

BREAST CANCER AND YOUNG WOMEN.

LINRAVELLING THE IMPACT OF LIFESTYLE AND GENETICS

CANCRO DA MAMA E MULHERES JOVENS: DESVENDANDO O IMPACTO DO ESTILO DE VIDA E DA GENÉTICA

Texto Luis Costa | Rakesh Kumar

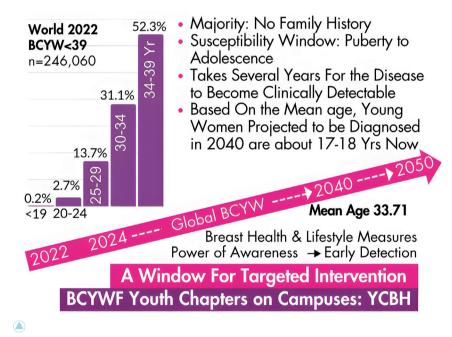
Nota Editorial OncoGlam

Este é um tema demasiado importante para não ser partilhado na nossa revista. Embora o artigo esteja em inglês, acreditamos que a sua mensagem e relevância merecem ser destacadas para sensibilizar o máximo de pessoas sobre o impacto crescente do cancro da mama em mulheres jovens.

De forma a incluir todos os nossos leitores. apresentamos um breve resumo das ideias principais do artigo:

O aumento preocupante de casos em jovens: O cancro da mama está a crescer globalmente entre mulheres com menos de 40 anos, sendo muitas vezes diagnosticado em estádios avançados e com formas mais agressivas. Em Portugal, a incidência é superior à média global, com uma taxa de 22,3 casos por 100.000 mulheres abaixo dos 39 anos em 2022.

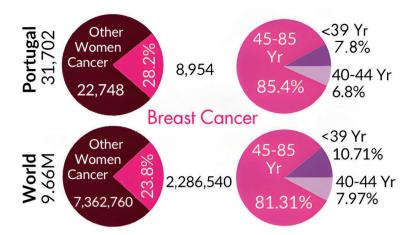
Fatores de risco e prevenção: Eventos durante a puberdade e a adolescência, como exposição a químicos, alterações hormonais e escolhas de estilo de vida, podem aumentar o risco futuro. Detetar o cancro precocemente é essencial, especialmente devido à sua rápida progressão em jovens.



Características e Tendência Prevista do Cancro da Mama em Jovens Mulheres até 2040 e Além.

Impacto nos jovens adultos: As mulheres jovens enfrentam desafios únicos, como preocupações com fertilidade, interrupções de carreira e o peso emocional de lidar com a doença em idades tão precoces.

O papel da BCYW Foundation: A fundação internacional "Breast Cancer in Young Women" está a liderar esforços globais para aumentar a consciencialização, fomentar a investigação, e apoiar mulheres jovens na luta contra o cancro da mama. Entre as suas iniciativas destacam-se a criação da fita rosa--púrpura, dedicada às jovens pacientes, e o "Global Youth Council for Breast Health",



que educa estudantes e jovens trabalhadoras sobre saúde mamária e prevenção.

Este artigo é um apelo à ação: mais educação, mais sensibilização e mais esforços para proteger as gerações mais novas. Agradecemos por lerem e esperamos que esta mensagem inspire reflexão e mudança. A equipa OncoGlam empenhou-se em partilhar as ideias principais deste artigo, no final de cada paragrafo, garantindo que barreiras linguísticas não fossem um obstáculo ao acesso a esta informação vital.

UNDERSTANDING BREAST CANCER IN YOUNG WOMEN

Breast cancer is one of the leading causes of cancer-related deaths worldwide, ranking fifth overall. In 2022, a concerning about 2.29 million new breast cases were reported globally. Although medical advances have significantly reduced breast cancer mortality rates in recent years, these improvements have mainly overlooked women under 40. This age group faces unique challenges, as breast cancer in young women often shows distinct clinical and biological traits, frequently resulting in poorer outcomes than those in older adults.

Contrary to the common perception that breast cancer primarily affects older women, the data presents a different reality: cases of breast cancer among young women are increasing globally and are predicted by the World Health Organization (WHO), to rise until 2050 globally (Imagem 1). Experts are working diligently to uncover the biological factors and triggers driving this troubling trend, as well as the reasons behind the rising number of advanced-stage diagnoses in younger patients.

The statistics are striking, particularly in countries like Portugal. According to the WHO, in 2022, breast cancer accounted for 28.2% of all cancer diagnoses among women in Portugal, compared to a global average of 23.8%. A closer look at the data reveals that 52% of breast cancer cases in Portuguese women under 39 occurred in the 34-39 age group, followed by 29.4% in the 30-34 group and 14.8% in the 25-29 group. While rare, cases have even been documented in women under 24. The age-standardized rate (ASR) for breast cancer in Portuguese women under 39 was 22.3 per 100,000 in 2022, significantly higher than the global average of 8.1 per 100,000. This discrepancy highlights the urgent need for action.

Raising awareness and developing targeted prevention and early detection strategies are essential steps in addressing this growing concern. By highlighting this issue, we can work towards better outcomes for young women, empowering them with the knowledge and resources they need to prioritize their breast health. Let this serve as a call to action for communities, healthcare professionals, and policymakers worldwide to support this vulnerable group in the fight against



Luis Costa, MD, PhD

Breast Cancer in Young Women Foundation, Denver, USA and Hospital de Santa Maria-Hospital Universitário Lisboa, Portugal.

Rakesh Kumar, PhD

Breast Cancer in Young Women Foundation. Denver. USA and Cancer Research Institute, Himalavan Institute of Medical Sciences. Dehradun, India.

breast cancer.

O cancro da mama é a quinta principal causa de mortes relacionadas com cancro a nível mundial, com 2.29 milhões de novos casos reportados em 2022. Apesar dos avancos médicos terem reduzido as taxas de mortalidade. as mulheres com menos de 40 anos continuam a ser largamente negligenciadas, enfrentando desafios únicos e piores desfechos clínicos. Os dados mostram um aumento global de casos nesta faixa etária, tendência que a OMS prevê que se mantenha até 2050, incluindo diagnósticos em estádios avancados. Em Portugal, a situação é preocupante, com 28,2% dos diagnósticos oncológicos femininos em 2022 associados ao cancro da mama, e uma taxa ajustada à idade de 22,3 por 100.000, muito acima da média global de 8,1 por 100.000. É urgente aumentar a sensibilização e desenvolver estratégias de prevenção e deteção precoce, promovendo melhores resultados para as mulheres jovens e reforçando o apoio de comunidades, profissionais de saúde e decisores políticos.

HOW BREAST CANCER IN YOUNG WOMEN STANDS APART

Breast cancer in young women (BCYW) is a distinct and challenging form of the disease. Unlike older women, young women are often



Advanced Research, & Advocacy

Breast Cancer in Young Women Foundation

Breast Cancer is Curable - If Detected Early

Early Detection Starts with Timely Awareness



Mensagens Centrais de Sensibilização da Fundação BCYW.

diagnosed with more aggressive subtypes, such as triple-negative, HER2-positive, and luminal B cancers. These types tend to grow rapidly and are more often detected at advanced stages, complicating treatment and prognosis.

Studies suggest that breast cancer in younger women is biologically distinct due to unique cellular and genomic features, which researchers are still investigating.

Many public screening programs concentrate on older women, leaving younger women without clear recommendations for early detection. Misconceptions that breast cancer is an "older women's disease" and a lack of knowledge about self-breast care can lead to delays in seeking medical attention.

Historically, diagnosis and treatment guidelines have been based on clinical trials that do not address the younger women. Although this is changing, it underscores the need for more research focused on this demographic.

Facing breast cancer at a young age presents additional challenges, including career and finances-interruptions to career development and the financial burden of treatment; family planning-worries about fertility and future family plans due to the effects of treatment; and the physical and emotional impact—changes in appearance, fear of recurrence, and the psychological toll of living with cancer at a young age. O cancro da mama em mulheres jovens (BCYW) é uma forma distinta e desafiadora da doença, frequentemente associada a subtipos mais agressivos, como triplo-negativo, HER2-positivo e luminal B, que complicam o tratamento e o prognóstico. Estudos indicam que este cancro apresenta características biológicas únicas devido a fatores celulares e genómicos ainda em investigação. Os programas de rastreio público concentram-se sobretudo em mulheres mais velhas, deixando as mais jovens sem recomendações claras para deteção precoce, agravadas por preconceitos de que o cancro da mama é uma "doença de mulheres mais velhas". Historicamente, os ensaios clínicos e diretrizes de tratamento excluíram esta faixa etária, mas há esforços em curso para preencher esta lacuna através de

mais investigação. Além disso, o diagnóstico precoce traz desafios adicionais para as mu-Iheres jovens, como interrupções na carreira, preocupações com a fertilidade, impacto financeiro e um peso emocional significativo.

WHY EARLY DETECTION IS A LIFESAVER FOR YOUNG WOMEN

Breast cancer in young women often grows more rapidly, with tumors doubling in size faster than those in older women. Unfortunately, some healthcare providers may dismiss symptoms in younger patients or take a "wait-and-see" approach, which can further delay diagnosis. For these reasons, it is essential for young women to stay informed, vigilant, and proactive about their breast health. Early detection and timely treatment can make all the difference.

Detecting breast cancer early is crucial for effective treatment and enhances the chances of a cure. Raising awareness about the increasing rates of breast cancer among young women and promoting self-breast health practices are critical for prevention and early detection.

Encouraging young women to be aware of their bodies, recognize changes, and take prompt action empowers them and improves outcomes. Educating about the risks of breast cancer and how puberty and adolescence can impact future health is vital for building a future free from breast cancer. Furthermore, personal and family history can help to detect young women who are at the highest risk for breast cancer, namely those who may have a critical genetic predisposition for breast cancer.

O cancro da mama nas mulheres jovens tende a crescer mais rapidamente, com tumores a duplicarem de tamanho de forma mais rápida do que nos casos em mulheres mais velhas. Alguns profissionais de saúde podem desvalorizar os sintomas nas jovens ou adotar uma abordagem de "esperar para ver", o que pode atrasar o diagnóstico. Por isso é fundamental que as jovens se mantenham informadas, vigilantes e proativas na saúde mamária, pois a detecão precoce e o tratamento atempado fazem toda a diferenca. Aumentar a consciencialização sobre a crescente taxa de cancro da mama entre as jovens e promover práticas de autoexame são essenciais para a prevenção e detecão precoce.

HOW PUBERTY AND ADOLESCENCE SHAPE BREAST CANCER RISK

Puberty and adolescence are crucial stages of breast development, influenced by a delicate interplay of hormonal signals, biological processes, and environmental factors. During this time, breast tissue is particularly susceptible to influences such as inflammation, oxidative stress, lifestyle choices, and exposure to harmful substances (e.g., xenoestrogens) and carcinogens. Research shows that even in young women without symptoms, normal breast tissue may exhibit early changes in pathways associated with cancer, potentially heightening the risk

of breast cancer later in life.

Breast cancer is becoming increasingly common among women in their 20s and 30s, raising questions about whether events during adolescence might contribute to its onset. Scientists believe breast cancer starts when healthy breast cells undergo changes, gradually turning into cancerous cells over many years. These changes are driven by biological signals that can be affected by external factors.

Recent research has demonstrated that early genetic changes linked to breast cancer can be identified during puberty and adolescence across various cancer subtypes. These genetic alterations may take approximately 10 years to accumulate before breast cancer becomes detectable. This indicates that subtle genetic changes during adolescence could persist for years, potentially contributing to cancer later in life. However, the precise causes of these early genetic changes are still being studied.



🗻 Sobreviventes de Cancro da Mama Jovens e Cuidadores Partilharam as Suas Viagens Inspiradoras na Reunião da BCYW em Lisboa.



YOUTH COUNCIL FOR BREAST HEALTH



Messages: First, Young Women Can Develop Breast Cancer Too! Second, Early Detection is Essential! Third, Proactive Breast Care Creates a Lifelong Impact on Women's Health

A Iniciativa Global da Fundação BCYW Tem Vindo a Capacitar Estudantes nas Universidades para Promover a Sensibilização sobre a Saúde Mamária para um Futuro Livre de Cancro da Mama.

A puberdade e a adolescência são fases cruciais para o desenvolvimento da mama, onde o tecido mamário é particularmente suscetível a influências hormonais, processos biológicos e fatores ambientais. Durante este período, podem ocorrer alterações precoces nas vias associadas ao cancro, mesmo em mulheres jovens sem sintomas, o que pode aumentar o risco de cancro da mama mais tarde na vida. Estudos recentes indicam que alterações genéticas associadas ao cancro podem ser identificadas já na puberdade, com mudancas subtis que podem persistir durante anos e contribuir para o desenvolvimento do cancro. No entanto, as causas exatas

dessas alterações genéticas ainda estão a ser investigadas.

UNDERSTANDING THE BCYW CAUSES

Only 8-15% of breast cancer cases in young women are linked to genetics (monogenic risk), indicating that other factors influence the majority of cases. The exact causes remain unclear, but research suggests that a combination of factors, including polygenic risk and hormonal influence, accumulates over many years before the disease becomes detectable. Breast cells respond to both internal signals, such as hormones and biological processes, and external influences, including lifestyle choices, exposure to harmful chemicals, and environmental conditions. These factors can disrupt the fragile balance between protective and harmful elements in breast tissue, potentially leading to cancer.

The increase in breast cancer among young women is a complex issue influenced by genetics, lifestyle, biology, and environmental factors. Hormones, especially estrogen, are vital in the development of breast tissue and, in certain instances, breast cancer. Estrogen, mainly produced by the ovaries, fat tissue, and placenta, fluctuates throughout a woman's life. Disruptions in estrogen levels or signaling-whether from overproduction or external exposure—can result in uncontrolled cell growth. Reproductive choices, lifestyle, and chemical exposure further affect these hormonal processes. Several science-supported risk factors associated with breast cancer in young women include:

Late Pregnancies: The age at which a woman has her first child significantly affects her risk of breast cancer. Early childbirth and multiple pregnancies typically reduce the risk, particularly for hormone receptor-positive cancers. Conversely, delaying childbirth is linked to a higher risk later in life, potentially due to the accumulation of mutations in breast cells over time.

Chemical Exposure in Personal Care Products (PCPs): Certain chemicals, known as xenoestrogens, mimic estrogen and may increase the risk of breast cancer. Ingredients like parabens and phthalates, commonly found in cosmetics and skincare products, have been linked to cancer in some cases.

Processed Foods and Breast Health: Consumption of processed foods is associated with increased cancer risks, including breast cancer. These foods often contain high levels of advanced glycation end-products (AGEs), which can disrupt normal cellular functions and lead to inflammation and oxidative stress-both linked to cancer.

Birth Control Pills: The use of birth control pills has sparked debate about their potential link to breast cancer. These pills contain synthetic hormones that can disrupt the natural balance of female hormones. Some studies indicate that women under 35 who have recently used oral contraceptives may face a slightly heightened risk of breast cancer.

Apenas 8-15% dos casos de cancro da mama em mulheres jovens estão ligados à genética, o que indica que a maioria dos casos é influenciada por outros fatores. A pesquisa sugere que uma combinação de risco poligénico e influência hormonal se acumula ao longo dos anos antes de a doença se tornar detetável. As células da mama respondem tanto a sinais internos, como hormonas e processos biológicos, como a influências externas, como escolhas de estilo de vida. Estes

fatores podem perturbar o equilíbrio delicado entre elementos protetores e prejudiciais no tecido mamário, potencialmente levando ao cancro. O aumento do cancro da mama entre as mulheres jovens resulta de uma combinacão de genética, biologia, estilo de vida e fatores ambientais.

THE BCYW FOUNDATION: EMPOWE-RING YOUNG WOMEN IN THE FIGHT AGAINST BREAST CANCER

The Breast Cancer in Young Women (BCYW) Foundation, an international nonprofit based in the United States - supported by individual and corporate donations globally, is committed to lessening the impact of breast cancer on young women through education, translational research, and support. Its mission is to save lives by fostering targeted awareness, enabling early detection and treatment, and funding innovative research that directly benefits young patients. By encouraging global collaboration, the BCYW Foundation strives to create a future free from breast cancer for young women worldwide.

Through its initiatives, the BCYW Foundation has created a platform that transcends geographical and racial boundaries, uniting young women with breast cancer and providing them with vital resources. The foundation amplifies the voices of courageous survivors and supportive family members who have confronted the disease, shared their stories and connecting them to a global network of survivors. This effort also reaches those who have lost loved ones to breast cancer, promoting solidarity and healing. The BCYW Foundation brings together a dedicated team of breast cancer doctors, scientists, advocates, survivors, NGOs, and ambassadors from 27 countries. Its awareness materials are offered in 13 languages and include inspiring bilingual survivor stories in six languages. By addressing the unique challenges faced by young women, the BCYW Foundation has created a global support network that provides hope, knowledge, and strength to those in need.

In October 2024, the BCYW Foundation hosted the inaugural International Conference on Young Women's Breast Cancer in Lisbon. The conference addressed the unique challenges faced by young women with breast cancer. Key topics included risk factors, prevention, early detection, and improving the quality of life. Actress Sofia Ribeiro underscored the importance of emotional support and raising awareness among younger women. Breast cancer care extends beyond mere physical treatment; it also necessitates attention to emotional and mental well-being. Survivors, families, and healthcare providers stress the importance of trust and communication with doctors, as stress can influence cancer progression. Young women encounter frequently overlooked challenges, highlighting the need for further research. Advocating for emotional care, personalized treatments, and ongoing support is crucial for better outcomes. The conference also examined advancements in treatment, clinical trials, and the challenges young women face, including fertility and career concerns. To learn more, get involved, or donate, please visit: https://breastcancerinyoungwomen.org/

The Pink-Purple Ribbon: The pink ribbon is a globally recognized symbol of breast cancer awareness, representing the countless lives impacted by this disease. Younger women diagnosed with breast cancer face unique and significant challenges, as the illness often interferes with their careers, dreams of motherhood, and long-term life plans. To honour their experiences and resilience, the BCYW Foundation introduced the Pink-Purple Ribbon. This symbol embodies their determination to overcome the disease, empowers others with essential knowledge about self-breast care and prevention, and celebrates the courage of these young women as they confront breast cancer.

The Pink-Purple Ribbon serves a dual purpose: it raises awareness of the disease and the unique challenges vounger women face while empowering this demographic with the knowledge required for early detection when treatment is most effective. Its thoughtful design features a silhouette of a woman gracefully soaring, symbolizing her journey through breast cancer and her fight to reclaim her strength and health.

The purple hue dominates the ribbon, symbolizing the youthfulness and specific struggles of younger women battling breast cancer. Purple also represents dignity, equality, and justice-values that resonate with their global fight against this disease. White waves incorporated alongside the woman's figure reflect strength, boldness, courage, and resilience, while stars in the design serve as beacons of hope, illuminating a path toward a brighter future.

The Pink-Purple Ribbon honors the unwavering strength of these courageous individuals. It brings communities together in the global fight against breast cancer, promoting awareness, solidarity, and support. Acknowledging the unique challenges faced by young women, the BCYW Foundation encourages cancer organizations worldwide to adopt and promote the Pink-Purple Ribbon alongside the traditional pink ribbon, enhancing its message of hope and empowerment.

Global Youth Council for Breast Health: The Global Youth Council for Breast Health (YCBH), an initiative of the BCYW Foundation, is changing how young adults perceive breast health. Through local chapters at universities and colleges, YCBH empowers students by offering essential resources and current knowledge to prevent breast cancer, create supportive networks, and enhance outcomes for young women diagnosed with the disease.

As the World Health Organization projects an increase in breast cancer cases among women under 39 by 2050, and with the average age of diagnosis anticipated to drop to 33.72 years by 2040, the urgency for action has never been greater. This suggests that today's 17and 18-year-olds may receive breast cancer diagnoses within the next two decades. Proactive measures, such as targeted awareness campaigns and prevention strategies, are essential to tackle this growing risk and improve long-term outcomes.

The YCBH program reaches beyond campu-

ses, including workplaces with young female employees and community networks. It emphasizes year-round awareness of breast health, addresses the prevalence of breast cancer among young women, and promotes risk reduction through self-care practices and significant lifestyle changes. These initiatives aim to empower young women to take charge of their health, significantly improving future outcomes.

A Fundação BCYW (Breast Cancer in Young Women) é uma organização internacional sem fins lucrativos dedicada a reduzir o impacto do cancro da mama nas mulheres jovens através de educação, investigação e apoio. A sua missão é salvar vidas, promovendo a detecão precoce, tratamentos adequados e financiando pesquisas inovadoras que beneficiem diretamente as jovens pacientes. A fundação criou uma plataforma global que conecta mulheres jovens com cancro da mama, proporcionando recursos vitais e amplificando as vozes de sobreviventes, como a atriz Sofia Ribeiro, que destacou a importância do apoio emocional e da consciencialização entre as mulheres mais jovens. Em outubro de 2024, a fundação organizou a primeira Conferência Internacional sobre o Cancro da Mama em Mulheres Jovens em Lisboa, abordando os desafios únicos enfrentados por estas mulheres, incluindo questões de fertilidade, carreira e apoio emocional. Para honrar a resiliência das jovens com cancro da mama, a BCYW introduziu o símbolo do laco rosa-roxo, que representa a sua luta e determinação. A Fundação BCYW também criou o Conselho Global da Juventude para a Saúde da Mama, que visa aumentar a conscientização e promover medidas preventivas, essencialmente para melhorar os resultados das jovens diagnosticadas com a doença, especialmente com o aumento das taxas de cancro da mama entre mulheres jovens até 2050. Para saber mais, fazer parte ou fazer uma doação, por favor visite: https://breastcancerinyoungwomen.org/



Lisboa foi Palco da Primeira Conferência Internacional Sobre o Cancro da Mama em Mulheres Jovens.