**BRIP1 Mutations**

**What You Should Know About BRIP1 Mutations**

Individuals with one BRIP1 mutation have an increased risk for ovarian cancer. There is some evidence suggesting that females with one BRIP1 mutation may also have an increased risk for breast cancer; however, this data is less clear at this time. When an individual inherits two BRIP1 gene mutations (one from each parent), this causes a syndrome called Fanconi anemia (FA).

**Cancer Risks Associated with a BRIP1 Mutation**

- **Ovarian cancer:** Women with a BRIP1 mutation have a 5.8-18% lifetime risk of ovarian cancer.
- **Breast cancer:** There is a potential increased risk for female breast cancer (including triple negative breast cancer) in women with a BRIP1 mutation. However, the specific lifetime risk is not known at this time.
- **As BRIP1 is a more recently discovered gene,** other cancer risks and cancer risks in males with a BRIP1 gene mutation are unknown at this time.

**Risks to Family Members**

Mutations in the BRIP1 gene are inherited in an autosomal dominant fashion. This means that children, brothers, sisters, and parents of individuals with a BRIP1 mutation have a 1 in 2 (50%) chance of having the mutation as well. Individuals with a single BRIP1 mutation may or may not develop cancer. Both males and females can inherit a familial BRIP1 mutation and can pass it on to their children.

When an individual inherits two BRIP1 gene mutations (one from each parent), this causes a syndrome called Fanconi anemia (FA). FA is associated with physical abnormalities, bone marrow failure, childhood leukemia and other cancers.

**Managing Cancer Risks**

The National Comprehensive Cancer Network (NCCN v1.2020) recommends the following management for individuals with a BRIP1 mutation.

- **Ovarian cancer:** Consider risk-reducing salpingo-oophorectomy (RRSO) at age 45-50 years or earlier based on ovarian cancer family history. Insufficient evidence exists to recommend an optimal age for RRSO.
- **Breast cancer:** Insufficient evidence to recommend modified breast cancer risk management based on BRIP1 mutation status alone. An individual’s personal and family history should be considered in developing an appropriate surveillance plan.

_Last updated 1/9/2020_