

Acquired Hypothalamic Obesity



Actor portrayal

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Acquired hypothalamic obesity (HO) is characterized by hypothalamic injury leading to weight gain^{1–4}



While HO can be congenital or acquired, **more than 80% of cases are acquired.**⁸



Several causes of injury can lead to hypothalamic dysfunction and acquired hypothalamic obesity (HO)^{5,8}



KNOWN COMMON CAUSES^{1,8}:

- Hypothalamic-pituitary tumors, including craniopharyngioma, astrocytoma, and pituitary adenomas
- Tumor treatment, including surgical resection and radiotherapy

OTHER CAUSES⁸:

- Traumatic brain injury
- Hypothalamic inflammation
- Stroke

Know who is at risk—acquired HO occurs in up to **75% of patients with craniopharyngioma** following treatment.⁹



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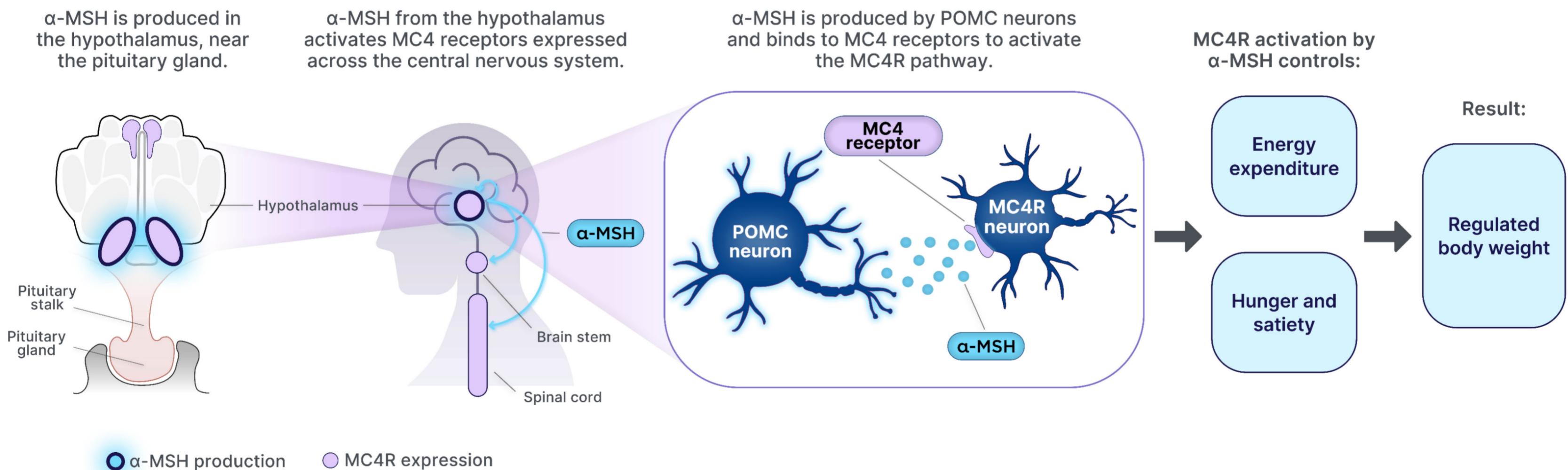
Acquired hypothalamic obesity (HO) has an underlying pathophysiology that distinguishes it from general obesity^{1–4}

Acquired HO can occur when hypothalamic injury impairs MC4R pathway function.^{1–4}

FUNCTIONAL MC4R PATHWAY ACTIVITY

IMPAIRED MC4R PATHWAY ACTIVITY

The MC4R pathway regulates hunger, satiety, and energy expenditure.^{10–12}



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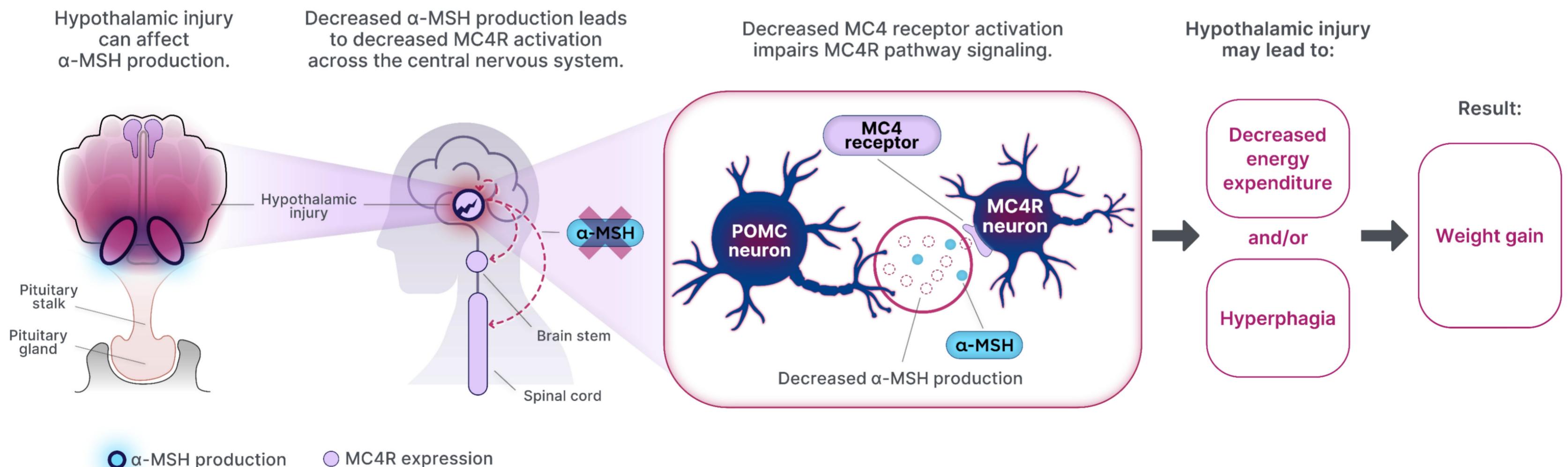
Acquired hypothalamic obesity (HO) has an underlying pathophysiology that distinguishes it from general obesity¹⁻⁴

Acquired HO can occur when hypothalamic injury impairs MC4R pathway function.¹⁻⁴

FUNCTIONAL MC4R PATHWAY ACTIVITY

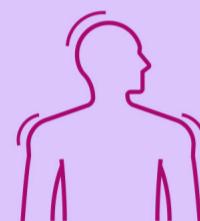
IMPAIRED MC4R PATHWAY ACTIVITY

Injury to the hypothalamus can disrupt MC4R pathway signaling, ultimately leading to weight gain.^{1-4,13,14}



Acquired hypothalamic obesity (HO) carries significant, long-term burden^{14,15}

There is a strong and significant correlation between increased weight and decreased quality of life for patients with acquired HO and their caregivers.^{13,14}



Physical burden

Significant burden on the day-to-day lives of patients who may experience^{13,14}:

- Sleep disruptions
- Fatigue
- Decreased physical activity
- Increased hunger or hyperphagia
- Weight gain, even in the absence of increased caloric intake



Emotional burden

Distressing emotional and social challenges for patients^{13,14}:

- Poor body image perceptions
- Fewer positive social interactions
- Negative impact on mental health
- Frustration due to difficulty losing weight

SEE THE LONG-TERM EFFECTS IN CRANIOPHARYNGIOMA SURVIVORS



TAP TO SEE DATA



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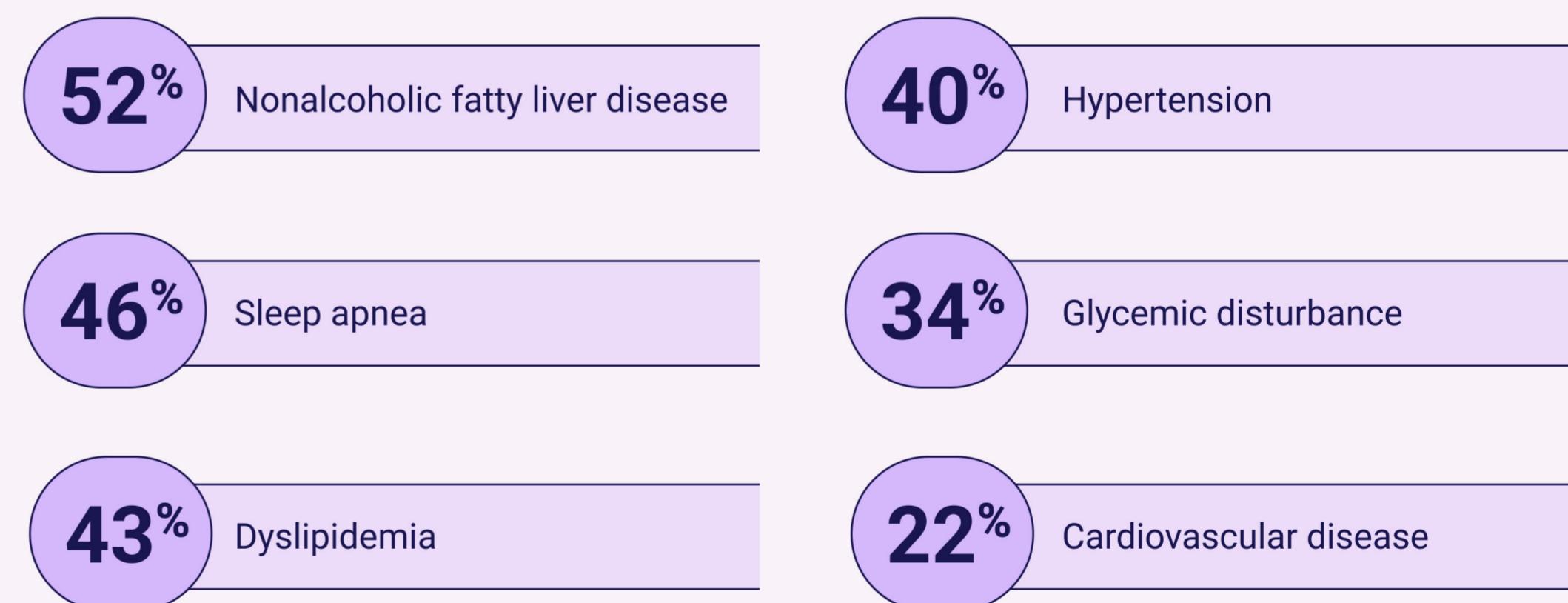
Acquired hypothalamic obesity (HO) carries significant, long-term burden^{14,15}

Acquired hypothalamic obesity is a major risk factor for related morbidity and mortality.^{6,15}

“ When you’re actively watching your child suffer, it’s pretty impactful on [your] well-being. It’s...the grief, the sadness, the fear for **what this means for his future health, both physical health and mental health.** ”

– CAREGIVER OF AN INDIVIDUAL LIVING WITH ACQUIRED HO

LONG-TERM EFFECTS OF OBESITY-RELATED SEQUELAE IN CRANIOPHARYNGIOMA SURVIVORS¹⁶⁻¹⁸



Hyperphagia contributes significantly to patient and caregiver burden in acquired hypothalamic obesity (HO)¹³

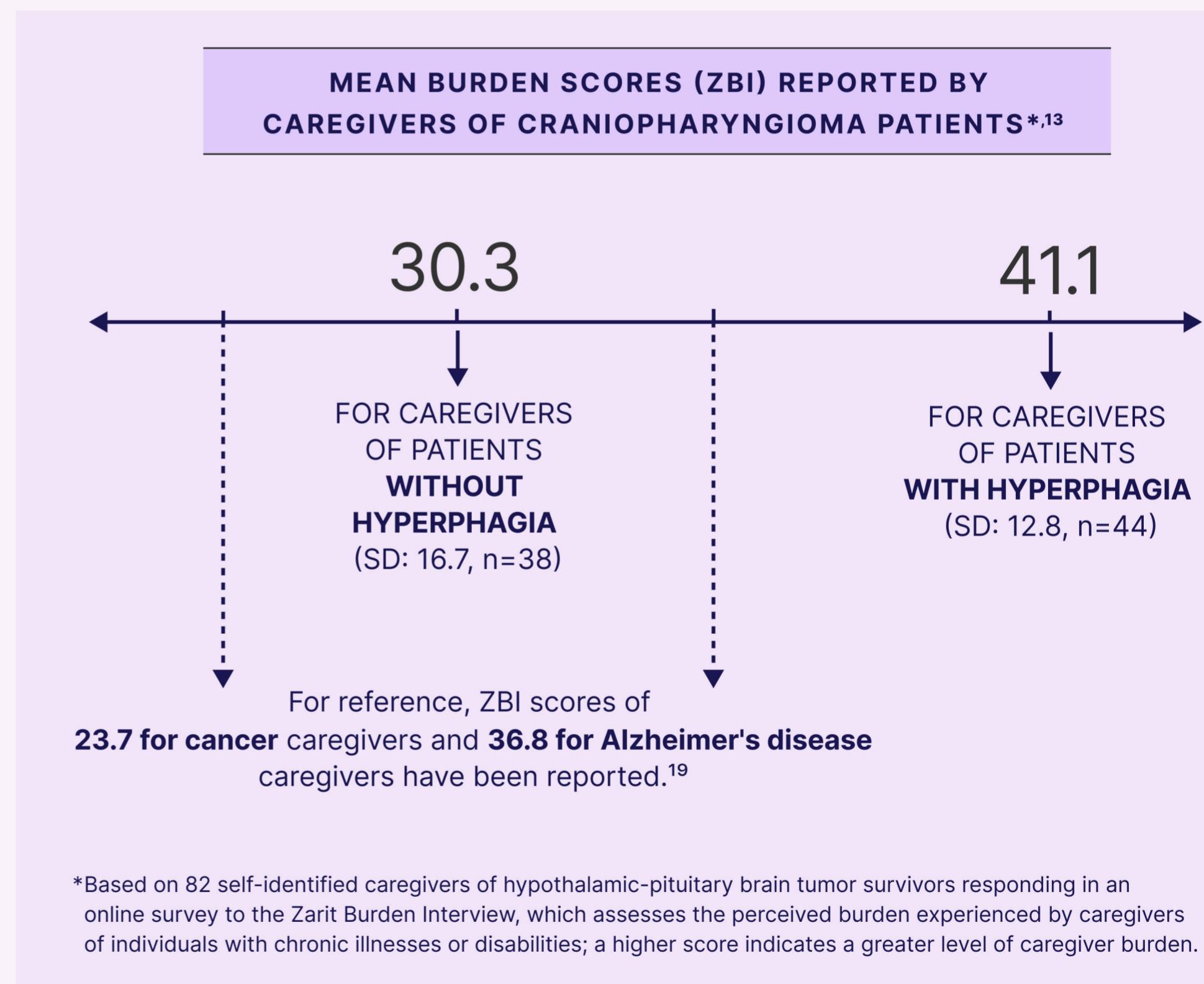
Hyperphagia is a chronic, pathological condition characterized by insatiable hunger, impaired satiety, and persistent abnormal food-seeking behavior.^{5,7}



of patients with acquired HO experience hyperphagia, though the presentation of symptoms and behaviors can vary in severity.^{7,13}

“Food ruled my life and still does to a certain degree... it's a lot of grief and struggle in my everyday life.”

- INDIVIDUAL LIVING WITH ACQUIRED HO



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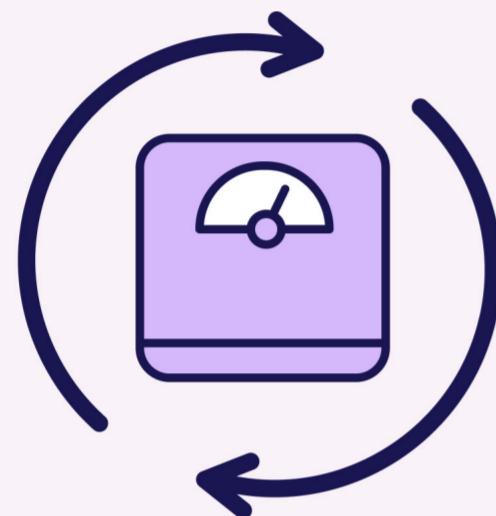
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Screening for acquired hypothalamic obesity (HO) is critical in cases of hypothalamic injury

CLINICAL DIAGNOSIS^{1,6,7,9,20,21}



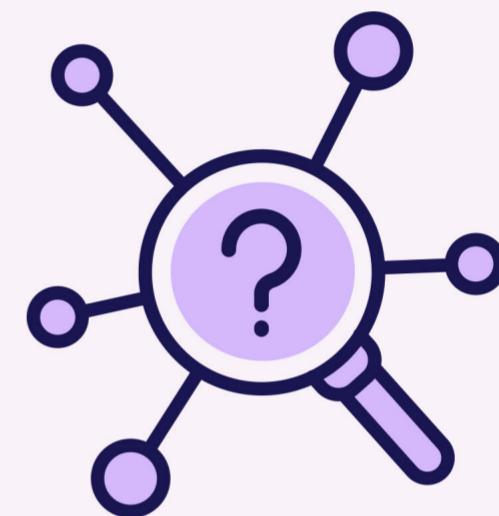
A clinical diagnosis of acquired HO is defined as **weight gain following hypothalamic injury**, typically beginning within 6 to 12 months post-injury.

VARIABLE PRESENTATION^{7,22}



Weight gain may be accelerated and/or sustained, though onset and progression can vary based on the **type, location, and extent of hypothalamic injury**.

CONFOUNDING FACTORS



Recognizing acquired HO may be confounded by temporary weight gain from **medications or hormone replacements**.

Many patients may not be aware of acquired HO as a risk following hypothalamic injury or may only be focused on other post-treatment concerns.

SEE SIGNS AND SYMPTOMS THAT CAN INDICATE ACQUIRED HO



TAP TO SEE SIGNS



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Screening for acquired hypothalamic obesity (HO) is critical in cases of hypothalamic injury

Stay alert for signs that could indicate acquired HO.^{1,5,7,12,13,23}



Screen all patients with a history of hypothalamic injury due to:

- Hypothalamic-pituitary tumors
- Tumor treatment
- Traumatic brain injuries
- Hypothalamic inflammation
- Stroke



In addition to post-injury weight gain, other signs and symptoms of acquired HO may include:

- Sleep disruptions
- Fatigue
- Decreased physical activity
- Increased hunger or hyperphagia



In your patients with obesity, screen for any history of hypothalamic injury and other key features that may include:

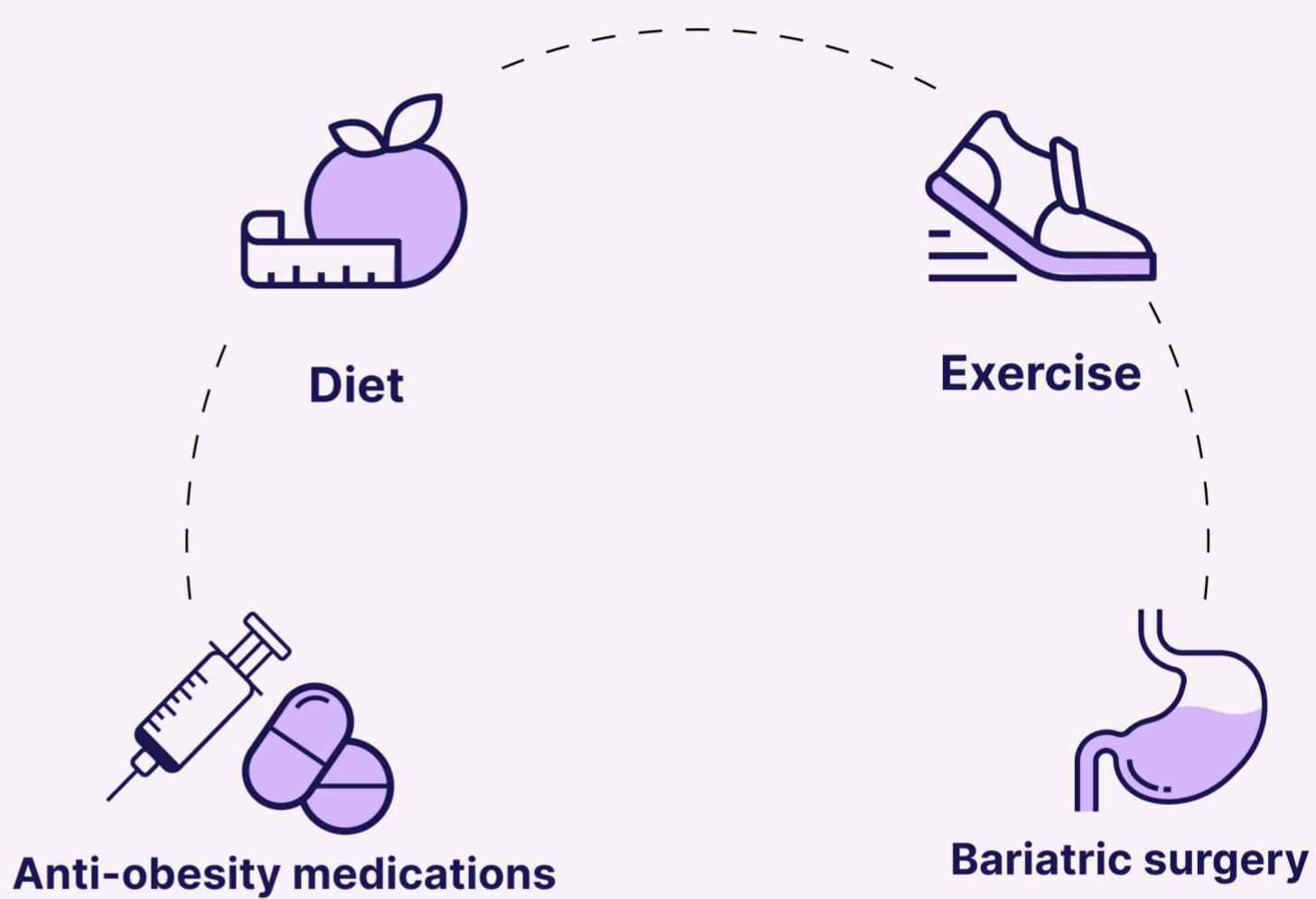
- Signs of hypothalamic dysfunction
- Any signs and symptoms of acquired HO
- Obesity that may have been resistant to traditional weight loss management strategies



There is a critical need to recognize the urgency to diagnose and manage acquired hypothalamic obesity (HO) due to its impact on patients and families^{1,6,7,13-15}

Patients may experience short-term weight loss with lifestyle modifications, anti-obesity medications, or surgery, but **these approaches have shown limited efficacy in producing sustained results in acquired HO.**^{1,6,7,9,20,21,24}

CURRENTLY THERE IS NO FDA-APPROVED TREATMENT SPECIFICALLY INDICATED FOR ACQUIRED HO.^{6,25,26}



While acquired HO can be challenging to manage, **early identification and proactive intervention** may help to **slow the progression of weight gain** and help patients better understand their disease.^{8,16}



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Connect patients and family members with someone who understands acquired hypothalamic obesity (HO) and its challenges



Actor portrayals

InTune is a program that provides one-on-one educational support for people with acquired HO and their family members.

Patient Education Managers* are trained to:

- Provide resources, education, and information tailored to the **unique needs of patients with acquired HO**
- Help patients and family members connect with a community of others living with acquired HO

Many patients may be unprepared for the impact of acquired HO, so accessing tailored resources and one-on-one education can make a meaningful difference.

Learn more and find resources at HCP.DifferentObesity.com

*Patient Education Managers are employees of Rhythm Pharmaceuticals and do not provide medical care or advice. We encourage patients to always speak to their healthcare providers regarding their medical care.



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Acquired hypothalamic obesity (HO) is characterized by hypothalamic injury leading to weight gain.

Weight gain and hyperphagia from acquired HO contribute significantly to patient and caregiver burden.

Promote early identification and education in your practice:

- Discuss signs and symptoms to watch out for with your patients
- Screen patients with a history of hypothalamic injury
- Connect patients and caregivers with one-on-one educational support

Learn more at HCP.DifferentObesity.com



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REFERENCES

1. Abuzzahab MJ, Roth CL, Shoemaker AH. Hypothalamic obesity: prologue and promise. *Horm Res Paediatr.* 2019;91(2):128-136. doi:10.1159/000496564
2. Roth CL. Hypothalamic obesity in patients with craniopharyngioma: profound changes of several weight regulatory circuits. *Front Endocrinol (Lausanne).* 2011;2:49. doi:10.3389/fendo.2011.00049
3. Roth CL, Enriori PJ, Gebhardt U, et al. Changes of peripheral alpha-melanocyte-stimulating hormone in childhood obesity. *Metabolism.* 2010;59(2):186-194. doi:10.1016/j.metabol.2009.06.031
4. Roth CL, Gebhardt U, Müller HL. Appetite-regulating hormone changes in patients with craniopharyngioma. *Obesity (Silver Spring).* 2011;19(1):36-42. doi:10.1038/oby.2010.80
5. van Santen HM, van Schaik J, van Roessel IMAA, Beckhaus J, Boekhoff S, Müller HL. Diagnostic criteria for the hypothalamic syndrome in childhood. *Eur J Endocrinol.* 2023;188(2):lvad009. doi:10.1093/ejendo/lvad009
6. van Iersel L, Brokke KE, Adan RAH, Bulthuis LCM, van den Akker ELT, van Santen HM. Pathophysiology and individualized treatment of hypothalamic obesity following craniopharyngioma and other suprasellar tumors: a systematic review. *Endocr Rev.* 2019;40(1):193-235. doi:10.1210/er.2018-00017
7. Roth CL. Hypothalamic obesity in craniopharyngioma patients: disturbed energy homeostasis related to extent of hypothalamic damage and its implication for obesity intervention. *J Clin Med.* 2015;4(9):1774-1797. doi:10.3390/jcm4091774
8. Rose SR, Horne VE, Bingham N, Jenkins T, Black J, Inge T. Hypothalamic obesity: 4 years of the International Registry of Hypothalamic Obesity Disorders. *Obesity (Silver Spring).* 2018;26(11):1727-1732. doi:10.1002/oby.22315
9. Lustig RH. Hypothalamic obesity after craniopharyngioma: mechanisms, diagnosis, and treatment. *Front Endocrinol (Lausanne).* 2011;2:60. doi:10.3389/fendo.2011.00060
10. Timper K, Brüning JC. Hypothalamic circuits regulating appetite and energy homeostasis: pathways to obesity. *Dis Model Mech.* 2017;10(6):679-689. doi:10.1242/dmm.026609
11. Vlaardingerbroek H, van den Akker ELT, Hokken-Koelega ACS. Appetite- and weight-inducing and -inhibiting neuroendocrine factors in Prader-Willi syndrome, Bardet-Biedl syndrome and craniopharyngioma versus anorexia nervosa. *Endocr Connect.* 2021;10(5):R175-R188. doi:10.1530/EC-21-0111
12. Haliloglu B, Bereket A. Hypothalamic obesity in children: pathophysiology to clinical management. *J Pediatr Endocrinol Metab.* 2015;28(5-6):503-513. doi:10.1515/jjem-2014-0512
13. Kayadjianian N, Hsu EA, Wood AM, Carson DS. Caregiver burden and its relationship to health-related quality of life in craniopharyngioma survivors. *J Clin Endocrinol Metab.* 2023;109(1):e76-e87. doi:10.1210/clinem/dgad488
14. Craven M, Crowley JH, Chiang L, et al. A survey of patient-relevant outcomes in pediatric craniopharyngioma: focus on hypothalamic obesity. *Front Endocrinol (Lausanne).* 2022;13:876770. doi:10.3389/fendo.2022.876770
15. Bereket A. Postoperative and long-term endocrinologic complications of craniopharyngioma. *Horm Res Paediatr.* 2020;93(9-10):497-509. doi:10.1159/000515347
16. Dogra P, Bedatsova L, Van Gompel JJ, Giannini C, Donegan DM, Erickson D. Long-term outcomes in patients with adult-onset craniopharyngioma. *Endocrine.* 2022;78(1):123-134. doi:10.1007/s12020-022-03134-4
17. Crowley RK, Woods C, Fleming M, et al. Somnolence in adult craniopharyngioma patients is a common, heterogeneous condition that is potentially treatable. *Clin Endocrinol (Oxf).* 2011;74(6):750-755. doi:10.1111/j.1365-2265.2011.03993.x
18. Pereira AM, Schmid EM, Schutte PJ, et al. High prevalence of long-term cardiovascular, neurological and psychosocial morbidity after treatment for craniopharyngioma. *Clin Endocrinol (Oxf).* 2005;62(2):197-204. doi:10.1111/j.1365-2265.2004.02196.x
19. Demirbas M, Hahn-Pedersen JH, Jørgensen HL. Comparison between burden of care partners of individuals with Alzheimer's disease versus individuals with other chronic diseases. *Neurol Ther.* 2023;12(4):1051-1068. doi:10.1007/s40120-023-00493-6
20. Rosenfeld A, Arrington D, Miller J, et al. A review of childhood and adolescent craniopharyngiomas with particular attention to hypothalamic obesity. *Pediatr Neurol.* 2014;50(1):4-10. doi:10.1016/j.pediatrneurology.2013.09.003
21. Van Roessel IMAA, Van Den Brink M, Dekker J, Ruitenberg-van Essen BG, Tissing WJE, van Santen HM. Feasibility, safety, and efficacy of dietary or lifestyle interventions for hypothalamic obesity: a systematic review. *Clin Nutr.* 2024;43(8):1798-1811. doi:10.1016/j.clnu.2024.05.028
22. Müller HL. Craniopharyngioma and hypothalamic injury: latest insights into consequent eating disorders and obesity. *Curr Opin Endocrinol Diabetes Obes.* 2016;23(1):81-89. doi:10.1097/MED.0000000000000214
23. Kim RJ, Shah R, Tershakovec AM, et al. Energy expenditure in obesity associated with craniopharyngioma. *Childs Nerv Syst.* 2010;26(7):913-917. doi:10.1007/s00381-009-1078-1
24. Dimitri P. Treatment of acquired hypothalamic obesity: now and the future. *Front Endocrinol (Lausanne).* 2022;13:846880. doi:10.3389/fendo.2022.846880
25. Shoemaker AH, Tamaroff J. Approach to the patient with hypothalamic obesity. *J Clin Endocrinol Metab.* 2023;108(5):1236-1242. doi:10.1210/clinem/dgac678
26. Roth CL, Zenno A. Treatment of hypothalamic obesity in people with hypothalamic injury: new drugs are on the horizon. *Front Endocrinol (Lausanne).* 2023;14:1256514. doi:10.3389/fendo.2023.1256514



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