Prevention Matters

| FOX CHASE CANCER CENTER RISK ASSESSMENT PROGRAM PUBLICATION | SPRING/SUMMER 2024 |

Oncofertility: Keeping Your Reproductive Future Open

By Yael Freiberg , MS, LCGC and Devora Schapiro , MSPAS, PA-C

Getting diagnosed with cancer can affect many aspects of someone's life. But for people who are in or just entering their reproductive years, it can have major impacts on whether and how they have children. Oncofertility—the preservation of fertility in those affected with cancer and undergoing treatment—is an important yet sometimes overlooked aspect of cancer care, especially for younger people.

Why is oncofertility important?

Many people of all genders want to have children. And while some will choose to build their families through adoption, others want to be able to have biological children and/or have the experience of carrying a pregnancy. Using assisted reproductive technologies lets people with cancer keep their family planning options open. These technologies can also be useful for people with genetic mutations that cause an increased risk for cancer who want to safeguard their fertility in case they develop cancer in the future.

How does cancer affect fertility?

Some cancers affect the organs that produce the sperm and eggs, that support a pregnancy, and that control the hormones that regulate fertility. These organs include the uterus, ovaries, fallopian tubes, testes, prostate, thyroid, pituitary gland, and more. Cancers in these organs may cause them to not work properly anymore. Different kinds of cancer treatments can also impact these organs' function. Surgery on reproductive organs or on certain hormone-producing glands can impact a person's ability to produce sperm, release eggs, and carry a pregnancy. Chemotherapy and radiation can temporarily or permanently alter the quality of sperm and eggs. Certain types of medications can change hormone levels and the ways these organs work, further impacting the likelihood of pregnancy.

Not only can cancer affect the ability to conceive and bear children, but it can also affect people's timelines for when they have children. Going through treatment can delay when someone starts trying for a baby, since some treatments can damage sperm and eggs or a developing fetus. Conversely, if someone's treatment will cause infertility or will permanently alter how they can have children, that person may feel rushed into making decisions about their reproductive options and whether they even want to have children before they are truly ready to decide.

What are some options for preserving fertility?

- Freezing sperm and eggs
- Ovarian tissue banking (freezing)
- In vitro fertilization and freezing of embryos
- With IVF, there is also the option to do preimplantation genetic testing (PGT). PGT tests embryos for specific genetic mutations and allows people to select and only implant embryos that do not have the mutation. This can be used when someone has a genetic mutation that increases cancer risks or causes some other genetic health condition.
- Use of donor sperm and/or donor eggs
- Surrogacy

What are some considerations when selecting options for preserving one's fertility?

- Some of the above technologies are not compatible with certain types of cancers or with their recommended treatments (for example, hormone therapy for breast cancer).
- Some of these options can take 2-3 weeks to complete and need to be done before treatment begins, but treatment might need to start right away to be most effective.
- Not everybody has access to local fertility clinics.
- Some of these technologies can be very expensive and may not be covered by insurance. There are grants and discount programs available, but not everybody qualifies for them.

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FOX CHASE CANCER CENTER
TEMPLE HEALTH

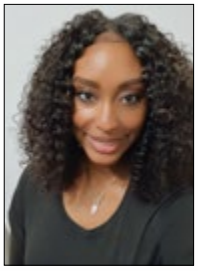
How can I learn more about oncofertility and my reproductive options?
At Fox Chase, the Sharon Schwartz Oncofertility Program is a resource for patients looking for information about their reproductive options. It is a specialized program run by a multidisciplinary team of clinicians, nurse navigators, social workers, and other providers. We can discuss fertility preservation options with you and connect you to local fertility centers that will provide further information and reproductive care.

Having cancer doesn't have to mean you can't have children in the future. Ask your doctors about how you can keep your reproductive future open.

Meet Our New Team Members

Dylane Wineland, Genetic Counselor

I'm thrilled to have the opportunity to join the Risk Assessment Program at Fox Chase as a genetic counselor. I graduated with my Master's in Genetic Counseling from Arcadia University in 2020 and have been working as a cancer genetic counselor since. I am originally from the Midwest – I grew up in Illinois and moved to Iowa for my undergraduate degree where I obtained my Bachelor's in biology at the University of Iowa (Go Hawkeyes)! My interest in genetics stems from the cell biology research I did as an undergraduate and after as a post-Bach research assistant. Throughout my career, my passion for helping to empower individuals and their families with the knowledge and support needed to make informed decisions about their health has only continued to grow. Now, as a member of the Fox Chase team, I am thrilled to contribute to providing comprehensive and integrative care to our patients. In my free time, I enjoy spending quality time with my fiancé and dog Wally, exploring Philadelphia's restaurant scene, and seeing live music.



Janne Liggons, Clinical Genetic Intake Coordinator

It is an honor to be here in the Clinical Genetics Department at Fox Chase as the newest Intake Coordinator. I bring extensive Epic knowledge to the team as I previously took superuser classes in Bensalem, PA by way of Jefferson Abington Hospital where I spent the last 4 years working in the OB/GYN clinic. Prior to Abington I spent 10 years as a pharmacy technician working in retail and a hospice mail order pharmacy. Being in the healthcare field gives me a sense of purpose, I enjoy the fulfillment and satisfaction in helping others and making a positive impact on their lives. I am so excited to learn and grow within this department, thank you for having me.
"The best way to find yourself is to lose yourself in the service of others" – Mahatma Gandhi

RECENT PUBLICATION FROM THE BREAST CANCER FAMILY REGISTERY (BCFR):

Risk Factors for Developing Both Primary Breast and Primary Ovarian Cancer: A Systematic Review

Women with breast cancer have a higher risk of developing a primary ovarian cancer, and women with ovarian cancer have a higher risk of developing a primary breast cancer. (A primary cancer is a new cancer and is not a recurrence or metastasis of an earlier cancer.) In this article, Dr. Jennifer Ferris and colleagues analyzed the results of 23 studies on the risk of developing both primary breast cancer and primary ovarian cancer. Here are their findings:

Among women with breast cancer, the study found a lower risk of developing a primary ovarian cancer in several groups:

- Women who had radiation therapy and/or hormone therapy had a lower risk.
- Women with BRCA2 mutations had a lower risk than those with BRCA1 mutations.
- Women with estrogen-receptor and/or progesterone-receptor positive (ER+/PR+) breast cancer had a lower risk than women with estrogen-receptor and progesterone-receptor negative (ER-/PR-) breast cancer.

Among women with breast cancer, the study found a higher risk of developing a primary ovarian cancer in these groups:

- Women with a family history of breast/ovarian cancer
- Women with triple negative breast cancer, as opposed to luminal breast cancer
- Women with higher grade breast tumors (Tumor grade refers to how much cancer cells differ from normal cells. The higher the tumor grade, the more different the cancer cells are from normal cells.)

Among women with ovarian cancer, the study found a higher risk of developing a primary breast cancer among women with a family history of cancer.

In conclusion, tumor characteristics, genetic factors, and familial factors are associated with the risk of developing a primary ovarian cancer in women with breast cancer, and the risk of developing a primary breast cancer in women with ovarian cancer. These results could help clinicians in decision-making with breast and ovarian cancer patients, including risk-reducing strategies.

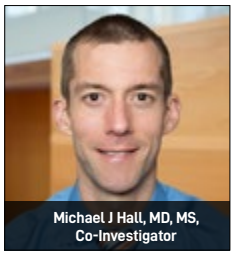
Read the full article here: https://pubmed.ncbi.nlm.nih.gov/37541535/

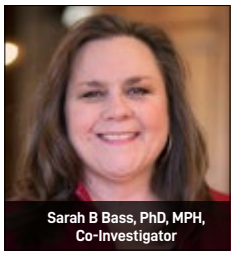
RESEARCH NEWS

How Black/ African American cancer patients understand tumor genomic profile testing: the role of medical mistrust, provider communication, and family support.

Researchers from Fox Chase Cancer Center and the Temple University College of Public Health have published more results from the E-IMPART study sponsored by a 5-year Health Equity Grant from the American Cancer Society. The aim of the current study was to explore Black/African American cancer patients' perceptions of genetic testing, and specifically tumor genomic profile (TGP) testing and how patients make decisions about their genetic health information.


Caseem C. Luck, MS, first author of the article


Michael J Hall, MD, MS, Co-Investigator


Sarah B Bass, PhD, MPH, Co-Investigator

TGP testing examines genes in patients' tumor to identify targets for cancer treatments but can also uncover hereditary information that can be passed from parents to children. Most patients are unprepared to make complex decisions related to this information. Black/AA cancer patients are especially at risk because of generally lower health literacy, higher levels of medical mistrust, and lower awareness and knowledge of genetic testing. But little is known about their preferences regarding their genetic information.

For the current study, a total of 33 Black/AA cancer patients participated in five separate focus groups conducted at Fox Chase and Temple University Hospital. Patients discussed various issues related to TGP testing, including medical mistrust, cultural beliefs, pros and cons of genetic testing, sharing information with family, and relationship with healthcare providers.

The focus groups' discussions revealed several interesting insights:

- Attitudes towards genetic testing were positive, especially when patients had a positive relationship with their oncologist.
- Patients with high levels of medical mistrust were cautious with their provider, often seeking information independently.
- Participants' mistrust toward the medical system was rooted in historical medical mistreatment of who are Black/AA and prior individual experiences with the medical system. Fear of experimentation, concerns of potential medical malice, low-health literacy, and race-based discrimination were mentioned.
- Genetic testing results can be empowering but overwhelming when discussing if participants wanted to know their hereditary risk from TGP test results.
- Patients overall wanted to be active participants in treatment decisions.
- Many participants were uncertain as to whether they would communicate genetic testing results with other family members, although most said that if results showed a hereditary risk, they would share their result.
- In the setting of an unsupportive family, some participants noted they turned to religion and faith-based support groups that were noted to be important support systems to help cope with their diagnosis and ongoing cancer treatment.

These data collected from focus group discussions provided new insights into how to address knowledge gaps, and elucidate important potential barriers to communicating with patients about TGP results.

Thank you to all patients at Fox Chase and Temple University Hospital who participated in the focus groups, completed surveys, and now are testing a culturally competent web-based decision support tool (Gene Pilot) developed by our team in hopes of reducing the cancer health disparity gap.

Read full article here: https://pubmed.ncbi.nlm.nih.gov/38366313/

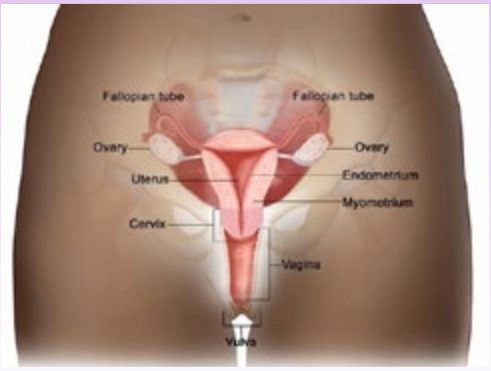
We are pleased to announce that the Department of Clinical Genetics will be expanding our reach with plan to offer genetic counseling/testing and high-risk breast/ovarian clinical services at the **Temple Health - Chestnut Hill Hospital**, located at 8835 Germantown Ave, Philadelphia 19118, in the summer of 2024. Weekly genetic counseling clinics will be provided by Dylane Wineland, MS, LCGC and Corinne Zrada, MS, LCGC and high-risk breast/ovarian clinical services will be provided by Devora Schapiro, MSPAS, PA-C. This supports our departmental mission to provide genetic counseling and high-risk clinical services to individuals with an increased risk of cancer with ultimate goal of prevention of cancer development.

We will continue to offer weekly appointments at our Buckingham, East Norriton, Fox Chase Cancer Center, and Temple University Hospital locations. To schedule an appointment for any of these sites, please call our intake team directly at 877-627-9684.

"She Had a Female Cancer"
Common Gynecological Cancer Misconceptions

By Chau Nguyen, MS, CGC and Corinne Zrada, MS, LCGC , Genetic Counselors

Gynecological cancers, or cancers of the female reproductive organs such as the fallopian tubes, ovaries, uterus, cervix, vagina, and/or vulva are often misinterpreted for one another. The majority of gynecological cancers are thought to be sporadic, occurring due to a mixture of age and exposures. However, gynecological cancers can also be hereditary, or passed on from parent to child. Not all gynecological cancers are made the same, and some cancers are more likely to be hereditary than others. Understanding the difference between gynecological cancers can make a significant impact during a genetic counseling session from the hereditary cancer syndromes discussion to NCCN (National Comprehensive Cancer Network) eligibility criteria for testing and insurance coverage.



Three gynecological cancers commonly discussed with genetic counselors include cervical, uterine (or endometrial), and ovarian cancer. While these three cancers are found in relatively the same place in the female body—surprisingly, their genetic association, symptom presentation, screening, and treatment management can vary widely.

Which is Which?

Cervical Cancer	Uterine Cancer	Ovarian Cancer
Screening Tool for Detection: Pap Smear	**Screening Tool for Detection:** No routine screening recommended for the general population. Transvaginal ultrasounds with random biopsies do exist and can be considered, however limitations such as false positive and negative rates have to be considered. These options should be carefully considered in discussion with a gynecologist.	**Screening Tool for Detection:** No routine screening recommended for the general population. Transvaginal ultrasounds and CA-125 blood screening do exist and can be considered, however limitations such as false positive and negative rates have to be considered. These options should be carefully considered in discussion with a gynecologist.
Common Symptoms: None, vaginal bleeding, pelvic pain	**Common Symptoms:** Abnormal bleeding/spotting, pelvic pain	**Common Symptoms:** None, vague symptoms such as abdominal bloating/pain, frequent urination, feeling full quickly
Treatment Options: Cryotherapy/"Freezing"; LEEP; Surgery; Chemotherapy; Radiation	**Treatment Options:** Surgery; Radiation; Targeted Therapy	**Treatment Options:** Surgery; Chemotherapy; Targeted Therapy; Radiation
Genetic Link: Not typically associated with a hereditary mutation. Most cervical cancer is caused by HPV infections.	**Genetic Link:** 10% of cases can be genetic. Can be associated with Lynch Syndrome (MSH2, MSH6, MLH1, or PMS2 mutations) or Hereditary Breast & Ovarian Syndrome (BRCA1 and BRCA2 mutations).	**Genetic Link:** 15-20% of cases can be genetic. Can be associated with Lynch Syndrome (MSH2, MSH6, MLH1, or PMS2 mutations) or Hereditary Breast & Ovarian Syndrome (BRCA1 and BRCA2 mutations). Can also be associated with ATM, BRIP1, PALB2, RAD51C, or RAD51D mutations.
Insurance coverage for testing: Family history of cervical cancer typically does not meet NCCN criteria for genetic testing and may not be covered by insurance.	**Insurance coverage for testing:** Family history of uterine cancer can be used to meet NCCN criteria for genetic testing and may be covered by insurance.	**Insurance coverage for testing:** Family history of ovarian cancer can be used to meet NCCN criteria for genetic testing and may be covered by insurance.

Learning what type of female cancer a family member has can be difficult, however one of the first steps in learning about cancer history could be asking family members what they know. Asking questions such as the types of cancers someone had, or the age they were diagnosed, or how their cancer was discovered, or treated, can be useful in differentiating between different gynecological cancers.

If you or someone you know has a family history of gynecological cancers and are interested in learning more, we encourage you to contact the Risk Assessment Program at Fox Chase Cancer Center. Our office can be reached at 877-627-9684.

The American Cancer Society aims to reduce lung cancer deaths with updated screening recommendations.

The American Cancer Society (ACS) released an update of its lung cancer screening guideline to help reduce the number of people dying from the disease due to smoking history. The new guideline recommends yearly screening for lung cancer for people aged 50 to 80 years old who smoke or formerly smoked and have a 20-year or greater pack-year history. The recommended annual screening test for lung cancer is a low-dose computed tomography scan (also called a low-dose CT scan, or LDCT). The guideline, last updated in 2013, is published in the ACS flagship journal, CA: A Cancer Journal for Clinicians.

About Lung Cancer

Lung cancer is the overall leading cause of cancer death in the United States and is the second most frequently diagnosed malignancy in both men and women. In 2023, ACS researchers estimated 238,340 new cases of lung cancer (117,550 in men and 120,790 in women) will be diagnosed with about 127,070 deaths from the disease (67,160 in men and 59,910 in women). Anyone at any age can get lung cancer. However, lung cancer mainly occurs in older people, as most people diagnosed with the disease are aged 65 or older.

The updated guideline report is part of the ongoing guideline development process by ACS scientists. The ACS monitors medical and scientific literature for new evidence that may support a change in current guidelines or the development of a new guideline and information about screening that should be conveyed to clinicians and target populations.

In addition, it's important for people who are going to be screened to consult with their doctor about the potential benefits, limits, and harms of yearly screening with LDCT scans. People who still smoke should receive counseling to help them quit.

For more information visit cancer.org

American Cancer Society

How does the new guideline differ from the previously published guideline?		
Eligibility criteria	**Previous Recommendations**	**New Recommendations**
Age for eligibility	55-74 years	50-80 years
Pack-year (PY) history	30+ PY	20+ PY
Years since quitting (YSQ)	≤ 15 YSQ	No Longer Required

TOGETHER FACING MELANOMA AND SKIN CANCER 2024

Date & Time:
Wednesday, May 08, 2024
05:30 pm to 08:00 pm

Fox Chase Cancer Center Cafeteria
Center Building
333 Cottman Avenue
Philadelphia, PA 19111

Please call 215-728-2745.

This is a free event, but registration is required.

Patients and caregivers will find support and camaraderie at Together Facing Melanoma and Skin Cancer, a free educational workshop. The program will feature a panel of Fox Chase clinicians discussing promising treatments for melanoma and skin cancer. Patient advocacy groups, industry partners, and Fox Chase special services will also participate in the event by providing helpful resources.

MAN 2 MAN

Are you at risk for prostate cancer?

Prostate cancer is the second leading cause of cancer deaths in American men. Men with a family history of prostate cancer and African-American men are at increased risk.

RISK FACTORS FOR PROSTATE CANCER

Age: The disease is more common in men over age 50, but there is still risk for men under age 50.

Race: Prostate cancer occurs more often in African-American men, who are also more than twice as likely to die from the disease as white men.

Family History: Having a father or brother with prostate cancer more than doubles a man's risk of the disease. The risk is even higher for men with several affected relatives, particularly if those relatives were young at the time of diagnosis.

Fox Chase Cancer Center's Prostate Cancer Risk Assessment Program (PRAP) is available for men who are at high risk for prostate cancer.

WHO CAN PARTICIPATE?

Men 35-69 years of age:

- with at least one first-degree relative (such as brother or father) with a diagnosis of prostate cancer or
- with at least two second-degree relatives with prostate cancer (such as two uncles) on the same side of the family (either paternal or maternal) or
- who have tested positive for BRCA1, BRACA2, Lynch Syndrome, ATM, PALB2, CHEK2 or other gene mutations or
- who are African-American regardless of family history

AVAILABLE SERVICES FOR AT-RISK MEN

- Screening and follow-up to detect prostate cancer at the earliest and most curable point
- Feedback regarding diet and lifestyle changes that may affect prostate cancer risk
- Evaluation of family history of cancer for a thorough risk assessment
- Discussion of current genetic studies for prostate cancer and other cancers
- Opportunity to participate in prevention research focused on identifying genetic markers for prostate cancer
- Opportunity for clinical genetic testing for participants who are eligible

For more information or to schedule an appointment, call 1-877-627-9684.

Five Signs of Colorectal Cancer You Shouldn't Ignore – Even if You're a Younger Adult

In the recent Cancer Facts & Figures 2024 report from the American Cancer Society (ACS), researchers revealed a stark increase in colorectal cancer (CRC) incidence among Americans under the age of 55. In fact, in just two decades, CRC has moved up from being the fourth leading cause of cancer death in people under 50, to first in men and second in women. The ACS urges people to be on the lookout for five of the top potential warning signs of CRC:

1. A change in bowel habits such as diarrhea, constipation, or narrowing of the stool that lasts more than a few days
2. Blood present in the stool or the toilet
3. Abdominal pain or cramping
4. Unexplained, sudden weight loss
5. Fatigue that does not go away or that keeps coming back

Many symptoms of colorectal cancer can appear similar to symptoms brought about by other issues, such as infection, hemorrhoids, or irritable bowel syndrome. It's critical to speak with your doctor and get checked if you are experiencing any of the symptoms above.

Reducing your risk: Most CRCs develop from colon polyps. Getting regular screening tests is one of the most powerful tools for preventing CRC because it can find polyps that can be removed before they turn into cancer. Currently, only about 20% of individuals age 45-59 receive CRC screenings. The ACS recommends people at average risk start regular screening at age 45. Several test options are available for CRC screening, including stool-based at-home tests and visual exams such as a colonoscopy. Those who have a family history of CRC or who have family members who have had adenomatous polyps (the kind of polyps that can become cancer) are also linked to a higher risk of CRC. Individuals with a family history or genetic predisposition should begin screening before age 45 years to reduce risk.

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Dr. Hall and genetic counselors are visiting a giant colon exhibit at Fox Chase

Several lifestyle factors such as body weight, physical activity, diet, and alcohol and tobacco use can also play a role in your risk for CRC:

- **Weight:** Maintaining a healthy weight may help lower your risk, as being overweight or obese increases the risk of colorectal cancer for both men and women.
- **Physical activity:** Engaging in regular exercise and increasing the overall amount and intensity of your physical activity can lower the risk of colorectal cancer.
- **Diet:** Studies have shown that diets high in vegetables, fruits, and whole grains, and low in red and processed meats, likely lower CRC risk. Several studies have also found higher risk of CRC with increased alcohol intake, specifically in men.
- **Smoking:** Long-term smoking has been shown to lead to an increased risk of colorectal cancer.

For more information on CRC detection and diagnosis, visit **cancer.org**.

Summer Shrimp and Pineapple Stir Fry

Stir-fries are quick, versatile, and pack a variety of flavors and textures into a one-pot meal. This shrimp and pineapple version features a colorful variety of snap peas, pineapple, basil, and bell pepper. You can switch up the vegetables for any you have on hand and add a different protein like chicken or tofu. No matter how you mix it up, it cooks in about 15 minutes, making it a great, healthy option for a busy weeknight.

Ingredients:

Stir Fry

- 2 tsp. olive oil, divided
- 1.5 lbs. raw shrimp, peeled and deveined (can be fresh or thawed from frozen)
- 2 large heads of broccoli, chopped
- 2 cups fresh snap peas
- 1 red bell pepper, chopped
- 2 cloves garlic, minced
- 1 8 oz. can sliced water chestnuts
- 1/2 medium whole pineapple, chopped
- 1 small bunch or about 12 basil leaves, thinly sliced
- 2 tsp. sesame seeds

Teriyaki Sauce

- 1/4 cup reduced sodium tamari
- 1/2 cup cold water
- 1 Tbsp. lime juice
- 2 Tbsp. finely grated ginger (or 1 tsp powdered ginger)
- 2 tsp. cornstarch
- 1 tsp. honey (can sub agave or brown sugar)
- Dash of red pepper flakes, if desired

Directions:

1. Prepare teriyaki sauce by mixing all ingredients in a small bowl. Set aside.
2. Heat 1 tsp. of olive oil in a saucepan over medium high heat. Add shrimp and cook, stirring frequently for about 2-4 minutes, or until shrimp are pink and opaque. Remove shrimp from pan to a plate or bowl and set aside.
3. Heat the remaining olive oil in a large saucepan or wok over medium high heat. Add broccoli, snap peas, peppers, and garlic to the pan. Saute, stirring frequently, for 2-3 minutes.
4. Add the teriyaki sauce and reduce heat to medium and cover pan with a lid. Cook for an additional 5 minutes.
5. Remove lid and add shrimp, water chestnuts and pineapple. Cook for an additional 1-2 minutes, or until vegetables are fork tender.
6. Serve on its own or over brown rice, quinoa, or another whole grain of your choice. Finish with a garnish of thinly sliced basil and sesame seeds.

Makes 6 servings (2 cups). Per serving: 270 calories, 3.5 g total fat (0 g saturated fat, 0 g trans fat), 185 mg cholesterol, 33 g carbohydrates, 29 g protein, 7 g dietary fiber, 640 mg sodium, 14 g sugar, 1 g added sugar.

For more healthy recipes visit:
www.aicr.org/cancer-prevention/recipes/

Prevention *Matters*

The Department of Clinical Genetics offers one of the most comprehensive risk assessment programs in the Philadelphia region. It encompasses all of Fox Chase Cancer Center's clinical services for people at risk for cancer, as well as innovative research in the areas of cancer prevention and genetics.

CONTACT THE RISK ASSESSMENT PROGRAM:
1-877-627-9684 | foxchase.org/rap | rapinfo@fccc.edu

Mary Daly, MD, PhD
Director, Risk Assessment Program

Michael Hall, MD, MS
Chair, Department of Clinical Genetics

TOGETHER FACING HEREDITARY CANCERS

A Patient Education Event Hosted by the Department of Clinical Genetics at Fox Chase Cancer Center

Tuesday, November 12, 6:30-8:00 p.m.
Fox Chase Cancer Center Cafeteria
333 Cottman Avenue, Philadelphia, PA 19111

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Fox Chase Cancer Center
Risk Assessment Program
Celebrating 33 Years
1991-2024

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