

Risk-reducing medication for women at increased risk of breast cancer due to family history



Australian Government
Cancer Australia

Frequently Asked Questions

This information has been developed for GPs to support a discussion about the use of risk-reducing medication* with a woman concerned about her risk of breast cancer due to family history.

What is risk-reducing medication?

Risk-reducing medication is an option to lower the risk of developing breast cancer for women identified to be at increased risk.

The most commonly used risk-reducing medications are tamoxifen and raloxifene, taken as a daily tablet for five years.

Tamoxifen and raloxifene belong to a group of medicines called Selective Estrogen Receptor Modulators (SERMs). They aim to reduce a woman's risk of developing oestrogen receptor-positive (ER+) invasive breast cancer by interfering with the actions of oestrogen on breast tissue.

However, there is no evidence that either tamoxifen or raloxifene reduce a woman's risk of developing oestrogen receptor-negative (ER-) invasive breast cancer.

When should risk-reducing medication be considered?

Risk-reducing medication may be considered for use by women who have been assessed as being at increased risk of breast cancer, based on family history. (This is less than 5% of the female population).

NB: There is limited evidence about women who carry a mutation in the BRCA1 or BRCA2 genes, as very few such women participated in the large trials of risk-reducing medication.

This consideration should only be made in the context of a discussion about all relevant management options, including surveillance (clinical and imaging) and risk-reducing surgery (if appropriate), taking into account the woman's individual risk category, age, stage of life and preferences.

Which women are at increased risk due to family history?

Key factors associated with increased risk due to family history include:

- multiple relatives affected by breast cancer or ovarian cancer on the same side of the family
- younger age at cancer diagnosis in relatives (i.e. under 40 years)
- relative with an identified mutation in a high-risk breast cancer gene, such as BRCA1 or BRCA 2
- relatives affected with bilateral breast cancer
- breast and ovarian cancer in the same relative
- Ashkenazi Jewish ancestry.

To assess whether a woman is at increased risk of breast cancer due to family history [Click here](#)

For women at moderately increased, high or potentially high risk of developing breast cancer due to family history, a more precise risk assessment, advice about genetic testing and an individualised management plan may be provided at a family cancer clinic.

What type of risk-reducing medication is available for women?

Tamoxifen and raloxifene are available on prescription in Australia but are not listed on the Pharmaceutical Benefits Scheme for the indication of risk reduction. This means the cost of these medications is not subsidised for this purpose.

Tamoxifen is an option for women who are pre- or post-menopausal and are at increased risk of breast cancer.

Raloxifene is an option only for post-menopausal women at increased risk of breast cancer.

The decision to use tamoxifen or raloxifene for a post-menopausal woman should be guided by an assessment of each woman's individual needs and existing co-morbidities, including osteoporosis.

What are the benefits?

Both tamoxifen and raloxifene reduce the risk of ER+ invasive breast cancer in women at increased risk. It is not currently known whether tamoxifen or raloxifene prolong survival when taken to reduce breast cancer risk.

A daily dose of 20mg of tamoxifen or 60mg of raloxifene for five years has been shown in clinical trials to reduce the risk by around 40%. The STAR trial, which compared tamoxifen and raloxifene for post-menopausal women at high risk of breast cancer, showed that tamoxifen was more effective than raloxifene in preventing breast cancer.

Both tamoxifen and raloxifene may help prevent osteoporosis and fractures in post-menopausal women.

Tamoxifen use has been shown to reduce the risk of breast cancer for at least 10 years, even when taken for only five years. The benefit of taking tamoxifen for more than five years for risk reduction is unknown and is not recommended.

Post-menopausal women with osteoporosis, for whom breast cancer risk reduction is an additional benefit, may take raloxifene for longer than five years.

*'Risk-reducing medication' is also referred to as 'preventive therapy', as proposed at the 11th International St Gallen Breast Cancer Conference, held in Switzerland in March 2010. Other terms in use include 'chemoprevention' and 'medical prevention'.

What are the risks?

Tamoxifen increases a woman's risk of endometrial cancer, thromboembolic events such as deep vein thrombosis, and cataracts.

Tamoxifen can increase the risk of endometrial cancer in post-menopausal women from about 1 in 1000 women per year to 2-3 in 1000 women per year of use. The rate of endometrial cancer does not appear to be increased in pre-menopausal women who take tamoxifen.

The extra risk of thromboembolic events in post-menopausal women is about 4 per 1000 women per year of tamoxifen use and less in pre-menopausal women. The risk may be further increased in women who smoke and women with a past history of blood clots. Although the risk of developing blood clots is relatively low, this is a serious and potentially life-threatening side effect. The risk of thromboembolic events returns to normal when tamoxifen is discontinued.

The most common side effects of tamoxifen are vasomotor symptoms, such as hot flushes and sweats, and gynaecological symptoms, such as vaginal discharge and dryness, and menstrual irregularities. These symptoms appear to decline when tamoxifen is discontinued.

Raloxifene also increases a woman's risk of thromboembolic events, such as stroke and deep vein thrombosis; however the risk of blood clots and cataracts is lower than with tamoxifen, and raloxifene does not appear to increase the risk of endometrial cancer.

The extra risk of thromboembolic events in post-menopausal women who take raloxifene is around 3 per 1000 women per year of raloxifene use. The risk of thromboembolic events may be further increased in smokers and women with a past history of blood clots. Although the risk of thromboembolic events is relatively low, this is a serious and potentially fatal side effect. The risk of thromboembolic events returns to normal when raloxifene is discontinued.

The most common side effects of raloxifene are leg cramps and vasomotor symptoms, such as hot flushes and sweats.

Immediate medical care is needed if there are signs or symptoms suggestive of a blood clot such as pain, tenderness, swelling in the calf, or severe unexplained breathlessness. Women should report any abnormal gynaecological symptoms such as abnormal vaginal bleeding, pelvic pressure or pain, to their doctor.

Women may need to stop taking tamoxifen or raloxifene prior to any surgery. This should be discussed with the specialist team.

Who should not use risk-reducing medication?

Tamoxifen and raloxifene are not recommended for some women, including those who:

- Have a history of deep vein thrombosis, pulmonary embolism, stroke or transient ischemic attack
- Require anticoagulants
- Smoke
- Have abnormal vaginal bleeding.

Tamoxifen is also not recommended for women who are pregnant, breastfeeding or planning a pregnancy during the time they would be on tamoxifen. Women who use tamoxifen prior to menopause should use a non-hormonal method of contraception (such as a non-hormonal IUD, condoms or a diaphragm).

What tests should be done prior to prescribing?

Any abnormal vaginal bleeding or other gynaecological symptoms should be investigated before starting tamoxifen.

What tests should be undertaken for women using risk-reducing medication?

- Routine screening of asymptomatic women taking tamoxifen, using either ultrasound or endometrial biopsy, is not recommended.
- Any woman complaining of symptoms such as intermenstrual or post-menopausal bleeding, abnormal vaginal discharge or pelvic pain should be actively investigated immediately.

Reference: The Royal Australian and New Zealand College of Obstetricians and Gynaecologists College Statement, 2009. Go to <http://www.ranzcog.edu.au/womens-health/statements-a-guidelines/college-statements/475-tamoxifen-and-the-endometrium-c-gyn-12.html>

All women should be encouraged to be aware of the normal look and feel of their breasts and to promptly report any persistent or unusual changes.

For more information about the evidence on risk-reducing medication [Click here](#)

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