

The Department of Vermont Health Access Clinical Criteria

Subject: Hereditary Hemochromatosis Genetic Testing

Last Review: June 26p, 2024

Past Revisions: February 10, 2023, January 31, 2022, November 20, 2020, August 11, 2016

***Please note: Most current content changes will be highlighted in yellow.**

Description of Service or Procedure

Hereditary hemochromatosis (HH) is a genetic disorder caused by mutations to specific genes that control iron regulation resulting in the body's absorption of too much iron from food in the digestive tract. Over time, the excess iron is deposited into cells of the liver, heart, pancreas, joints, and pituitary gland, leading to diseases such as cirrhosis of the liver, liver cancer, diabetes, heart disease or failure, and joint disease. HH is an autosomal recessive disorder which means that affected individuals inherit one mutated gene from each parent. Hereditary hemochromatosis is associated with mutations of several genes, but most commonly the HFE gene, which is responsible for producing the HFE protein. The two most common mutations found in the HFE gene related to HH are the C282Y and H63D mutations. When clinical presentation warrants, genetic testing can aid diagnosis of HH and inform treatment.

Disclaimer

Coverage is limited to that outlined in Medicaid Rule or Health Care Administrative Rules that pertain to the member's aid category. Prior Authorization (PA) is only valid if the member is eligible for the applicable item or service on the date of service.

Medicaid Rule

Medicaid and Health Care Administrative Rules can be found at <https://humanservices.vermont.gov/rules-policies/health-care-rules/health-care-administrative-rules-hcar/adopted-rules>

- 7102.2 Prior Authorization Determination
- 7405 Laboratory and Radiology Services
- 4.101 Medical Necessity for Covered Services
- 4.104 Medicaid Non-Covered Services
- 4.106 Early and Periodic Screening, Diagnostic and Treatment (EPSDT) Services



Coverage Position

HH gene analysis may be covered for members:

- When HH gene analysis is prescribed by a licensed medical provider, enrolled in the Vermont Medicaid program, operating within their scope of practice as described on the Vermont Office of Professional Regulation's website*, Statute, or rule who is knowledgeable regarding HH gene analysis testing and results and who provides medical care to the member AND
- When the clinical criteria below are met.

* Vermont's Office of Professional Regulation's website: <https://sos.vermont.gov/opr/>

Coverage Criteria

HH may be covered for a member with one or more of the following:

1. Abnormal iron study results indicating iron overload, even in the absence of symptoms.
OR
2. Suggestive symptoms (examples: abdominal pain, weakness, lethargy, arthralgias, impotence, weight loss), physical findings (examples: cirrhosis of the liver, liver cancer, diabetes, heart disease or failure, joint disease. osteoporosis) AND an elevated transferrin saturation or serum ferritin test. **OR**
3. A family history of HH in a first degree relative.

Definition: A first degree blood relative shares 50 % DNA (father, mother, brother, sister, daughter, or son).

Considerations: Providers requesting this test should provide pre- and post-test genetic counseling for the member and family, if applicable.

Early and Periodic Screening, Diagnostic and Treatment (EPSDT): Vermont Medicaid will provide comprehensive services and furnish all Medicaid coverable, appropriate, and medically necessary services needed to correct and ameliorate health conditions for Medicaid members under age 21.

Please note, Vermont Medicaid Clinical Criteria is reviewed based on available literature, evidence- based guidelines/standards, Medicaid rule and policy, and Medicare coverage determinations that may be appropriate to incorporate when applicable.

Clinical criteria for repeat service or procedure

Subsequent HH genetic testing is not **considered medically** necessary and will not be covered.

Type of service or procedure not covered (this list may not be all inclusive)

Average risk population screening for HH is not recommended.

References

- Bacon, B.R., Adams, P., Kowdley, K., Powell, L., & Tavill, A. (2011). Diagnosis and management of hemochromatosis: 2011 practice guideline by the American Association for the Study of Liver Diseases. *Hepatology*, 54(1). <https://doi.org/10.1002/hep.24330>
- Camaschella, C. & Girella, D. (2022). HFE and other hemochromatosis genes. UpToDate. Retrieved February 2, 2023, from https://www.uptodate.com/contents/hfe-and-other-hemochromatosis-genes/print?search=hereditary%20hemochromatosis%20genetic&topicRef=7167&source=see_link
- Centers for Medicare and Medicaid Services. (2017). *Early and periodic screening, diagnostic, and treatment*. Medicaid.gov. <https://www.medicaid.gov/medicaid/benefits/epsdt/index.html>
- Centers for Medicare and Medicaid Services. (2023, August 6). *Local coverage determination: Molecular pathology procedures (L3500)*. Medicaid Coverage Database. <https://www.cms.gov/medicare-coverage-database/view/lcd.aspx?LCDId=35000>
- Hamilton, J.P.A. (2022, September). Hereditary hemochromatosis. In *Merck manual professional version online*. Retrieved February 3, 2023, from: <https://www.merckmanuals.com/professional/hematology-and-oncology/iron-overload/hereditary-hemochromatosis#>
- Hayes, Inc. Clinical Utility Evaluation. *Genetic Testing for Hereditary Hemochromatosis (HH) in Relatives of Patients with a Confirmed HH Diagnosis*. Lansdale, PA: Hayes, Inc., October 2022.
- Hayes, Inc. Clinical Utility Evaluation. *Genetic Testing for Hereditary Hemochromatosis in Patients with Iron Overload*. Lansdale, PA: Hayes, Inc., October 2022.
- Kane, S.F., Roberts, C., & Paulus, R. (2021). Hereditary hemochromatosis: Rapid evidence review. *American Family Physician*, 104(2), 263-270. <https://www.aafp.org/afp/2021/0900/p263.html>
- Kowdley, K.V., Brown, K.E., Ahn, J., & Sundaram, V. (2019). ACG clinical guideline: Hereditary hemochromatosis. *The American Journal of Gastroenterology*, 114(8). doi: 10.14309/ajg.0000000000000315
- Phatak, P. & Domenico, G. (2023). Clinical manifestations and diagnosis of hereditary hemochromatosis. *UpToDate*. Retrieved March 1, 2024, from https://www.uptodate.com/contents/clinical-manifestations-and-diagnosis-of-hereditary-hemochromatosis?search=hereditary%20hemochromatosis&source=search_result&selectedTitle=1%7E120&usage_type=default&display_rank=1#H3843640398
- Porto, G. Brissot, P., Swinkels, D.W., Zoller H., Kamarainen, O., Patton, S., Alonso, I., Morris, M., & Keeney, S. (2016). EMQN best practice guidelines for the molecular genetic diagnosis of hereditary hemochromatosis (HH). *European Journal of Human Genetics*, 24(4), 479-495. <https://doi.org/10.1038%2Ffejhg.2015.128>

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