

## What you should know about PALB2 mutations

Individuals with a PALB2 mutation have an increased lifetime risk for breast, pancreas, and possibly other cancers. Exact lifetime cancer risks for individuals with one mutation in this gene are not fully understood, but more specific information becomes available with ongoing research. The PALB2 mutation works in conjunction with other cancer susceptibility genes to modify risk. Individuals with two PALB2 mutations have a type of Fanconi anemia which is associated with childhood cancer risks.

## The risk for cancer associated with PALB2 mutations

- Women have a 2-4 fold increased lifetime risk of **breast cancer** compared to the general population risk of 12%. Family history has recently been found to impact breast cancer risk. If a woman with a PALB2 mutation has strong family history of breast cancer (2 or more relatives), her lifetime breast cancer risk could be as high as 58%. If a woman with a PALB2 mutation does not have a family history of breast cancer, her lifetime breast cancer risk was estimated to be 33%. PALB2 mutations are also associated with increased risk for contralateral breast cancer (cancer in the opposite breast).
- Men may have an increased risk for **breast cancer** compared to the <1% risk in the general population. Exact risk is unclear, but PALB2 mutations have been detected in families with male breast cancer.
- Women and men have an increased lifetime risk for **pancreatic cancer** compared to the general population risk of 1-2%. The magnitude is unknown at this time.

## The risks to family members

Mutations in the PALB2 gene are inherited in an autosomal dominant fashion. This means that children, brothers, sisters, and parents of individuals with a PALB2 mutation have a 50% chance of having the mutation. Individuals with a PALB2 mutation may develop one cancer, more than one cancer, or none at all.

## Managing the Risk

There are currently no formal management guidelines specific to individuals with PALB2 mutations. However, the following surveillance has been suggested based on other guidelines for comparable increased risks.

### Breast Cancer

- Breast self-awareness beginning at age 18 (for women and men)
- Clinical breast exams every 6-12 months beginning at age 30
- Annual mammography and breast MRI beginning at age 30, or 10 years earlier than the youngest diagnosis of breast cancer in the family
- Consider risk reducing options including prophylactic mastectomy or chemoprevention medication

**Pancreatic Cancer**

- No specific screening guidelines for pancreatic cancer – consider research protocols for screening modalities
- Consider imaging techniques including endoscopic ultrasonography (EUS) and/or magnetic resonance cholangiopancreatography (MRCP)