The Li-Fraumeni syndrome (LFS) is an inherited form of cancers, affecting children and young adults, and characterized by a wide spectrum of tumors, including soft-tissue and bone sarcomas, brain tumours, adencortical tumours and premenopausal breast cancers. In most of the families, LFS results from germline mutations of the tumor suppressor TP53 gene encoding a transcriptional factor able to regulate cell cycle and apoptosis when DNA damage occurs. Recently, germline mutations of hCHK2, encoding a kinase, regulating cell cycle via Cdc25C and TP53, were identified in affected families. The LFS working group recommendations are the following: (i) positive testing (screening for a germline TP53 mutation in a patient with a tumor) can be offered both to children and adults in the context of genetic counseling associated to psychological support, to confirm the diagnosis of LFS on a molecular basis. This will allow to offer to the patient a regular clinical review in order to avoid a delay to the diagnosis of another tumor; (ii) the 3 indications for positive testing are : a proband with a tumor belonging to the narrow LFS spectrum and developed before age 36 and, at least, a first- or second-degree relative with a LFS spectrum tumor, before age 46, or a patient with multiple primary tumors, 2 of which belonging to the narrow LFS spectrum, the first being developed before 36 or a child with an adrenocortical tumour; (iii) presymptomatic testing must be restricted to adults; (iv) the young age of onset of the LFS tumors, the prognosis of some tumors, the impossibility to ensure an efficient early detection, and the risk for mutation carriers to develop multiple primary tumors justify that prenatal diagnosis might be considered in affected families.

Authors
Thierry Frebourg, Anne Abel, Catherine Bonaiti-Pellie, Laurence Brugières, Pascaline Berthet, Brigitte Bressac-de Paillerets, Annie Chevrier, Agnès Chompret, Odile Cohen-Haguenauer, Olivier Delatte, Josué Feingold, Jean Feunteun, Didier Frappaz, Jean-Paul Fricke, Paul Gesta, Philippe Jorveaux, Chantal Kalifa, Catherine Lasset, Bruno Leheup, Jean-Marc Limacher, Michel Longy, Catherine Nogues, Daniel Oppenheim, Danièle Sommelet, Florent Soubrier, Claude Stoll, Dominique Stoppa-Lyonnet, Henri Tristant
Service de génétique, CHU et Inserm EMI 9906, Faculté de médecine et de pharmacie, 76183 Rouen.

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Li-Fraumeni syndrome (LFS) is a dominantly-inherited cancer predisposition syndrome associated with a lifetime risk of approximately 90% by age 60 of numerous cancer types, most notably bone and soft-tissue sarcomas, breast cancer, brain tumors, leukemia, and adrenal cortical carcinoma. Classic LFS is defined by 1) A proband with a sarcoma diagnosed before 45 years of age, and 2) a first-degree relative with any cancer under 45 years of age, and 3) a first- or second-degree relative with any cancer diagnosed under 45 years of age or a sarcoma at any age. Prospective. Official Title: Clinical, Epidemiologic, and Genetic Studies of Li-Fraumeni Syndrome. Actual Study Start Date: January 17, 2012. Resource links provided by the National Library of Medicine. OMIM: 6 Li-Fraumeni syndrome (LFS) is a clinically and genetically heterogeneous inherited cancer syndrome. LFS is characterized by autosomal dominant inheritance and early onset of tumors, multiple tumors within an individual, and multiple affected family members. Li-Fraumeni-like syndrome (LFL) is defined as a proband with any childhood cancer, or a sarcoma, brain tumor, or adrenocortical tumor before the age of 45 years, plus a first- or second-degree relative in the same lineage with a typical LFS tumor at any age, and an additional first- or second-degree relative in the same lineage with any cancer before. Clinical and Molecular Studies of Li-Fraumeni Syndrome and TP53-associated Disorders. Recruiting. NCT04367246. 10. Li-Fraumeni syndrome is characterized by the wide variety of cancer types seen in affected individuals, a young age at onset of malignancies, and the potential for multiple primary sites of cancer during the lifetime of affected indiv... Li-Fraumeni syndrome has an autosomal dominant inheritance pattern; therefore, the genetic predisposition for cancer equally affects males and females. Cancer penetrance is 93% for female carriers compared with 73% for male carriers, owing to the increased risk of breast cancer in females. [20] It is estimated that 5-8% of women diagnosed with early-onset breast cancer (at < 30 y) with a negative family history may have a mutation in the TP53 gene. Beyond Li Fraumeni Syndrome: clinical characteristics of families with p53 germline mutations. J Clin Oncol. Li–Fraumeni syndrome is a rare, autosomal dominant, hereditary disorder that predisposes carriers to cancer development. It was named after two American physicians, Frederick Pei Li and Joseph F. Fraumeni, Jr., who first recognized the syndrome after reviewing the medical records and death certificates of 648 childhood rhabdomyosarcoma patients. This syndrome is also known as the sarcoma, breast, leukaemia and adrenal gland (SBLA) syndrome. Li-Fraumeni syndrome (LFS) is a rare familial cancer-predisposing syndrome, which is inherited in an autosomal dominant pattern. LFS patients often present with multiple primary tumors and an early age of onset. The lifetime risk of cancer is estimated to be 73 % for males and nearly 100 % for females. Germline mutations in the tumor suppressor gene, TP53, are associated with LFS and can be detected in more than 60 % of classic LFS families. Clinical genetic testing for TP53 is available for individuals with a suspected or known clinical diagnosis of LFS or a molecular diagnosis based on a his