

BIO FANZINE



Exploring the Wonders of Life Sciences



Understanding
Cancer

Innovations in
Cancer Research

Women in Science:
Breaking Barriers

**JOIN THE FIGHT
AGAINST CANCER**

**-BECAUSE AWARENESS IS A
WEAPON**



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EDITOR SPEAKS

Join the Fight Against Cancer

Cancer is not just a medical condition, but it is a human experience that touches individuals, families, and communities across the world. As we dedicate this month's magazine to the theme "*Join the Fight Against Cancer*," we aim to inform, inspire, and empower our readers to become active participants in the global effort against this life-threatening disease. Through awareness, early detection, empathetic support, and collective responsibility, the fight against cancer can be strengthened at every level of society.

Cancer is a group of diseases that is characterized by the uncontrolled growth and spread of abnormal cells in the body. Under normal conditions, cells grow, divide, and die in a regulated manner. In cancer, this regulation is disrupted, leading to the formation of tumours that can invade adjacent tissues and spread to distant organs through a process known as metastasis. There are more than a hundred types of cancer, affecting nearly every organ system, and each type presents unique challenges in terms of diagnosis, treatment, and recovery.

Awareness is the foundation of cancer prevention and control. Despite remarkable advances in medical science, cancer continues to claim millions of lives every year, often due to late diagnosis and want of timely treatment. Many cancers are preventable or highly treatable if detected early. However, myths, stigma, fear, and lack of information prevent people from seeking help at the right time. Awareness campaigns educate communities about risk factors such as tobacco use, unhealthy diets, physical inactivity, infections, and environmental exposures. They also encourage regular health check-ups and promote healthy lifestyle choices that significantly reduce cancer risk.

Early detection plays a vital role in improving survival rates and quality of life. Recognizing warning signs, such as unexplained weight loss, persistent fatigue, unusual lumps, changes in bowel or bladder habits, abnormal bleeding, or non-healing sores that can prompt early medical consultation. Screening tests like mammography, Pap smears, colonoscopy, and oral examinations help identify cancer at a pre-cancerous or early stage, when treatment is most effective. Regular screening, especially for high-risk groups, saves lives.

Equally important in the fight against cancer is supporting those who are battling the disease. A cancer diagnosis can be emotionally, physically, and financially overwhelming. Patients need more than medical treatment—they need empathy, encouragement, and understanding. Offering emotional support, listening without judgment, respecting their dignity, and helping with daily needs can make a profound difference. Families, friends, workplaces, and communities must foster an environment of hope rather than pity, strength rather than silence.

This magazine is a call to action. Whether by spreading awareness, adopting healthier habits, encouraging early detection, or standing in solidarity with survivors and patients, each of us has a role to play. Together, let us join the fight against cancer, "not just this month, but every day", until prevention, care, and compassion reach everyone who needs them.

Dr P. Mary Anupama

CONTENTS

S.N O.	NAME OF AUTHOR	NAME OF THE ARTICLE	PAGE NO.
1.	MS. A. SARWANI	EMPOWERING STUDENTS TO BUILD A HEALTHIER, MORE COMPASSIONATE COMMUNITY	1-2
2.	MS. K. LIKHITA	WINTER AND CANCER: HOW SEASONAL CHANGES INFLUENCE CANCER RISK	3-4
3.	MS. T. SHIPRAH NISSI	JOIN THE FIGHT AGAINST CANCER: BECAUSE WAITING ISN'T AN OPTION	5-6
4.	MS. SANA KAUSAR	CANCER- EMPEROR OF ALL MALADIES	7
5.	MS. P. MANASA	THE FINANCIAL TOXICITY OF SURVIVORSHIP: CANCER'S HIDDEN DEBT SENTENCE	8-9
6.	MS. J. SUKEERTHI	JOIN THE FIGHT AGAINST CANCER: A CALL TO COURAGE AND UNITY	10
7.	MS. B.TANISHKA	EARLY DETECTION: THE STRONGEST WEAPON AGAINST CANCER	11
8.	MS. S.GOPIKA	BREAST CANCER: A QUICK OVERVIEW	12
9.	MS.B.B.V. SAMHITHA	GENETIC BREAST CANCERS — THE INHERITED RISK YOU SHOULD KNOW ABOUT	13-14
10.	MS. K. SHRUTI	TOGETHER WE CAN MAKE A DIFFERENCE	15

**EMPOWERING STUDENTS TO BUILD A
HEALTHIER, MORE
COMPASSIONATE COMMUNITY**

Cancer is one of the greatest health challenges in the world today. It does not only affect the body — it affects families, dreams, and the emotional strength of those who face it. But together, we can change the story. Knowledge, awareness, and kindness have the power to save lives. Each of us, especially students, can play a meaningful role in joining the fight against cancer.

Understanding Cancer

Cancer begins when abnormal cells in the body grow uncontrollably and spread to other areas. There are many types of cancer, and anyone can be affected — children, teenagers, adults, and the elderly. The most powerful tool we have against cancer is early detection. When cancer is found at an early stage, treatment has a much higher success rate, and survival becomes more likely.

Early Detection: Recognizing Warning Signs

Identifying the symptoms early can save lives. Some common warning signs of cancer include:

1. Unusual lumps or swelling in any part of the body
2. Sudden unexplained weight loss or extreme tiredness
3. Long-lasting cough or breathlessness
4. Changes in moles or skin patches
5. Persistent stomach pain or changes in bowel habits
6. Wounds or sores that do not heal
7. Unusual bleeding or discharge

Some symptoms are subtle and often ignored, such as back pain, night sweats, or frequent headaches. If any symptom persists for weeks, seeking medical guidance is essential.

Breaking Misconceptions

Misunderstandings create unnecessary fear. Some common myths include:

1. Cancer is contagious – It is not spread from person to person.
2. Cancer only affects older people – Anyone can get cancer.

3.Cancer has no cure – Many cancers are treatable, especially when detected early.

4.Surgery spreads cancer – Modern medicine makes surgery safe and life-saving.

By learning and sharing the truth, we help others act wisely without fear or hesitation.

Prevention: Small Choices, Big Impact

Healthy habits greatly lower cancer risk, avoiding smoking and harmful substances, eating fresh nutritious food, staying physically active, protecting skin from excessive sunlight, getting vaccinated for HPV and other preventable infections, encouraging regular checkups in families, every positive choice strengthens our future.

Students as Leaders of Change

Young people have a voice that inspires action. They can share reliable information on social media, organize awareness events in school or community, talk about the importance of early diagnosis and

encourage friends and family to adopt healthier habits

A Compassionate Community

A strong community is one where people look out for each other — where awareness spreads faster than fear, where early detection is encouraged, and where kindness supports healing. Every student has the power to help build such a community.

A Hopeful Future

Science continues to advance, offering better treatments and rising survival rates. But the real transformation happens when society joins hands with science — when awareness, support, and humanity come together.



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WINTER AND CANCER: HOW SEASONAL CHANGES INFLUENCE CANCER RISK

Abstract:

Winter brings many environmental and lifestyle changes that indirectly influence cancer risk and detection. Factors such as reduced sunlight, low Vitamin D levels, higher pollution, poor eating habits, weakened immunity, and decreased physical activity can affect cancer development or delay diagnosis. This article explains how winter conditions relate to cancer risk, along with preventive tips, treatment considerations, and the importance of awareness.

Introduction:

Cancer is a major health challenge worldwide. While winter does not directly cause cancer, the seasonal conditions create situations that may increase risk or hide early symptoms. People tend to stay indoors, avoid exercise, eat unhealthy foods, and delay routine checkups, which can influence overall health. Understanding how winter affects the body helps us protect ourselves and maintain healthy habits.

Definition: Cancer is a disease in which abnormal cells grow uncontrollably and spread to other parts of the body. This happens when normal cell growth is disturbed due to genetic changes, environmental factors, or weakened immunity. Winter-related conditions can indirectly contribute to these changes.

Why Winter Influences Cancer Risk & Its Causes:

1. Reduced Sunlight and Vitamin D Deficiency

- Shorter days and cold weather reduce sunlight exposure.
- Vitamin D is important for cell growth and immunity.
- Low Vitamin D levels are linked to breast, prostate, and colon cancers.

2. Increased Air Pollution

- Winter increases smog, smoke, and trapped pollutants.
- Polluted air contains carcinogens like PM2.5 and benzene.
- Raises risk of lung and throat cancers.

3. Unhealthy Eating Habits

- People prefer oily, sugary, and processed foods.
- Leads to weight gain and obesity.
- Obesity is a major risk factor for several cancers.

4. Reduced Physical Activity

- Cold weather reduces outdoor exercise.
- Lack of physical activity affects hormone levels and immunity.
- Sedentary lifestyle increases cancer risk.

5. Weaker Immunity

- Winter brings more viral infections.
- Weak immunity cannot effectively destroy abnormal cells.
- Cancer patients face higher infection risk during this season.

6. Delay in Cancer Detection

- People avoid hospital visits due to cold weather.
- Early symptoms like cough or fatigue are ignored.
- Late diagnosis decreases treatment success.

Prevention and Control:-

1. Improve Sunlight Exposure

- Spend 10–15 minutes in sunlight daily.
- Eat Vitamin D-rich foods like eggs, fish, fortified milk.

2. Reduce Pollution Exposure

- Wear masks outdoors.
- Avoid early morning and late-night fog.
- Keep indoor air clean.

3. Follow a Healthy Winter Diet

- Include fruits, vegetables, nuts, and warm homemade meals.
- Avoid processed foods and excess sugar.

4. Stay Physically Active

- Do indoor walking, yoga, home workouts.
- Aim for at least 30 minutes of activity daily.

5. Strengthen Immunity

- Eat foods rich in Vitamins C and E.
- Drink warm water and maintain good sleep.

6. Do Not Skip Health Checkups :-

Regular screenings such as mammograms, Pap smears, PSA tests, and oral cancer exams are important.

Treatment:-

Cancer treatment remains the same throughout the year, but winter requires extra care:

- Patients should avoid infections and stay warm.
- Follow the doctor's advice on diet, hydration, and medication.
- Treatments include surgery, chemotherapy, radiation therapy, immunotherapy, and targeted therapy.
- Winter-related weakness or infections should be treated immediately to avoid complications during cancer therapy.



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**JOIN THE FIGHT AGAINST CANCER:
BECAUSE WAITING ISN'T AN
OPTION**

Cancer isn't just a word. It's a storm that barges into people's lives uninvited — loud, messy, and relentless. It doesn't care about age, status, dreams, or the fact that someone has a birthday next week, or a family to take care of, or a bucket list waiting to be checked off. And that's exactly why the fight against cancer cannot be passive. It can't be something we "support from afar." It has to be something we join.

The fight needs every one of us — not as spectators, but as participants.

Why This Fight Matters

Every single day, millions of people wake up fighting a battle inside their own bodies. Some are armed with courage. Some with hope. Some with the sheer stubbornness to keep going. But all of them deserve an army behind them.

And let's be real — cancer doesn't wait. So neither should we.

Joining the fight doesn't always mean wearing a lab coat or discovering a new therapy. Sometimes, it means starting with the basics:

Learning the symptoms no one talks about, encouraging early screening, supporting survivors and patients emotionally, breaking the stigma and silence, amplifying voices that often get drowned out.

Awareness Isn't Boring — It Saves Lives

We've heard "awareness" so many times that it feels like background noise. But here's the twist: awareness is literally the

difference between early treatment and late regrets.

Something as "small" as encouraging a friend to get a breast exam or sharing knowledge about common cancers can quietly save a life. These tiny actions don't make headlines... but they make history for someone.

Research: The Unsung Superhero

Behind the scenes, scientists are grinding day and night — experimenting, failing, retrying, discovering. Every breakthrough they make is a mountain moved. But research isn't magic; it runs on funding, support, and people who believe in a future where cancer is no longer a monster in the dark.

Joining the fight also means backing the science that's pushing humanity forward.

Compassion Is a Weapon Too

Cancer doesn't just hit the body; it hits the mind, the finances, the confidence, and the entire family ecosystem.

Sometimes what a fighter needs isn't a cure — it's company.

A message.

A meal.

A ride to the hospital.

A reminder that they aren't alone.

These things sound small until they aren't.

The Future We're Working Toward

Imagine a world where early detection tools are everywhere and affordable.

Imagine treatments that don't ruin a person before they save them.

Imagine a society where patients don't feel embarrassed to talk about their diagnosis.

That's the world this fight is building. And it's not just a dream — it's a slowly forming reality. But progress depends on us staying committed, sharp, and loud.

So... What's Your Role?

You don't need superpowers to join the fight. Show up in your own way:

Educate yourself.

Share truthful information.

Stand with patients and families.

Support cancer research.

Encourage screenings.

Break the stigma.

Every action counts. And if anyone tells you otherwise, tell them they clearly don't understand how revolutions work.

This Fight Isn't Theirs Alone — It's Ours

Cancer affects humanity as a whole. So joining the fight isn't charity — it's responsibility. It's solidarity. It's love in action.

And here's the truth: the fight against cancer isn't won by a single hero. It's won by

millions of ordinary people doing extraordinary things together.

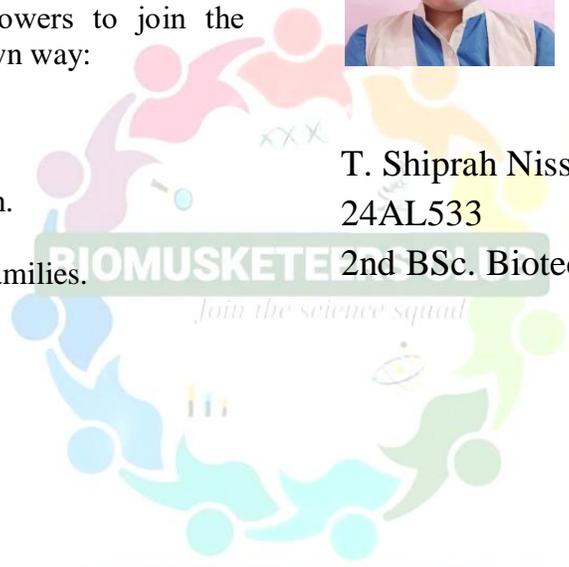
Join the fight. Because one day, someone you love might need an army — and that army begins with you.



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CANCER- EMPEROR OF ALL MALADIES

As the title suggests, cancer has been among one of the most notorious and causing human deaths at a large scale, it has been a cause of mortality since a long time, and cures for cancer has been so limited, it has been one among the leading research topics and new drugs and medicines are continuously being discovered to overcome this, yet almost all of them can only manage to prolong life span but not eradicate this ailment. It has become a fear to most citizens.

Cancer is mainly classified into two types, benign and malignant, the latter proving to be more dangerous and hopeless, in which, oncogenic cells have the ability to migrate and spread in a completely different organ, away from its origin. Meanwhile the former, benign cancer, remains within an area and stays isolated.

Benign cancer can be cured if treated as the focus lies only on one area and surgical methods can terminate it at once. Meanwhile malignant cancers are very tricky, clearing and curing it at its very initial state might eradicate its presence and cure a person, but if delayed, the chances of cure narrow down, and even after treating a particular area, a person cannot rest as the assurance of being cured remains as a question, malignant cells may arise anytime after their migration, so it's best for a person to detect it at its very initial stage. Detection methods are plenty, like CBC (complete blood count), Tumour marker tests, basic imaging ie, x ray and ultrasound and screening tests. Biopsy and histopathology combined with immunochemistry prove to be the most ideal for proper and accurate detection.

It is indeed a hindrance, as people who are healthy, can also face cancer out of the blue, although there are preventive measures, a person can still end up facing cancer, nonetheless, the

preventions are, prevention of staying in the sun for too long as it may lead to skin and somatic cancers, avoid smoking as it can cause lung cancer and it might also turn malignant, avoid excessive drug abuse as it may also trigger some cells and lead to mutations.

The various methods of curing cancer include:

- Radiation therapy- currently emerging can destroy growth and inhibit growth of cancer cells.
- Chemotherapy- also emerging treatment, eg- orally administered drugs.
- ADCs- antibody drug conjugates, which involves the mixture of chemo and immunotherapy.
- Immunotherapy- by boosting immune responses, this proves to be better than direct cytotoxicity involved in ADCs. Antibiotic and nanoparticles conjugation is a leading trend, allowing targeted immunotherapy. Apoptosis within cancer cells is achieved.
- Targeted therapy- ADCs and nanoparticles have fewer side effects than chemotherapy, but mutations may cause cancer yet again.
- Hormonal therapy- regulation of certain hormones which can prove to be unfavorable for the growth of cancer cells can also treat cancer.
- Stem celltherapy- it falls into the surgical method of treating cancer.
- Evolutionary methods- these are trying to be brought into the picture for cancer cure.

With the scientific advancements in technology, a solution to this malady is sure to arise sooner or later, until then, hope and safety measures are all that one could rely on.



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THE FINANCIAL TOXICITY OF SURVIVORSHIP: CANCER'S HIDDEN DEBT SENTENCE

When a patient hears the words, "You are cancer-free," it should mark a moment of unadulterated triumph—the final victory over a devastating disease. Yet, for millions of survivors, this declaration merely transitions them from a physical battle to an insidious, long-term economic one, known as financial toxicity. This hidden debt sentence, a confluence of spiraling costs, lost income, and lifelong expenses, often becomes the new chronic condition that compromises their health and quality of life for years to come.

The True Cost: Beyond Chemotherapy
Financial toxicity is not just the immediate burden of chemotherapy or surgery. It is a wide-ranging term that encompasses both the objective financial burden (out-of-pocket costs) and the subjective financial distress (the worry and anxiety) experienced by patients and their families.

While the acute treatment phase is the most expensive, the financial fallout persists long into survivorship due to three major factors: Ongoing Surveillance and Late Effects: Being cancer-free does not mean being treatment-free. Survivors require years of follow-up scans, blood tests, and specialist visits to monitor for recurrence. Furthermore, cancer treatments themselves often leave behind late effects, such as heart problems, neuropathy, or secondary cancers, which require continuous, expensive management.

Indirect and Non-Medical Costs: The bills for a cancer journey extend far beyond the hospital. They include fuel for transportation to distant specialty centers, lodging for clinical trials, and the necessary costs of childcare or elder care during prolonged appointments. Surveys indicate that survivors are forced to drain savings, rely on credit cards, or take out second mortgages to cover these overlooked necessities.

Loss of Income and Career Setbacks: Many survivors face an inability to work at full capacity, or at all, due to chronic fatigue, "chemobrain" (cognitive impairment), or physical disability resulting from their treatment. This loss of productivity, coupled with job discrimination or pressure to return to work prematurely, severely limits their earning potential, turning a temporary illness into a permanent economic disadvantage.

The Psychological Price of Debt

The financial burden translates directly into a profound psychological toll. Studies consistently show that financial distress is a stronger predictor of a poor quality of life among cancer survivors than physical distress, symptom burden, or depression.

A significant portion of survivors report going into substantial debt, with many owing over \$10,000. This kind of debt triggers anxiety, stress, and worry about their financial stability, compounding the emotional trauma they have already endured.

Key Statistic: Research suggests that cancer survivors who experience financial toxicity

are three times more likely to report anxiety and depression compared to those who do not.

The desperation to manage costs can also lead to dangerous coping mechanisms, where survivors actively engage in cost-avoidance behaviors.

This includes:

Delaying or skipping necessary follow-up care out of fear of the co-pay.

Non-adherence to prescription medications (taking less than prescribed or not filling a prescription at all) to save money.

These choices, made under extreme duress, directly compromise their health outcomes and tragically increase the risk of recurrence and mortality. Bankruptcy is even associated with an increased risk of death among cancer patients, creating a vicious cycle where financial despair literally threatens their hard-won survival.

Addressing the Systemic Challenge

Addressing financial toxicity requires more than just patient-level counseling; it demands systemic change.

Oncology care teams must integrate financial navigators into standard practice, similar to social workers and nurse navigators, to proactively discuss the potential costs of care and connect patients to resources. Furthermore, payers and policymakers must recognize that cancer is increasingly a chronic condition and structure insurance coverage accordingly, minimizing out-of-pocket costs for essential long-term surveillance and management of late effects.

Survival should be a celebration of life, not a commencement of debt. By acknowledging and confronting the full economic scope of a cancer diagnosis, we can ensure that the incredible medical advances in oncology are accessible to all, allowing survivors to fully reclaim their lives without the crushing weight of a permanent debt sentence.



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BIOMUSKETEERS CLUB

Join the science squad

**JOIN THE FIGHT AGAINST CANCER:
A CALL TO COURAGE AND UNITY**

Cancer is not just a disease; it is a battle fought in hospitals, homes, and hearts across the world. Every year, millions of families face its impact, and yet, amidst the struggle, there is resilience, courage, and hope. The fight against cancer is not the responsibility of a few — it is a collective mission that calls for awareness, compassion, and action.

Strength in Unity

When we say “*Join the Fight Against Cancer,*” we are inviting people to stand together.

Patients show extraordinary courage in their journey.

Families and caregivers provide unwavering love and support.

Doctors, researchers, and nurses dedicate their lives to finding cures and offering care.

Communities and advocates raise awareness, funds, and voices to ensure no one fights alone.

Together, these forces create a shield of strength that cancer cannot break.

The Power of Awareness

Knowledge is one of the strongest weapons in this fight. Early detection saves lives, healthy lifestyles reduce risks, and open conversations break stigma. Campaigns, walks, and awareness drives remind us that every small step — whether it’s sharing information, donating, or volunteering — contributes to a larger victory.

Hope Through Research

Science and innovation are lighting the path forward. Breakthroughs in immunotherapy, precision medicine, and advanced diagnostics are transforming cancer care. Supporting research means investing in a future where cancer is no longer a threat but a conquered challenge.

A Personal Commitment

Joining the fight is not only about global action — it’s about personal choices.

Encourage regular screenings.

Support loved ones with empathy and strength.

Participate in community initiatives.

Share stories of survival and hope to inspire others.

“Together, we can turn the battle against cancer into a triumph of the human spirit.”



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EARLY DETECTION: THE STRONGEST WEAPON AGAINST CANCER

In the fight against cancer, no medical breakthrough has proven more powerful or more reliable than early detection. While modern oncology has introduced advanced drugs, immunotherapies, and precision-based treatments, their success is often limited when cancer is discovered at a late stage. Early detection shifts the balance in favor of the patient by identifying the disease before it spreads, mutates, or becomes resistant to therapy.

When cancer is detected early, treatment is usually simpler, more effective, and less physically and emotionally exhausting. Small, localized tumors can often be removed surgically or controlled with minimal therapy, leading to higher cure rates and better long-term outcomes. In contrast, advanced cancers frequently require aggressive combinations of chemotherapy, radiation, and targeted drugs, which may only slow disease progression rather than eliminate it completely.

Early diagnosis also has a profound impact on survival rates. Cancers such as breast, cervical, colorectal, prostate, and oral cancer show dramatically improved outcomes when detected in their initial stages. Screening programs have repeatedly demonstrated that timely diagnosis reduces mortality—not because the drugs are stronger, but because the disease has not yet gained biological complexity or spread to vital organs.

Despite this evidence, delayed diagnosis remains a major global challenge. Many early cancers cause no noticeable symptoms,

or present signs that are easily ignored. Fear, lack of awareness, social stigma, and limited access to screening services further contribute to late presentation, particularly in resource-limited settings. By the time symptoms become severe, treatment options are often fewer and less effective.

Advances in diagnostic science are expanding the reach of early detection. Imaging technologies, molecular biomarkers, genetic screening, and liquid biopsies are enabling clinicians to identify cancer earlier and more accurately than ever before. However, technology alone is not enough. Public awareness, routine screening, and timely medical consultation are equally critical components of early cancer control.

Early detection does more than save lives—it preserves quality of life. Patients diagnosed early often experience shorter treatment durations, fewer side effects, reduced financial burden, and better psychological well-being. For families and healthcare systems, early diagnosis translates into lower costs and better resource utilization.



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BREAST CANCER: A QUICK OVERVIEW

What Is Breast Cancer?

Breast cancer starts when cells in the breast begin to grow uncontrollably, often forming a lump or tumor. It can affect both women and men, though it's far more common in women. Early detection dramatically improves outcomes .

Common Signs & Symptoms

A new lump in the breast or underarm

Thickening or swelling of part of the breast

Skin irritation, dimpling, or redness

Nipple discharge (other than breast milk)

Changes in breast size or shape

Persistent pain in the breast or nipple

These symptoms don't always mean cancer, but any unusual change should be checked by a doctor right away

What Causes It?

The exact cause isn't always clear, but risk factors include:

Age (most cases occur after 50)

Family history or inherited gene mutations (BRCA1/BRCA2)

Hormone exposure (early periods, late menopause, HRT)

Lifestyle factors (obesity, lack of exercise, alcohol)

Dense breast tissue, radiation exposure, or certain benign breast conditions ^{1 3}.

How It's Treated

Treatment depends on the cancer's type, stage, and hormone receptor status. Common approaches include:

Surgery (lumpectomy or mastectomy)

Chemotherapy (kills fast-growing cells)

Radiation (targets remaining cancer cells after surgery)

Hormone therapy (blocks estrogen/progesterone if the tumor is hormone-receptor-positive)

Targeted therapy (e.g., HER2-blockers for HER2-positive cancers)

Immunotherapy (helps the immune system fight cancer)



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GENETIC BREAST CANCERS — THE INHERITED RISK YOU SHOULD KNOW ABOUT

Breast cancer isn't always random. About 5–10 % of cases are linked to inherited gene changes — most famously *BRCA1* and *BRCA2*, but also others like *PALB2*, TP53, PTEN, CHEK2, and ATM*. These mutations don't guarantee cancer, but they raise the odds dramatically, and knowing your status can literally save your life — or your loved ones' lives.

How Do You Know If It's Genetic?

Most people discover a hereditary link through *family patterns* — multiple relatives with breast or ovarian cancer, cancers diagnosed at unusually young ages, or men with breast cancer. If you're diagnosed before 45, have triple-negative breast cancer, or develop multiple primary cancers, your doctor may recommend *genetic testing*. A certified genetic counselor is key — they'll walk you through what a positive, negative, or “variant of uncertain significance” result really means.

The Big Players: BRCA1 & BRCA2

- *BRCA1* carriers have a 55–72 % lifetime chance of developing breast cancer (vs. ~12 % in the general population). Ovarian cancer risk is also high — up to 44 %.

- *BRCA2* carriers face a 45–69 % breast cancer risk and a 15–25 % ovarian cancer risk. Men with BRCA2 mutations have a notably higher chance of breast cancer than the average male.

Both genes are involved in DNA repair — when they're broken, cells can accumulate damage that leads to cancer.

Other High-Risk Genes

- *PALB2* — works with BRCA2; breast cancer risk 30–58 %

- *TP53* (Li-Fraumeni syndrome) — gives a lifetime breast cancer risk up to 90 %, plus high odds of brain tumors, sarcomas, leukemia, adrenal cancers

- *PTEN* (Cowden syndrome) — linked to breast, thyroid, endometrial, and colon cancers

- *CHEK2* and *ATM* — moderate to high risk, often combined with other factors

These genes aren't as famous as BRCA, but they're just as important — especially when multiple family members are affected.

What Can You Do If You Test Positive?

1. *Surveillance Starts Early*

- Annual mammogram + breast MRI beginning at age 25–30 (MRI is more sensitive for dense tissue)

- Clinical breast exams every 6 months

- For ovarian risk: consider transvaginal ultrasound + CA-125 blood test (though effectiveness is debated)

2. *Risk-Reducing Surgery*

- *Prophylactic mastectomy* can cut breast cancer risk by ~90 %

- *Oophorectomy* (removal of ovaries) reduces ovarian cancer risk and, if done before menopause, also cuts breast cancer risk by about half

3. *Medications*

- Tamoxifen, raloxifene, or aromatase inhibitors can lower breast cancer risk by roughly 50 % in high-risk women

4. *Lifestyle Matters*

- Keep a healthy weight, limit alcohol, stay physically active, avoid smoking — these choices help even when genes aren't on your side

Important Realities

- A positive test doesn't mean you're doomed — many carriers never develop cancer, especially with proactive management.

- A negative test doesn't erase risk — sporadic mutations still happen, and family history alone can raise risk.

- Men need to pay attention too — especially BRCA2 carriers, who have a higher chance of male breast cancer.

Where to Find Help

- *Genetic Counselor* — essential for interpreting results and planning next steps

- *FORCE (Facing Our Risk of Cancer Empowered)* — nonprofit for people with hereditary cancer risk

- *National Cancer Institute (NCI)* — resources on genetic testing and hereditary cancer syndromes

- *American Society of Clinical Oncology (ASCO)* — guidelines for managing hereditary breast cancer risk

Knowing your genetic status isn't just about you — it's about your children, siblings, parents, and future generations. If you've got a family history that raises eyebrows, don't wait. Talk to your doctor, ask for a referral to a genetic counselor, and get tested. Early knowledge = early action = better outcomes.



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TOGETHER WE CAN MAKE A DIFFERENCE

Cancer remains one of the world's most formidable health challenges, affecting millions of lives every year. Despite tremendous advances in research and treatment, cancer continues to impact individuals, families, and communities globally. The fight against cancer is not just the responsibility of doctors and researchers—it requires the collective effort of everyone. By joining this fight, we can save lives, support loved ones, and drive progress towards a future with less cancer and more hope.

•UNDERSTANDING CANCER AND ITS IMPACT.

Cancer and Its Impact Cancer is a group of diseases characterized by uncontrolled cell growth, which can invade or spread to other parts of the body. It is a leading cause of death worldwide, and the emotional, physical, and financial toll on patients and families is profound. Each cancer diagnosis represents a life changed—a dream interrupted, a family disrupted. But cancer is not invincible.

WHY YOU SHOULD JOIN THE FIGHT. Fight against cancer needs more than medical breakthroughs—it needs people who advocate, educate, and support. Here's why your involvement matters: **Raising Awareness:** Increasing knowledge about cancer risks, symptoms, and screenings can lead to earlier diagnosis, when treatment is more effective. **Promoting Prevention:** Lifestyle changes like a healthy diet, regular exercise, avoiding tobacco, and protecting against harmful UV rays can reduce cancer of new therapies. Providing

Emotional Support: Cancer affects mental health. Compassionate support helps patients and families cope with challenges. **Advocating for Policy:** Public pressure can improve healthcare access and increase government spending on cancer research and prevention programs. **How to Get Involved** Joining the fight against cancer is possible for everyone, regardless of age, background, or profession. Here are practical ways to contribute: **Educate Yourself and Others:** Share credible information about cancer risk factors, symptoms, and prevention on social media or in community groups. **Participate in Screenings:** Regular screenings are powerful tools to detect cancer early. Encourage loved ones to schedule check-ups. **Volunteer:** Many hospitals and cancer centres welcome volunteers to assist patients and run support programs. **Donate to Cancer Research:** Financial contributions help sustain lifesaving research and support services. **Advocate for Change:** Join campaigns or movements that push for improved cancer care policies.



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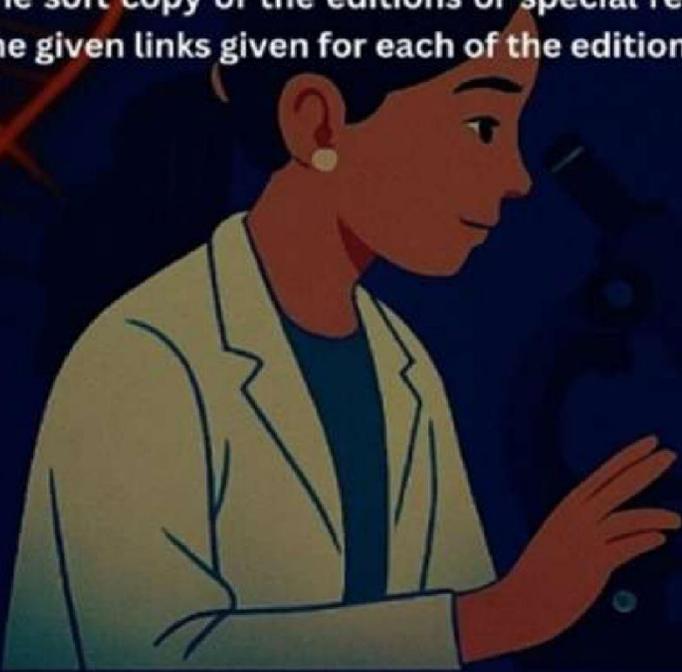
ABOUT THE MAGAZINE

Welcome to Bio Fanzine, the official bimonthly magazine of the Biomusketees Club, St. Joseph's College for Women. This interdisciplinary publication aims to provide a platform for students from diverse fields of biology, including Biochemistry, Biotechnology, Botany, Zoology, Agriculture, and Home Science, to share their knowledge, ideas, and research through article writing.

Article writing is a vital skill for biology students, as it enables them to develop their critical thinking, creativity, and communication skills. Through Bio Fanzine, we strive to foster a culture of scientific inquiry, innovation, and collaboration among our students.

We would like to acknowledge the tireless efforts of our student editors, who have worked diligently to bring this magazine to life. Their dedication, enthusiasm, and commitment to excellence are truly commendable. We are deeply grateful to our Principal Dr. Sr Shyji, Vice- Principal Sr. Hema and Management which include Sr. Mary, Sr. Daisy and Sr. Nancy for their unwavering support and encouragement. Their vision and leadership have enabled us to create this platform, which we believe will play a significant role in shaping the minds of our future scientists and leaders.

We hope that Bio Fanzine will serve as a catalyst for intellectual curiosity, creativity, and innovation among our students, and provide a platform for them to showcase their talents and achievements. Students from various science disciplines of the college and also other colleges will be invited for contributions to the E- Magazine. The soft copy of the editions or special releases of the magazine will be available at the given links given for each of the edition.



Happy reading!
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