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# The Department of Vermont Health Access Clinical Criteria

**Subject:** Tumor Protein 53 for Li-Fraumeni Syndrome Genetic Testing
**Last Review:** August 30, 2024*
**Past Revisions:** September 7, 2023, April 5, 2022

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

## Description of Service or Procedure

The tumor protein p53 (TP53) gene suppresses tumor development by encoding a protein that inhibits cells from growing and dividing too rapidly. Mutations to the TP53 gene can result in ineffective protein production and thus impact the gene's ability to suppress tumor development.

Li-Fraumeni syndrome (LFS) is a cancer predisposition syndrome associated with autosomal dominant inherited abnormalities of the TP53 gene on chromosome 17. The mode of inheritance Li-Fraumeni syndrome is manifested by a tendency to develop various malignancies at an unusual age, including breast cancer, sarcomas, brain tumors, and adrenal carcinomas. Li-Fraumeni syndrome is also known as Sarcoma, Breast, Leukemia, and Adrenal Gland (SBLA) cancer syndrome.

## 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

Genetic Testing of TP53 for Li-Fraumeni syndrome may be covered for members:

- When the device is prescribed by a licensed medical provider, enrolled in the Vermont Medicaid program, operating within their scope of practice as described in the Vermont's Office of Professional Regulation's website*, Statue, or rule who is knowledgeable regarding genetic testing of TP53 for Li-Fraumeni syndrome, 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

Genetic Testing of Tumor Protein 53 for Li-Fraumeni syndrome is covered by Vermont Medicaid in accordance with the National Comprehensive Cancer Network® Clinical Practice Guidelines in Oncology for Genetic/Familial High-Risk Assessment of Breast, Ovarian, and Pancreatic Cancers. This guideline may be found at:
https://www.nccn.org/professionals/physician_gls/pdf/genetics_bop.pdf

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

Genetic Testing of TP53 for Li-Fraumeni syndrome will be covered once per lifetime.

## Type of service or procedure covered

Genetic testing of TP53 for Li-Fraumeni syndrome in accordance with NCCN guidelines as above. Prenatal testing may be considered for at-risk pregnancies in situations where a specific TP53 mutation has been identified.

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

Genetic testing for germline TP53 mutation for all other indications, including general screening of healthy individuals with no family history, is investigative and unproven, and therefore NOT COVERED. There is insufficient reliable evidence in the form of high-quality peer-reviewed

medical literature to establish the efficacy or effects on health care outcomes for general screening.

## Coding guidelines

Please see the Medicaid Portal at http://vtmedicaid.com/#/feeSchedule for fee schedules, code coverage, and applicable requirements.

| CPT Code | CPT Code Description |
|---|---|
| 81351 | TP53 (Tumor Protein 53) (e.g., Li-Fraumeni syndrome) gene analysis, full gene sequence |
| 81352 | TP53 (Tumor Protein 53) (e.g., Li-Fraumeni syndrome) gene analysis; targeted sequence analysis (e.g., 4 oncology) |
| 81353 | TP53 (Tumor Protein 53) (e.g., Li-Fraumeni syndrome) gene analysis; known familial variant |

## References


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

de Andrade, K.C., Khincha, P.P., Hatton, J.N., Frone, M.N., Wegman-Ostrosky, T., Mai, P.L., Best, A.F., & Savage, S.A. (2021). Cancer incidence, patterns, and genotype-phenotype associations in individuals with pathogenic or likely pathogenic germline TP53 variants: An observational cohort study. *Lancet Oncology, 22*(12),1787-1798. https://doi.org/10.1016/s1470-2045(21)00580-5

Evans, D.G. & Hanson, H. (2024, March 13). Li-Fraumeni syndrome. *UpToDate.* Retrieved on April 8, 2024, from https://www.uptodate.com/contents/li-fraumeni-syndrome

Fortuno, C., Lee, K., Olivier, M., Pesaran, T., Mai, P.L., de Andrade, K.C., Attardi, L.D., Crowley, S., Evans, D.G., Feng, B.J., Foreman, A.K.M., Frone, M.N., Huether, R., James, P.A., McGoldrick, K., Mester, J., Seifert, B.A., Slavin, T.P., Witkowski, L., … Savage S.A. (2021). Specifications of the ACMG/AMP variant interpretation guidelines for germline TP53 variants. *Human Mutation*, *42*(3), 223-236. https://doi.org/10.1002/humu.24152

Frebourg, T., Bajalica Lagercrantz, S., Oliveira, C., Magenheim, R., Evans, D.G. & European Reference Network GENTURIS. (2020). Guidelines for the Li-Fraumeni and heritable TP53-related cancer syndromes. *European Journal of Human Genetics, 28*(10),1379-1386. https://doi.org/10.1038%2Fs41431-020-0638-4

National Organizations for Rare Disorders. (2021). *Li-Fraumeni Syndrome.* https://rarediseases.org/rare-diseases/li-fraumeni-syndrome/

National Comprehensive Cancer Network. (2024). *NCCN guidelines® version 3.2024 Genetic/familial high-risk assessment: breast, ovarian, and pancreatic*. Retrieved April 8, 2024, from https://www.nccn.org/professionals/physician_gls/pdf/genetics_bop.pdf

Schneider, K, Zelley, K, Nichols, K.E, & Garber, J. (2019). *GeneReviews: Li-Fraumeni syndrome*. (M.P. Adam, H.H. Ardinger, R.A. Pagon, et.al., Ed.). University of Washington, Seattle, WA. https://www.ncbi.nlm.nih.gov/books/NBK1311


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