

The ROYAL MARSDEN

NHS Foundation Trust

Chemoprevention for women at an increased risk of familial breast cancer

Cancer Genetics Unit

Patient Information



NHS

What is chemoprevention?

Chemoprevention describes drugs that are used to reduce the risk of cancer developing. This is different from chemotherapy, which describes drugs that are used in the treatment of cancer.

Who is at an increased risk of breast cancer?

Most women in the UK have a one in eight (12.5%) risk of developing breast cancer over their lifetime. A family history of breast cancer may mean your risk is higher, depending on the number and age that relatives were affected.

Why have I been given this leaflet?

Evaluation of your family history in a specialist clinic has shown that you are at an increased risk of developing breast cancer.

Guidance from NICE (National Institute of Clinical Excellence) published in March 2017 recommends that chemoprevention should be considered for women at increased risk of breast cancer based on their family history.

If you are a known carrier of *BRCA1* or *BRCA2*, please also read *A beginner's guide to BRCA1 and BRCA2* which is available to download from The Royal Marsden website and/or discuss with your Cancer Genetics team.

What types of chemoprevention can be used in women at increased risk of breast cancer?

Three drugs have been recommended by NICE: tamoxifen, anastrozole and raloxifene. Tamoxifen and raloxifene have anti-oestrogen properties and are also known as SERMS (selective oestrogen receptor modulators). Anastrozole is an aromatase inhibitor. Tamoxifen can be given to both pre and post-menopausal women, and raloxifene or anastrozole to post-menopausal women only.

Are tamoxifen, raloxifene and anastrozole licensed in the UK to reduce breast cancer risk?

No. These drugs are not currently approved in Europe for this purpose, however due to the new NICE recommendation they can be prescribed for this purpose.

How do chemoprevention drugs work?

Many breast cancers rely on the female sex hormone oestrogen to grow. These cancers are known as oestrogen-receptor positive (ER-positive) breast cancer. SERMS block the effect of oestrogen on the breast tissue (tamoxifen and raloxifene are both SERMS). Anastrozole is an aromatase inhibitor, which lowers the amount of oestrogen in the body. These drugs can make a breast cancer either grow more slowly or stop growing altogether.

SERMS and aromatase inhibitors have been used for many years in the treatment of women with breast cancer.

What are the potential benefits of chemoprevention?

Studies have demonstrated that chemoprevention reduces the risk of breast cancer developing in those women who are at high risk. Your actual reduction in risk will depend on many factors, including which chemoprevention drug is taken and your individual risk of breast cancer. If you are considering chemoprevention, you can discuss this further with your health professional.

Does chemoprevention reduce the risk of all breast cancers?

No. Chemoprevention has been shown to reduce the risk of developing oestrogen-receptor positive breast cancer, but not oestrogen-receptor negative breast cancer. Therefore we would not recommend chemoprevention to women at increased risk of oestrogen-receptor negative breast cancers, such as known *BRCA1* mutation carriers.

Does taking chemoprevention mean I will live longer?

Although the studies show a reduction in the occurrence of breast cancer, they did not show that women who took chemoprevention lived for longer than women who did not take chemoprevention.

Are there any side effects of chemoprevention?

Yes. There are both major and minor side effects to consider. These need to be considered alongside the potential benefits of chemoprevention.

What are the major side effects of chemoprevention?

Tamoxifen use is associated with a small increased risk of cancer of the womb (endometrial cancer). Both tamoxifen and raloxifene are associated with a small increased risk of blood clots (venous thromboembolism). Taking anastrozole may increase your risk of a bone fracture, but this has not been shown for certain.

What are the minor side effects of chemoprevention?

Common side effects include menopausal symptoms such as hot flushes and vaginal discharge or dryness. Some patients can experience mild nausea, weight gain, and muscle and joint pains. Many women find that the side effects of chemoprevention are significant enough to stop taking the medication. Studies report that about one in five women will stop taking chemoprevention due to the side effects.

Are there any medical reasons why I should not take chemoprevention?

- If you have a personal or family history of blood clots, you should not take tamoxifen or raloxifene.
- If you have a family history of womb cancer, you should not take tamoxifen.

- Women with fragile bones (osteoporosis) should not take anastrozole.
- You should not take chemoprevention drugs if you are on HRT (Hormone Replacement Therapy) or the contraceptive pill or are trying to conceive. These drugs can also interfere with the action of other drugs, so it is important for the prescribing doctor to know your drug history.
- You should not take chemoprevention drugs if you have had a bilateral mastectomy to reduce your risk of breast cancer; or if you have already had your ovaries removed.

At what age can chemoprevention be started?

We recommend that chemoprevention is not started prior to age 35.

How long can chemoprevention be taken?

A maximum of five years is recommended.

How do I decide if I want to take chemoprevention to reduce my risk of breast cancer?

The decision is ultimately a personal one and both the potential benefits and potential risks need to be taken into careful consideration. We recommend you read the decision guide produced by NICE, which has more detailed information about chemoprevention:

www.nice.org.uk/guidance/cg164/resources/taking-a-medicine-to-reduce-the-chance-of-developing-breast-cancer-decision-aid-for-postmenopausal-women-at-high-risk-pdf-4422436672

What alternatives are there to reduce your breast cancer risk?

There are established lifestyle risk factors associated with an increased risk of breast cancer that include being overweight, regularly drinking alcohol and not taking regular exercise.

Simple measures can be used to reduce your risk of developing breast cancer, such as maintaining a healthy weight, eating a balanced diet, keeping active and limiting alcohol intake.

If I decide I want to take chemoprevention, who will prescribe it?

We recommend tamoxifen, raloxifene or anastrozole to be prescribed by your GP, who can organise repeat prescriptions and discuss any side effects with you.

Should I still have breast screening if I take chemoprevention?

Yes. Although chemoprevention may reduce your risk of developing breast cancer, there is no way to determine if you will or will not get breast cancer in the future. Some women at increased risk of breast cancer due to their family history are eligible for increased breast screening, normally from the age of 40 years to detect cancer at an early stage. This screening should be continued even if chemoprevention is taken.

Will chemoprevention reduce my risk of ovarian cancer?

No. There is no evidence that chemoprevention will reduce your risk of ovarian cancer.

Key messages

- NICE guidelines recommend that chemoprevention with tamoxifen, raloxifene or anastrozole can be offered to some women at increased risk of familial breast cancer.
- Tamoxifen, raloxifene and anastrozole are not currently licensed for use as chemoprevention in the UK.
- Studies have shown that chemoprevention reduces the number of cases of breast cancer developing, but overall there is no impact on the number of deaths.
- Chemoprevention can be taken for a maximum of five years beginning after age 35.

- Use of chemoprevention can be associated with a number of major and minor side effects including increased risk of blood clots, womb cancer, menopausal symptoms and bone fractures.
- Women with a personal or family history of blood clots should not take tamoxifen or raloxifene.
- Women with a personal or family history of endometrial cancer (womb cancer) should not take tamoxifen.
- Chemoprevention drugs cannot be taken with HRT or the contraceptive pill, or when trying to conceive, during pregnancy or when breastfeeding.
- Chemoprevention should not be used by those who have already had bilateral mastectomies or removal of their ovaries.
- The benefits of chemoprevention are finely balanced with the potential side effects. The decision to take chemoprevention needs to be considered carefully.
- More information about the recommended use of chemoprevention drugs can be found in NICE guidelines CG164:
www.nice.org.uk/guidance/cg164

If you would like to discuss the option of chemoprevention with a health professional, please contact the genetics department at The Royal Marsden on **020 8661 3375**. Alternatively, if you have not been seen by the genetics team, please contact your breast screening team or your GP.

Notes and questions

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References

This booklet is evidence based wherever the appropriate evidence is available, and represents an accumulation of expert opinion and professional interpretation.

Details of the references used in writing this booklet are available on request from:

The Royal Marsden Help Centre

Telephone: Chelsea 020 7811 8438 / 020 7808 2083

Sutton 020 8661 3759 / 3951

Email: patientcentre@rmh.nhs.uk

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Should you require information in an alternative format, please contact The Royal Marsden Help Centre.

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