

UNDERSTANDING BREAST CANCER RISK THE ROLE OF HRT AND LIFESTYLE CHOICES

MANY FACTORS CONTRIBUTE TO THE RISK OF BREAST CANCER

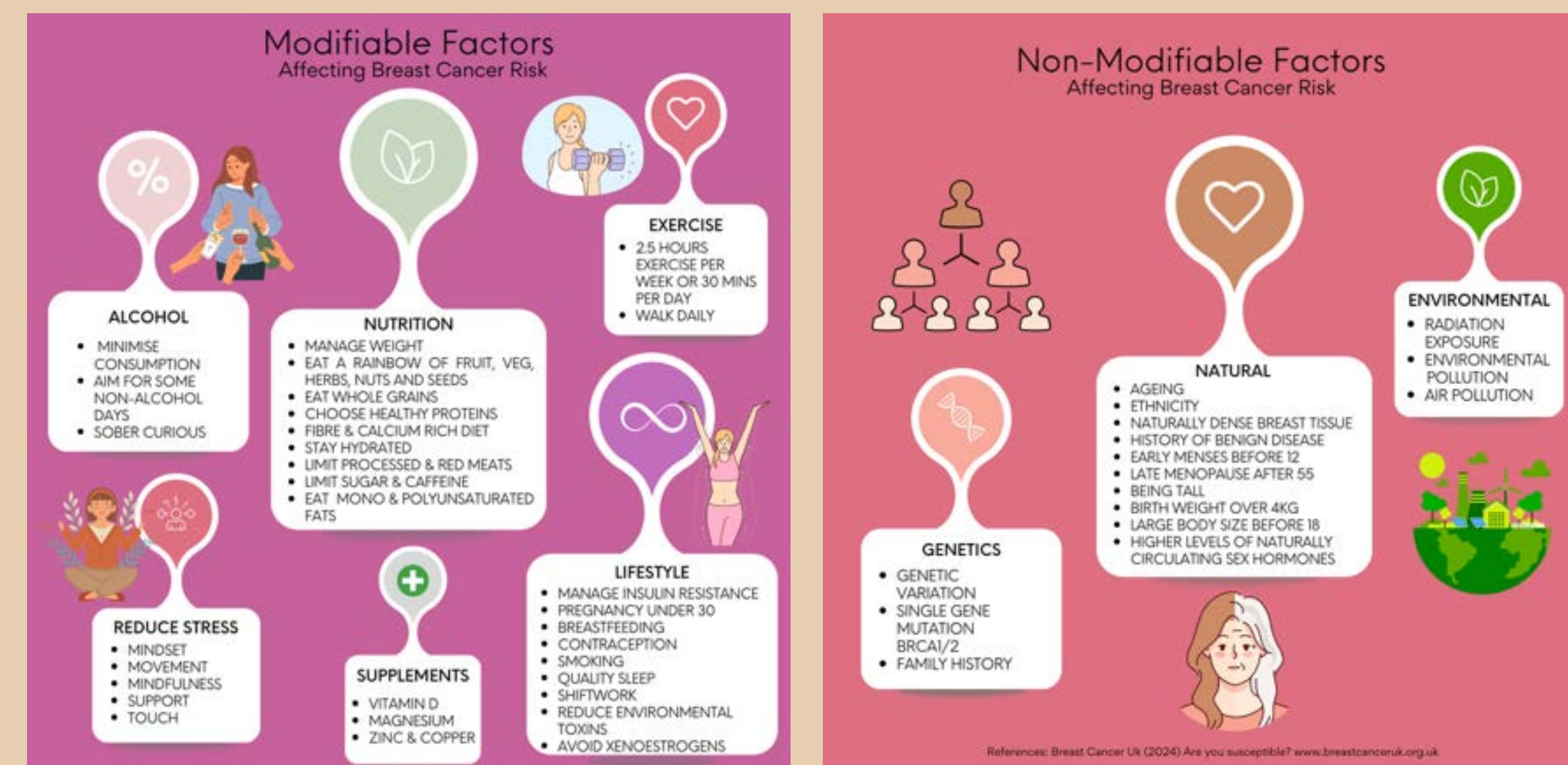
INTRODUCTION

Breast cancer remains a leading cause of cancer-related deaths in women worldwide. Despite advancements in treatment, understanding the factors influencing breast cancer risk is crucial for prevention and early detection.

The WHI report, published 22 years ago, continues to cast a long shadow, with women remaining apprehensive about HRT and breast cancer risk despite more recent research indicating a minimal increase in risk.

The positive news is that breast cancer mortality rates have decreased by 41% since 1970 and will continue to fall by 13% between 2023 and 2040. Nearly 76% of women diagnosed with breast cancer will live for more than 10 years.

HRT is only one factor which requires consideration in mitigating breast cancer risk, with modifiable and non-modifiable lifestyle factors impacting breast cancer occurrence.



Influences from traditional and social media have led to increased awareness and realisation of menopause, which consequently led to an increased search by struggling women for treatment such as HRT. The menopause revolution has also led to increased clinician knowledge, prescribing rates and research investment. Work still needs to be done to improve inequalities in menopause care.

Transversely, the omission of HRT may adversely affect lifestyle factors, contributing to mental health difficulties, maladaptive coping strategies and long-term health conditions.

Breast cancer treatment, often involving hormone therapy or surgery, can lead to severe menopausal symptoms and long-term health consequences, such as an increased risk of osteoporosis, heart disease, stroke, and Alzheimer's disease, particularly due to hormone deficiency.

METHODOLOGY

This poster was designed to clarify how HRT and lifestyle can affect breast cancer risk. By examining the complex interplay between these factors, we aim to empower women to make informed decisions about their health and reduce their risk of developing breast cancer.

A literature review was carried out of research and guidance, demonstrating the incidence and risks of breast cancer to various factors from 2009 to 2024.

Search

PubMed database and group review of online articles, guidelines and resources. Only English articles were included.

Keywords:

HRT, ageing, lifestyle, obesity, genetics, family history, alcohol, smoking, physical activity, breast cancer.

Number of articles:

A total of 5 articles were identified.

Analysis:

The most current and relevant articles were chosen, relating to HRT and risk of breast cancer and lifestyle and risk of breast cancer.



DISCUSSION

Many factors, not just HRT, contribute to the risk of breast cancer. The menopause consultation is the perfect opportunity to discuss these risk factors along with HRT choice and risk. The aim should be to improve overall health and reduce breast cancer risk where possible. We discuss the different risk factors that require consideration.

Natural Aging

Overall, age is the main risk factor for developing breast cancer (23/1000 in general population).

Untreated Menopause

Compared with never use, oestrogen only, and combined oestrogen and progesterone therapy were both associated with some increase risks of breast cancer.

Oestrogen only HRT

Breast cancer risks are extremely low with current and past long-term use of oestrogen only therapy.

Combined HRT - synthetic hormones

For progestogens, the increased risk was highest for norethisterone and lowest for dydrogesterone. Past short term (<5 years) use of oestrogen-progesterone were not associated with increased risk but risk increases with duration of use.

Bioidentical HRT

Equine oestrogen use is associated with a higher risk than bio-identical estradiol. Similarly, physiological and clinical data have indicated that progesterone is associated with a diminished risk, compared with synthetic progestins.

Family History

Risk is around twice higher in women with one first-degree relative with breast cancer and the risk increases with a larger number of affected first-degree relatives, or relatives affected aged under 50. For women with a family history most studies indicate that modifiable risk factors had no association with Breast Cancer.

Genetics

Women with a BRCA1 or BRCA2 mutation have a 45-65% chance of developing breast cancer by age 70. BRCA1/2 mutation-carriers have higher breast cancer risk compared with the general population in all age groups.

Alcohol

Breast cancer risk is higher in women who consume more than 2 units of alcohol per day, this risk increases with 4-6 units per day and is 60% higher in women who consume more than 6 units of alcohol per day, compared with non-drinkers.

Smoking

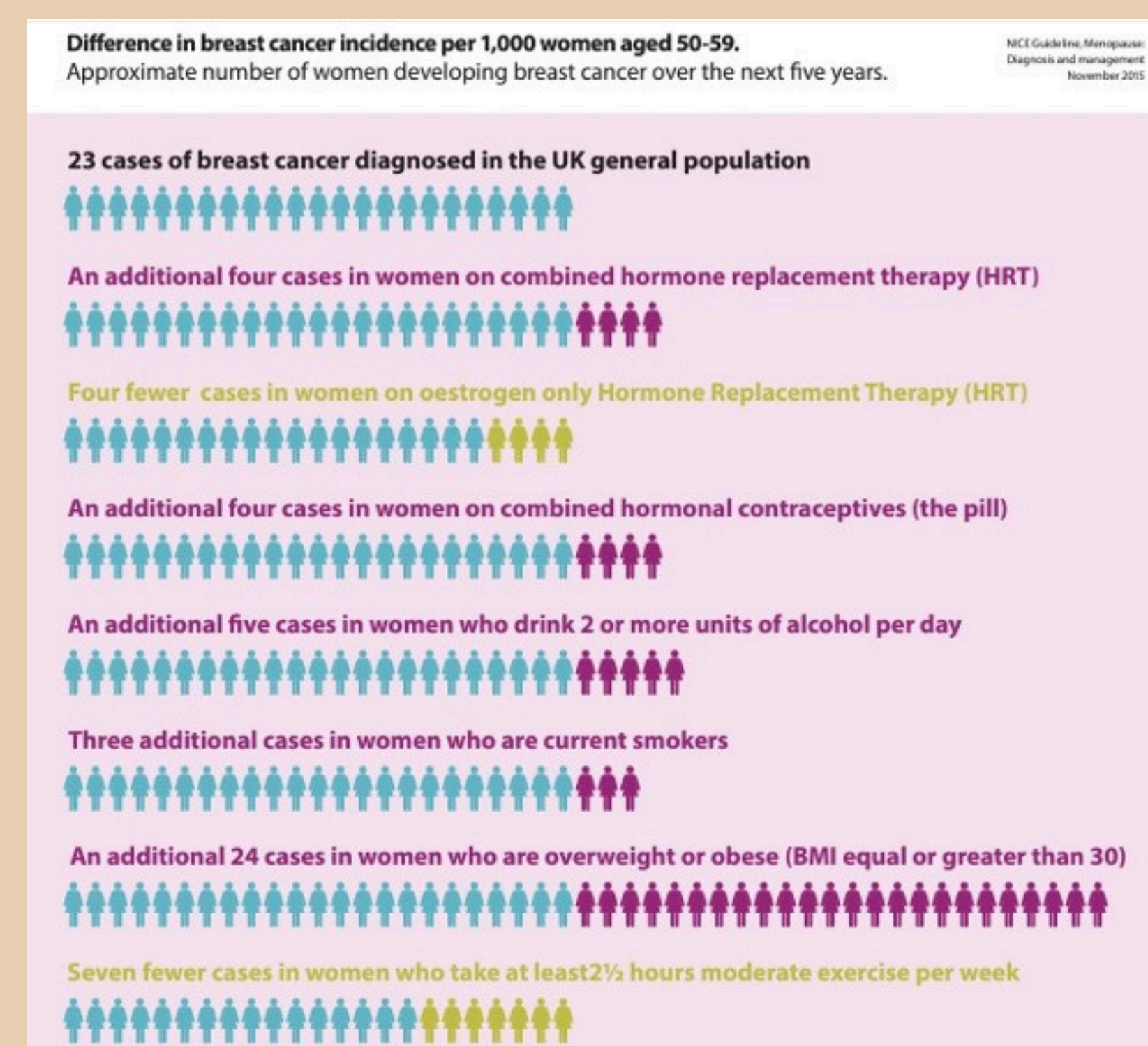
Tobacco smoking is associated with higher levels of sex hormones, which may partly explain the link between tobacco and breast cancer. Risk is higher in current and former smokers, compared with never-smokers. This worsens when compounded with alcohol.

Physical Activity

Breast cancer risk is 13% lower in women with the highest level of total physical activity compared to women with the lowest. Athletic training may lower the risk of breast and reproductive cancers. However, moderate exercising accumulating to 2.5 hours per week or more can significantly reduce risk.

Helping patients understand their risk

The Women's Health Concern Infographic can help women to understand their breast cancer risk when taking HRT and with different lifestyle choices. The drawback to this infographic is that it doesn't differentiate between synthetic and bioidentical forms of HRT. Therefore, more in depth discussion is required about the risk of different formulations.



23% of breast cancers are thought to be preventable through lifestyle

ONE in FOUR



PUBMED RESULTS

Search	Query	Filter	Results
1	Hormone replacement Therapy	Within the last 15 years	15,654
2	HRT		6,235
3	Breast Cancer		327,494
4	Lifestyle		174,968
5	Hormone Replacement Therapy, Breast cancer or Hormone Replacement Therapy AND Breast cancer		1,913
6	HRT, Breast cancer		490
7	Hormone Replacement Therapy, Breast cancer, Lifestyle or Hormone Replacement Therapy AND Breast Cancer AND Lifestyle		132
8	HRT, Breast Cancer, Lifestyle		39



These articles were screened for appropriateness. From this search and online research 5 resources are included in the results and discussion. A summary of these PUBMED articles are below. The Women's Health Concern infographic 'Breast cancer risk with HRT and lifestyle choices' was also included. It's application will be discussed.

Study	Key Focus	Findings	Relevance to HRT	Relevance to Lifestyle Factors
Collaborative Group for Hormonal Risk Factors (2019)	HRT and breast cancer risk	Combined oestrogen-progesterone therapy increases breast cancer risk by 53% for current users and by 34% for past users (≥5 years of use). Risk of oestrogen-only therapy increases by 17% with current use for ≥5 years.	Provides detailed risk quantification by type and duration of therapy.	Not applicable.
Women's Health Initiative Study (2020)	Long-term impact of MHT on breast cancer	Oestrogen-progesterone therapy increases breast cancer incidence (HR 1.29, 95% CI: 1.14–1.47). Oestrogen-only therapy reduces breast cancer risk (HR 0.78, 95% CI: 0.65–0.93) and lowers breast cancer mortality in some cases.	Confirms increased risk with combined therapy; suggests protective effects of oestrogen-only therapy in some groups.	Not applicable.
Dale et al. (2018)	Risky lifestyle behaviors and breast cancer	Women with 3 or more risky behaviors (e.g., smoking, alcohol, poor diet) have a 2.7 times higher risk of breast cancer compared to those with none. Alcohol consumption ≥15g/day increases risk by 10–20%.	Highlights how lifestyle factors compound risks, potentially influencing outcomes for HRT users.	Strong relevance: emphasizes reducing multiple risky behaviors to lower overall risk.
Eliassen et al. (2010)	Physical activity and breast cancer risk	Women engaging in ≥7 hours/week of moderate-to-vigorous physical activity had a 16% lower breast cancer risk compared to those with <1 hour/week. Risk reduction observed across BMI categories.	Encourages physical activity as a protective factor that could mitigate some risks associated with HRT use.	Strong relevance: underscores the protective effect of regular physical activity in reducing breast cancer risk.
Women's health concern infographic (2022)	Explaining lifestyle and HRT breast cancer risk	23 cases of breast cancer per 1,000 women aged 50-59. 4 extra cases for women taking combined HRT. 4 less cases for women taking oestrogen only HRT. 5 additional cases in women who drink 2 or more units of alcohol/day. 3 additional cases in smokers. 24 additional cases for women with a BMI of greater than 30. 7 fewer cases for women who do 2.5 hrs of physical exercise per week.	Puts HRT breast cancer risk into perspective compared to poor lifestyle choices.	Encourages women to improve lifestyle to reduce their risk of breast cancer.

CONCLUSION

Lifestyle measures are essential in the prevention of breast cancer. Physical inactivity, alcohol intake, smoking, overweight and obesity are vital factors that influence the risk of breast cancer among women. There is a relative risk of breast cancer with HRT. Breast cancer risk is higher when taking combined oestrogen and progesterone than oestrogen-only HRT. The type of progestin may also affect breast cancer risk. Limited observational data suggests that micronised progesterone may not be associated with additional risk. Prolonged HRT use increases breast cancer risk and reduces after stopping HRT. Additionally, equine oestrogen use is associated with a higher risk than bioidentical oestradiol.

In 2022 the UK was amongst the highest for global breast cancer rates. To change this alarming statistic, patient education is required. The menopause consultation can be the perfect opportunity to discuss breast cancer risk, but it can be tricky. Using visual representations should help them to understand and we recommend using the Women's Health Concern infographic from our discussion.

Even at the highest levels of HRT-associated risk, lifestyle factors—particularly with multiple factors, pose a greater overall risk. The cumulative impact of lifestyle factors such as smoking, alcohol intake, and physical inactivity can often exceed the risk associated with moderate duration of HRT use. Hence, lifestyle modifications are an essential preventive strategy. Addressing these modifications may be impossible in women suffering severe menopause symptoms without HRT being prescribed to control these first. This underscores the importance of a holistic approach to the patients treatment, where lifestyle changes can potentially have a more profound impact on reducing breast cancer incidence than the breast cancer risk from HRT itself.