

## Comprehensive BRCA<sup>®</sup> Analysis (BRCA1 and BRCA2) testing covered when:

PERSONAL HISTORY of Breast Cancer	FAMILY HISTORY (must meet at least 1)
Diagnosed $\leq$ 50 years of age	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
Diagnosed with 2 or more primary breast cancers at any age	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
Diagnosed any age	<ul style="list-style-type: none"> <li>Ashkenazi Jewish ancestry (Multisite 3 testing only unless patient also meets criteria for Comprehensive BRCA<sup>®</sup> Analysis)</li> <li>relative of a known BRCA mutation carrier (single-site only unless patient also meets criteria for Comprehensive BRCA<sup>®</sup> Analysis)</li> <li>1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relative with breast cancer <math>\leq</math> 50</li> <li>1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relative with ovarian cancer</li> <li><math>\geq</math>2 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relatives with breast cancer at any age</li> <li>1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relative with male breast cancer</li> <li>1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relative with bilateral breast cancer at any age</li> </ul>
PERSONAL HISTORY of Ovarian Cancer	FAMILY HISTORY
Diagnosed at any age	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
PERSONAL HISTORY of Male Breast Cancer	FAMILY HISTORY
Diagnosed at any age	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
NO PERSONAL HISTORY of Breast or Ovarian Cancer	FAMILY HISTORY
Unaffected (no personal history of breast or ovarian cancer)	<ul style="list-style-type: none"> <li>relative of a known BRCA mutation carrier (single site only)</li> <li>1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relative with breast cancer <math>\leq</math> 50 and <math>\geq</math> 1 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> degree relatives with breast cancer at any age</li> <li>1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relative with ovarian cancer and <math>\geq</math> 1 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> degree relatives with breast or ovarian cancer at any age</li> <li>1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relative with male breast cancer and <math>\geq</math> 1 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> degree relatives with breast or ovarian cancer at any age</li> <li><math>\geq</math>3 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relatives with breast cancer at any age</li> <li>Ashkenazi Jewish ancestry and <math>\geq</math>1 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relatives with breast cancer at any age (male or female) (Multisite 3 testing only unless patient also meets criteria for Comprehensive BRCA<sup>®</sup> Analysis)</li> <li>Ashkenazi Jewish ancestry and <math>\geq</math>1 1<sup>st</sup>, 2<sup>nd</sup> or 3<sup>rd</sup> degree relatives with ovarian cancer at any age (Multisite 3 testing only unless patient also meets criteria for Comprehensive BRCA<sup>®</sup> Analysis)</li> </ul>

- Breast cancer includes DCIS and invasive carcinoma
- Ovarian cancer includes peritoneal and fallopian tube
- Ashkenazi Jewish patients always have MS3 rather than a single-site for one of the 3 founder mutations

**Comprehensive COLARIS® (*MLH1*, *MSH2*, and *MSH6*) testing covered when:**

<b>PERSONAL HISTORY of Colorectal or Endometrial Cancer</b>	<b>FAMILY HISTORY</b>
Diagnosed $\leq 50$	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
Diagnosed at any age, with MSI or IHC positive tumor	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
<b>PERSONAL HISTORY of any Lynch Syndrome Cancer</b>	<b>FAMILY HISTORY</b>
Diagnosed with a second Lynch syndrome cancer	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
Diagnosed at any age	<ul style="list-style-type: none"> <li><math>\geq 1</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relative with a Lynch syndrome cancer diagnosed at any age</li> <li>relative with a known <i>MLH1</i>, <i>MSH2</i> or <i>MSH6</i> mutation (single-site only)</li> </ul>
<b>NO PERSONAL HISTORY of any Lynch Syndrome Cancer</b>	<b>FAMILY HISTORY</b>
Diagnosed with $\geq 1$ colorectal adenomas under age 40	<ul style="list-style-type: none"> <li><math>\geq 1</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relative with a Lynch syndrome cancer diagnosed at any age</li> </ul>
Unaffected (no personal history of any Lynch syndrome cancer)	<ul style="list-style-type: none"> <li><math>\geq 2</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relatives with a Lynch syndrome cancer and <math>\geq 1</math> diagnosed under age 50</li> <li>relative with a known <i>MLH1</i>, <i>MSH2</i> or <i>MSH6</i> mutation (single-site only)</li> </ul>

Lynch syndrome cancers/tumors include the following:

- colorectal
- endometrium/uterus
- ovarian
- small intestine/bowel
- duodenum
- jejunum
- gastric/stomach
- ureter
- renal pelvis
- sebaceous adenoma/sebaceous carcinoma
- glioblastoma
- medulloblastoma
- brain tumor

**Comprehensive COLARIS AP<sup>®</sup> (w/MYH panel) covered when:**

<b>PERSONAL HISTORY of <math>\geq 10</math> colorectal adenomas</b>	<b>FAMILY HISTORY</b>
Diagnosed at any age	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
<b>PERSONAL HISTORY of Colon Cancer</b>	<b>FAMILY HISTORY</b>
Diagnosed at any age	<ul style="list-style-type: none"> <li><math>\geq 1</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relative with <math>\geq 10</math> adenomas</li> <li><math>\geq 1</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relative with an FAP/MAP-related tumor/clinical feature</li> <li>relative with known APC mutation (Single-site only)</li> </ul>
Diagnosed at any age with $\geq 6$ colorectal adenomas	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
Diagnosed with an additional FAP/MAP-related tumor/clinical feature	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
<b>NO PERSONAL HISTORY of Colorectal Adenomas or Colorectal Adenomas</b>	<b>FAMILY HISTORY</b>
Unaffected (no personal history)	<ul style="list-style-type: none"> <li>relative with known APC mutation (single-site only)</li> <li><math>\geq 2</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relatives with <math>\geq 10</math> colorectal adenomas</li> </ul>
Diagnosed with a desmoid or fibroma	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>

FAP/MAP-related tumors include:

- desmoid
- fibroma
- epidermoid cyst
- osteoma
- CHRPE
- hepatoblastoma
- duodenal
- duodenal polyps
- ampula/periampulary/ampula of Vater

**MYH sequencing covered only after Comprehensive COLARIS AP<sup>®</sup> at MGL or elsewhere when:**

<b>PERSONAL HISTORY of <math>\geq 10</math> colorectal adenomas</b>	<b>FAMILY HISTORY</b>
Diagnosed at any age	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
<b>PERSONAL HISTORY of Colon Cancer</b>	<b>FAMILY HISTORY</b>
Diagnosed at any age with $\geq 6$ colorectal adenomas	<ul style="list-style-type: none"> <li>no further family history needed</li> </ul>
<b>NO PERSONAL HISTORY of Colorectal Adenomas or Colorectal Adenomas</b>	<b>FAMILY HISTORY</b>
Unaffected (no personal history)	<ul style="list-style-type: none"> <li>1<sup>st</sup> or 2<sup>nd</sup> degree relative with known MYH mutation</li> </ul>

**MELARIS® (p16) testing covered when:**

<b>PERSONAL HISTORY of Melanoma</b>	<b>FAMILY HISTORY</b>
Diagnosed at any age	<ul style="list-style-type: none"> <li>• <math>\geq 1</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relative with melanoma</li> <li>• <math>\geq 1</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relative with pancreatic cancer</li> <li>• relative with a known mutation (Single-site only)</li> </ul>
Diagnosed with a 2 <sup>nd</sup> primary melanoma	<ul style="list-style-type: none"> <li>• no further family history needed</li> </ul>
Diagnosed with pancreatic cancer	<ul style="list-style-type: none"> <li>• no further family history needed</li> </ul>
<b>PERSONAL HISTORY of Pancreatic Cancer</b>	<b>FAMILY HISTORY</b>
Diagnosed at any age	<ul style="list-style-type: none"> <li>• <math>\geq 1</math> 1<sup>st</sup> or 2<sup>nd</sup> degree relative with melanoma</li> <li>• relative with a known mutation (Single-site only)</li> </ul>
Diagnosed with melanoma	<ul style="list-style-type: none"> <li>• no further family history needed</li> </ul>
<b>NO PERSONAL HISTORY of Melanoma or Pancreatic Cancer</b>	<b>FAMILY HISTORY</b>
Unaffected (no personal history)	<ul style="list-style-type: none"> <li>• relative with a known mutation (Single-site only)</li> </ul>

**TheraGuide 5-FU™ testing covered when:**

<b>PERSONAL HISTORY of Any Cancer</b>	<b>FAMILY HISTORY</b>
Being considered for, or already having, 5-FU-related chemotherapy	<ul style="list-style-type: none"> <li>• no further family history needed</li> </ul>

**OnDose™ testing covered when:**

<b>PERSONAL HISTORY of Any Cancer</b>	<b>FAMILY HISTORY</b>
Patient currently receiving an infusional 5-FU based chemotherapy	<ul style="list-style-type: none"> <li>• no further family history needed</li> </ul>