# Li-Fraumeni Syndrome Screening - Adult





**Note:** Screening is only intended for asymptomatic individuals. Individuals undergoing Li-Fraumeni Syndrome screening should have a 10-year life expectancy and no co-morbidities that would limit the diagnostic evaluation or treatment of any identified problem. The screening technique should be performed with a consistent technique and process.

## PRESENTATION

Personal and/or family history suggestive of Li-Fraumeni syndrome **or** family member diagnosed with Li-Fraumeni syndrome through genetic testing

Referral to Genetics[1] for genetic testing

Genetic testing indicates pathogenic or likely pathogenic *TP53* variant?

- Yes → Genetic testing indicates germline *TP53* mutation?
  - Yes → **A**
  - No → Genetic test results do not clearly indicate whether the *TP53* variant is germline, mosaic or somatic in nature → Patient willing to confirm through skin fibroblast testing[6]?
    - Yes → *TP53*+ confirmed by fibroblast?
      - Yes → See Box A
      - No → Recommendations will be specific to the individual
    - No → Recommendations will be specific to the individual
- No → Cancer screening may be tailored based on personal and family history, per discussion with healthcare team including Genetic Counselor

## ASSESSMENT

**A**

Assessment/evaluation:
- Review personal and family history to identify additional at-risk relatives and provide recommendations for genetic counseling/testing
- Symptom assessment[2]
- Anxiety level assessment[3]
- Lifestyle risk assessment[4]
- Complete physical exam
- Provide patient education[5]

Positive clinical symptom?

- Yes → RECOMMENDATION
- No → See Page 2 for screening guidelines

## RECOMMENDATION

- Refer to appropriate oncology clinic based on clinical symptom
- Li-Fraumeni syndrome screening for other body sites based on cancer prognosis, per Oncologist

[1] Patients will be referred to Genetics within their home center. If the patient is new or does not have a genetics counselor assigned to their home center, they can be referred through any home center.
[2] Refer to Patient Education - Li-Fraumeni Syndrome Education and Early Detection Program (LEAD) - Adult Screening Program
[3] If moderate to severe anxiety related to Li-Fraumeni syndrome screening is identified, refer for psychiatric evaluation and/or counseling
[4] See Physical Activity, Nutrition, and Tobacco Cessation algorithms; ongoing reassessment of lifestyle risks should be a part of routine clinical practice
[5] Patient Education - Li-Fraumeni Syndrome Education and Early Detection (LEAD) - Adult Screening Guidelines
[6] Skin fibroblast testing requires a skin punch biopsy



Department of Clinical Effectiveness V2
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## Li-Fraumeni Syndrome Education and Early Detection (LEAD) - Adult Screening Guidelines

| Cancer | Exams and Tests | Frequency |
|---|---|---|
| General | Complete physical exam | Every 6 months |
| Adrenocortical Tumor (ACT) | • MRI[1] whole body<br>• DHEA-S, ACTH, testosterone | Annually |
| Brain | MRI[1,2] brain | Annually |
| Breast (begin at age 20-25 years old) | Clinical breast exam (begin at age 20 years old) | Every 6-12 months |
| | • Mammogram (begin at age 30 years old)<br>• MRI[1] breast (begin at age 25 years old) | Annually (alternating every 6 months) |
| | Consider surgical removal of both breasts to prevent cancer (bilateral prophylactic mastectomy). For women treated for breast cancer, screening of remaining breast tissue should continue. | Age and patient appropriate |
| Colon (begin at age 25 years old) | • Colonoscopy<br>• Esophagogastroduodenoscopy (EGD) | Every 2-5 years |
| Leukemia/Lymphoma | CBC with differential | Annually |
| Melanoma | Skin exam – see Skin Cancer Screening algorithm | Annually |
| Pancreas[3] | • CA 19-9<br>• HgbA1c<br>• MRI whole body | Annually |
| Sarcoma | MRI whole body | Annually |

DHEA-S = dehydroepiandrosterone sulfate  ACTH = adrenocorticotropic hormone  MRCP = magnetic resonance cholangiopancreatography

[1] MRI of the whole body and brain are both performed on an annual basis, staggered with a six month interval in between. The breast MRI should be performed at the same time as the brain MRI (but on different days due to the contrast dose).

[2] The first MRI should be performed with contrast; if normal, MRI without contrast should be performed thereafter

[3] For patients with a family history of pancreatic ductal adenocarcinoma (PDAC) on affected side [1 first-degree relative (FDR) or 1 second-degree relative (SDR)]: See Pancreatic Cancer Screening algorithm

## SUGGESTED READINGS

Kratz, C., Achatz, M., Brugières, L., Frebourg, T., Garber, J., Greer, M., . . . Kratz, C. (2017). Cancer screening recommendations for individuals with li-fraumeni syndrome. *Clinical Cancer Research*, *23*(11), e38–e45. https://doi.org/10.1158/1078-0432.CCR-17-0408

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## DEVELOPMENT CREDITS

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