor 2 (IGF-2) referred to as “big” IGF-2, which activates insulin receptors. Increased bioavailability of IGF-2 variants suppresses glucose production and increases peripheral glucose uptake, leading to recurrent hypoglycemia.^{1,2}

15+ tumor types

are known to be associated with the production of IGF-2 variants responsible for NICTH, including¹⁻³:

- Hepatocellular carcinoma (most prevalent)
- Gastrointestinal stromal tumor
- Fibrosarcoma
- Mesothelioma
- Colorectal cancer
- Hemangiopericytoma
- Solitary fibrous tumor
- Renal cell carcinoma
- Etc



NICTH may present with mild symptoms that can quickly escalate



Initial, autonomic symptoms of hypoglycemia may go undetected and progress into an emergency that leads to the diagnosis of non-islet cell tumor hypoglycemia (NICTH).^{1,4}



Symptoms of hypoglycemia may also overlap with tumor-related symptoms (such as night sweats or orthostasis), making it crucial to monitor patients for warning signs that may otherwise be overlooked.^{1,5,6}

Presenting features of NICTH

Hypoglycemia-associated symptoms¹

Autonomic symptoms

Initial warning signs in the body:

- Diaphoresis
- Intense hunger
- Tremors
- Paresthesia
- Palpitations
- Feeling of anxiety or nervousness
- Nausea

Neuroglycopenic symptoms:

- Disorientation
- Seizure
- Decreased motor activity
- Loss of consciousness
- Behavioral changes

Tumor-associated symptoms^{1,6}

- Weight loss
- Dyspnea
- Abdominal pain
- Night sweats
- Frequent infections
- Orthostasis
- Hyponatremia

NICTH can significantly impact quality of life

Patients often live with anxiety and fear of hypoglycemic episodes that hinders them from doing daily activities alone, such as driving, walking long distances, or showering.^{7,8}

Uncontrolled hypoglycemia has serious implications, such as^{1,5}:

- Coma
- Organ failure
- Seizures
- Acute morbidity
- Neurological damage
- Cardiovascular events
- Cerebrovascular events
- Interference with tumor-directed therapy

There is a high unmet need for medical therapies



Guidelines for the management of NICTH have yet to be established. While resection is the preferred standard of care to mitigate both tumor growth and associated hypoglycemia, it is **often unfeasible due to progression** of the tumor by the time of diagnosis.^{1,2}



Tumor-directed therapies and medical or supportive management may have moderate benefit but do not sufficiently control hypoglycemia in NICTH due to mechanistic limitations and side effects. **There is a need for novel treatment strategies** that safely and effectively target the excess production of IGF-2 variants responsible.¹



Until a targeted therapy is available, **greater awareness of the association between tumor diagnosis and recurrent hypoglycemia, and early consultation** between oncologists and endocrinologists will allow for earlier intervention and management—improving patient prognosis.¹



Get more information about NICTH

Scan this QR code to learn more about hypoglycemia associated with non-islet cell tumors, including how to diagnose it.

To access a list of related medical societies and patient advocacy groups, visit **CancerHypoglycemia.com**.

References: 1. Karamanolis N, et al. Paraneoplastic hypoglycemia: an overview for optimal clinical guidance. *Metab Open*. 2024;23(100305):1-9. doi:10.1016/j.metop.2024.100305 2. Bodnar T, et al. Management of non-islet cell tumor hypoglycemia: a clinical review. *J Clin Endocrinol Metab*. 2013;99(3):713-722. doi:10.1210/jc.2013-3382 3. De Groot J, et al. Non-islet cell tumor-induced hypoglycemia: a review of the literature including two new cases. *Endocr Relat Cancer*. 2007;14(4):979-993. doi:10.1677/ERC-07-0161 4. Voon K, et al. Three cases of non-islet cell tumor hypoglycemia highlighting efficacy of glucocorticoid treatment. *JCEM Case Rep*. 2023;1(4):1-4. doi.org/10.1210/jcemcr/luad045 5. Cleveland Clinic. Hypoglycemia (low blood sugar). Published January 21, 2023. Accessed June 17, 2026. <https://my.clevelandclinic.org/health/diseases/11647-hypoglycemia-low-blood-sugar> 6. Akavia L, et al. Extreme hypoglycaemia in anaplastic large cell lymphoma. *Eur J Case Rep Intern Med*. 2016;4(2):1-3. doi:10.12890/2016_000510 7. Przesak A, et al. Fear of hypoglycemia—an underestimated problem. *Brain Behav*. 2022;12:e2633. 8. Data on file. Rezolute, Inc.