UT Southwestern Harold C. Simmons Comprehensive Cancer Center | NCI Designated Comprehensive Cancer Center

# *RAD51C* Mutations

## What you should know about *RAD51C* mutations

Individuals with a *RAD51C* mutation have an increased risk to develop ovarian cancer, and possibly female breast cancer. There is limited information regarding the lifetime cancer risks for individuals with a *RAD51C* mutation.

## Cancer risks associated with a *RAD51C* mutation

- Females with a *RAD51C* mutation have an increased risk to develop ovarian cancer. The specific lifetime risk for ovarian cancer is estimated to be between 5-9% compared to the general population risk of 1.5%.
- A *RAD51C* mutation may be associated with an increased risk to develop female breast cancer, although information is limited at this time.
- Rarely, children inherit a *RAD51C* mutation from both parents. Children with two *RAD51C* mutations have Fanconi Anemia, which causes physical abnormalities, childhood leukemia and other cancers.

## Risks to family members

Mutations in the RAD51C gene are inherited in an autosomal dominant manner. This means that children, brothers, sisters, and parents of individuals with a RAD51C mutation have a 1 in 2 (50%) chance of having the mutation as well. Individuals with a RAD51C mutation may develop one cancer, more than one cancer, or none at all. Additionally, individuals with two RAD51C mutations (one from each parent) have Fanconi Anemia.

## Managing cancer risks

The following surveillance is recommended by the National Comprehensive Cancer Network (NCCN v2.2020):

- Consideration of risk reducing salpingo-oophorectomy (RRSO) for women with a *RAD51C* mutation at age 45-50 (or earlier based on a family history of early onset ovarian cancer).
- Current guidelines suggest that there is insufficient evidence for breast cancer interventions based on a *RAD51C* mutation alone; an individual's personal and family history should be considered in developing an appropriate screening plan.

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UT Southwestern Harold C. Simmons Comprehensive Cancer Center | 2201 Inwood Rd., Dallas, Texas 75390-9323
Phone: (214) 645-2563 | Fax: (214) 645-2562 | utswmed.org/cancergenetics