Categorizing risk
Family histories can be classified into average, increased (or moderate), or high risk for cancer.

Average risk for cancer
An absence of the red flags and risk factors associated with increased or high risk.

Increased (moderate) risk for cancer
A patient may be at increased risk for cancer because of a family history contribution, personal or lifestyle risk factors, or a combination of the two. Family histories suggestive of increased risk may show familial clustering of cancer but do not meet the criteria for high risk.

Family history:
- One first-degree relative with common cancer at average age only
- One first- and one second-degree relatives or two second-degree relatives with common cancer at average ages only

Personal history: Consider risk factors in
- Medical history
- Patient race or ethnicity
- Reproductive history
- Lifestyle, behaviors, and exposures

High risk for hereditary cancer
Individuals at high risk for a hereditary cancer syndrome typically have one or more of these general family history features:
- 3 or more relatives with similar or related cancers
- 2 generations of cancer cases, and
- At least 1 individual diagnosed at a younger than usual age
- Known hereditary cancer mutation or clinical diagnosis
- Other characteristic features include:
  - At least 1 individual with bilateral or multiple primary tumors
  - At least 1 relative with a rare tumor or rare presentation, or a presentation associated with hereditary cancer
  - Presence of other nonmalignant features
  - Absence of environmental risk factors


Red flags that indicate increased or high risk
- early onset cancer or adenomatous colon polyps
- multiple relatives with the same or associated cancers on the same side of the family
- cancer in the less often affected sex
- bilateral or multifocal disease
- individual with greater than 10 adenomatous colon polyps
- disease in the absence of known risk factors
- ethnic predisposition to certain disorders
Risk assessment tools, calculators, and models

Risk assessment tools and models can help identify patients at increased risk. Different models may provide slightly different risk numbers, depending on the factors considered in the algorithm.

In addition to the models and risk calculators listed below, providers can also look to the literature for empiric risk estimates. This can be particularly helpful when assessing risk levels for a family that demonstrates increased risk based on clustering of cancer.

Breast cancer risk assessment tools

Breast Cancer Risk Assessment Tool from the National Cancer Institute
Considers personal history, reproductive history, and some family history to provide 5-year and lifetime risk estimates for breast cancer.

Breast Cancer Genetics Referral Screening Tool
Collects targeted family history information about breast and ovarian cancer. Screens for the appropriateness of a referral to cancer genetics based on risk level. Also has a patient version.

Summary of validated tools for Hereditary Breast and Ovarian Cancer syndrome risk assessment from the U.S. Preventative Services Task Force
Lists models recommended by USPSTF that estimate risk for Hereditary Breast and Ovarian Cancer syndrome to guide referrals.

For patients: Family HealthLink from the Ohio State University Medical Center
Collects personal and family history information to determine a risk estimate for cancer and cardiovascular disease.

Colon cancer risk assessment tools

Colon Cancer Risk Assessment Tool from the National Cancer Institute
Considers personal history, diet, exercise, and exposures, and some family history to provide 5-year, 10-year, and lifetime risk estimates for colon cancer.

Colorectal cancer genetic risk algorithm from National Coalition of Health Professional Education in Genetics
Collects targeted family history information about colon cancer and other cancers associated with hereditary colorectal cancer syndromes. Provides a risk estimate of average, increased or high risk. Based on guidelines; has not been validated.

For patients: Score against Colon Cancer from the Cleveland Clinic
Collects personal, behavioral, and family history information to determine a risk estimate for colorectal cancer.