Which Risk Model is it?

Risk assessment is recommended by the National Comprehensive Cancer Network and the United States Preventive Services Task Force. In recent years numerous risk assessment models have been developed, based largely on family history and genetics, in efforts to enhance early detection and treatment for high risk patients.

This document shows what the risk models are, as well as what fields in MRS impact the different risk models.

Risk Manager

Based on clinical data entered into MRS, patients are identified as good candidates for increased medical surveillance or hereditary testing based on published guidelines from The National Comprehensive Cancer Network (NCCN, The American Society of Clinical Oncology (ASCO), and The American Society of Breast Surgeons (ASBS).

Tyrer-Cuzick

The Tyrer-Cuzick 10-year and Lifetime Risk Assessment models factor into their calculations information collected from several locations on the patient history page, including Age, Weight and Height, Personal Risk Factors, Family History, Family History of Cancer, Family Risk Factors and Hormone Replacement Therapy. Each factor will be discussed in the order in which it should be collected for efficient data entry

Myriad Prevalence Table

The Myriad BRCA Prevalence Table has been provided by Myriad Genetics, Inc. - the organization which patented the BRCA gene mutation test.

Myriad Risk Flags

This model flags patients that have been identified as good candidates for genetic testing based on their personal or family history. If a patient has any of the below criteria associated with their record in MRS, the Myriad Red Flag will appear red to denote the recommendation for genetic testing.

- History of breast cancer at age 50 or younger
- History of ovarian cancer
- Two primary breast cancers
- Triple negative breast cancer
- Pancreatic cancer along with history of breast and/or ovarian cancer
- Ashkenazi Jewish ancestry along with history of breast and/or ovarian cancer
- Two or more relatives with breast cancer from the same side of the family, one that has occurred under the age of 50
- A family member that is positive for BRCA1 or BRCA2

GAIL

The Breast Cancer Risk Assessment Tool (the Gail model) was designed by researchers at the National Cancer Institute and the National Surgical Adjuvant Breast and Bowel Project as a tool for health care providers. The tool calculates a woman's risk of developing breast cancer within the next five years. It takes into account seven key risk factors for breast cancer.

The NCI Lifetime Model expands the Gail Model to calculate lifetime risk for patients up to 90. The Guidelines from the American Cancer Society recommend annual breast MRI screening for women with a projected lifetime risk of ≥20% based on risk models that use family history. Since MRI screening is costly and has limited specificity, estimates of the numbers of U.S. women with breast cancer risk ≥20% would be useful.

History	Risk Manager	Tyrer-Cuzick	Myriad	GAIL
Patient Age	x	x	x	x
Sex (Calculates only for female)		x		x
Height		x		
Weight		x		
Ethnicity		x		x
Ashkenazi Jewish	x	x	x	
History of breast cancer	x	x	x	x
History of ovarian cancer	x	x	x	
History of colorectal cancer				
History of endometrial cancer				
History of hyperplasia w/o atypia		x		
History of other cancer				
History of high risk lesion		x		x
Previous chest radiation therapy				
Previous chemotherapy				
Genetic testing- patient	x	x		
Genetic testing marker results-patient				
Family history of breast cancer	x	x	x	x
Family history of colorectal cancer				
Family history of prostate cancer				
Family history of ovarian cancer	x	x	x	
Family history of endometrial cancer				
Genetic testing- family	x	x		
Genetic testing marker results-family				
Ovaries removed- family				
First menstrual period at age		x		x
Reproductive phase		x		
Menopause at age		x		x
Ovaries removed-patient				
Hormone replacement therapy		x		
Number of relatives		x		
History	**Risk Manager**	**Tyrer-Cuzick**	**Myriad**	**GAIL**