Condition: Hereditary non-polyposis colon cancer (HNPCC, Lynch syndrome)

Inheritance:

Autosomal Dominant.

Genetic etiology:

Mutation in one of several DNA mismatch repair genes (*MLH1, MSH2, MSH6, PMS2*) and *EPCAM.*

Frequency:

Approximately 1/3,000.

Clinical features:

The hallmark is the development of colorectal carcinoma, with a lifetime risk around 80%. Other associated cancers include endometrial carcinoma, ovarian carcinoma, tumors elsewhere in the gastrointestinal tract, brain tumors (Turcot syndrome).

Management:

Screening for colorectal cancer, as well as endometrial and ovarian cancer in women.

Genetic counseling:

Amsterdam criteria may be used to analyze family history for signs of increased risk of HNPCC. Affected individuals face 50% risk of transmission to any offspring. If tumor tissue is available, testing for microsatellite instability can indicate presence of mismatch repair mutation. Genetic testing is available, but does not detect all possible mutations, making it necessary to offer screening to at-risk relatives if the family mutation is not known.

Human Genetics and Genomics, Fourth Edition. Bruce R. Korf and Mira B. Irons.