RESEARCH STUDY | Molecular Mechanisms Involved in Cancer Predisposition (IRB 8458)

STUDY SNAPSHOT

Why was this study started?

- In 2007, physicians thought that PTEN hamartoma tumor syndrome (PHTS), which is characterized by germline (heritable) mutations in the tumor suppressor gene *PTEN,* results in a higher risk of cancer. However, it was not known if this observation was consistently true or which organs may be affected by cancer.
- When Dr. Eng established the PTEN Multidisciplinary Clinic and her research lab at Cleveland Clinic, she began this study with the overarching goal of understanding the genetic changes that increase an individual's chances of developing cancer. There are currently 6,995 participants from around the nation and the world.

What has this study found so far?

- This study has confirmed that individuals with PHTS have a higher lifetime risk of cancer compared to the general population.
- Cancers tend to occur in the breasts, thyroid, kidneys, endometrium, colon and skin. These findings led to the establishment of national PHTS-specific surveillance and clinical management guidelines.
- Unexpectedly, clinical observations and subsequent studies found that autism spectrum disorder (ASD) and other neurodevelopmental (NDD) features are also components of PHTS.

What other questions is this study aiming to answer?

- Do PHTS children with ASD/NDD have similar cancer risks as PHTS adults without ASD/NDD?
- What are the cancer and ASD/NDD risks for each individual (versus group) with PHTS?

What is next for this study?

- Many participants of this study were children or young adults when they were enrolled. At that time, it was not possible to know if they would develop cancer.
- The research team is now conducting a 10-year update study to reevaluate cancer risks in all of the study participants.

Is this study currently enrolling new patients?

- Yes. For more information, please contact the PTEN clinical research team at pten@ccf.org.

Protocol #8458 Narrative Description and Eligibility Criteria

The aim of research protocol 8458 is to learn more about susceptibility to cancer. The goal is to characterize the genetic changes that may increase an individual's chances of developing cancer. The researchers are also looking to understand the relationship between microbes, cancer and autism spectrum disorder. Charis Eng, MD, PhD, is the principal investigator.

This study is being conducted at two sites: Cleveland Clinic and Cleveland Clinic Florida. There currently are 6,995 patients enrolled.

This study requires a minimum of one visit to an outpatient lab, hospital or doctor's office. Participants must provide a detailed family history and medical records. The following samples may be requested: blood/cheek cell, saliva, urine, fecal and previously obtained genetic material (i.e., tumor tissue, DNA/RNA, cell lines).

Beginning in 2020, participants who have not been in contact with the study team for at least three years will be contacted to update their histories. The study team hopes to contact participants at least every five years to record any new health issues or changes to previously documented issues.

Eligible participants include anyone with a personal or family history of

- Cowden syndrome or other PTEN hamartoma tumor spectrum condition
- Colorectal cancer and/or colorectal polyps
- Tumors, particularly of the head and neck
- Uterine/endometrial cancer
- Breast cancer
- Thyroid dancer
- Any type of cancerous or precancerous condition or genetic condition related to cancer-causing gene
- Family history of cancer or cancer-causing condition
- Autism spectrum disorder

Decision to participate is voluntary and may be withdrawn at any time. Assuming an individual meets the study criteria, enrollment involves giving consent over the phone or in person, obtaining a referral from a provider (if an external patient) and providing medical records and requested samples.

Participants and their families may benefit from genetic research studies now or in the future. If a finding in a research study may have clinical relevance to participants, they can be contacted to arrange genetic counseling and testing.

If you are interested in enrolling in this study, please contact pten@ccf.org.