

# GOSERELIN (ZOLADEX)



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Steered by our world-class research and powered by our life-changing care, Breast Cancer Now is here for anyone affected by breast cancer, the whole way through, providing support for today and hope for the future.

Our breast care nurses, expertly trained staff and volunteers, and award-winning information is all here to make sure anyone diagnosed with breast cancer gets the support they need to help them to live well with the physical and emotional impact of the disease.

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This booklet explains what goserelin is, when it may be prescribed, how it works and what side effects may occur. Goserelin is the generic (non-branded) name of the drug and how it's referred to in this booklet. Its current brand name is Zoladex.

## WHAT IS GOSERELIN?

Goserelin is a type of hormone (endocrine) therapy used as part of treatment for breast cancer in pre-menopausal women (women who have not yet been through the menopause). It's given as an injection into the abdomen (belly).

It can also be used to try to help preserve fertility during chemotherapy, as chemotherapy can cause damage to the ovaries (see page 6).

## GOSERELIN AS A TREATMENT FOR BREAST CANCER

### How does it work?

Some breast cancers use oestrogen in the body to help them to grow. These are known as oestrogen-receptor positive or ER+ breast cancers.

Hormone therapies block or stop the effect of oestrogen on breast cancer cells. Goserelin will only be prescribed if your breast cancer is ER+.

Invasive breast cancers are tested to see if they are ER+ using tissue from a biopsy or after breast surgery.

Before the menopause, oestrogen is mainly produced in the ovaries. Goserelin switches off this production by interfering with hormone signals from the brain that control how the ovaries work. This is known as ovarian suppression. You may also hear it called ovarian function suppression or ovarian ablation.

Within about three weeks of the first goserelin injection, your oestrogen levels will be lowered to a level similar to that of a post-menopausal woman (a woman who has been through the menopause) and your periods will normally stop.

Ovarian suppression can help to reduce the risk of the breast cancer coming back (recurrence) or a new breast cancer developing (a new primary breast cancer).

Evidence suggests that women who remain pre-menopausal after chemotherapy may benefit most from ovarian suppression. Older pre-menopausal women (aged 35 and over) may not get as much benefit from ovarian suppression after chemotherapy.

Women who are not recommended to have chemotherapy as part of their treatment plan are less likely to be offered ovarian suppression.

Your specialist will talk to you about whether ovarian suppression may be of benefit to you.

## WHEN IS GOSERELIN PRESCRIBED?

### Primary breast cancer

Goserelin is used to treat some pre-menopausal women with ER+ primary breast cancer (breast cancer that has not spread beyond the breast or the lymph nodes under the arm).

Goserelin may be given on its own or with another hormone therapy such as tamoxifen or drugs known as aromatase inhibitors (anastrozole, exemestane and letrozole). See below and our website or individual booklets for more information on tamoxifen and aromatase inhibitors.

### Secondary breast cancer

Goserelin can also be given to treat premenopausal women with ER+ breast cancer that has spread to another part of the body (secondary breast cancer).

Goserelin may be given on its own or, more commonly, with other types of hormone therapy such as tamoxifen and aromatase inhibitors. See the section below and our website or individual booklets for more information on hormone therapy .

## **GOSERELIN COMBINED WITH TAMOXIFEN OR AROMATASE INHIBITORS**

Goserelin is often combined with another hormone therapy such as tamoxifen or drugs known as aromatase inhibitors (anastrozole, letrozole and exemestane). Research has suggested this may reduce the risk of the breast cancer coming back for some pre-menopausal women who have had chemotherapy.

There may be a small extra benefit of having an aromatase inhibitor over tamoxifen but there might be different side effects to consider that can affect your quality of life. Your specialist will help you discuss the possible benefits and side effects.

Aromatase inhibitors are not used on their own as hormone therapy in premenopausal women because they're not an effective treatment while the ovaries are still making oestrogen, but they can be given alongside goserelin. Your treatment team will discuss with you what they recommend and why.

See our website or individual booklets for more information on aromatase inhibitors and tamoxifen.

## **PRESERVING FERTILITY DURING CHEMOTHERAPY**

Chemotherapy can cause damage to the ovaries, reducing the number or quality of eggs and affecting a woman's ability to become pregnant. The likelihood of you losing your fertility after chemotherapy depends on the type of drugs used, the dose given, your age and what your fertility was like before breast cancer treatment.

Some studies have shown that ovarian suppression using hormone therapy drugs like goserelin may protect the ovaries during chemotherapy as it temporarily ‘shuts down’ the ovaries. However, the effectiveness of goserelin as a method of preserving fertility is still debated. It cannot replace other fertility preservation methods such as egg and embryo freezing.

Further research is needed to establish the role of ovarian suppression during chemotherapy to preserve fertility.

Goserelin is not suitable during pregnancy or while breastfeeding.

For more information about preserving fertility see our **Fertility, pregnancy and breast cancer** booklet.

## HOW IS GOSERELIN GIVEN?

Goserelin comes as an implant (a very small pellet) in a pre-filled syringe. It is given as a subcutaneous injection (an injection into the fatty tissue under the skin) into your abdomen. You may be given this injection as an outpatient at the hospital by your breast care nurse or at your GP practice. You may find it easier to make an appointment for your next dose after each injection so it’s given at the right time.

Some people find the injection uncomfortable. You can be prescribed a local anaesthetic cream to numb the skin before the injection to reduce any discomfort. However, after the cream has been applied you will need to wait for at least an hour before the area is numb, so it’s important to ask about using this cream well in advance of your injection so it can be arranged in time.

For primary breast cancer, it is recommended that goserelin is given every 28 days (four weeks). The injection is called a ‘depot injection’, which means that the drug is steadily released into the bloodstream over the four weeks.

Goserelin is also available as a three-monthly injection for the treatment of other types of cancer. However, having goserelin in this way is not usually recommended for treating breast cancer

as there is not enough evidence that it suppresses oestrogen levels enough. This is particularly important if you are having goserelin alongside an aromatase inhibitor (see page 6).

Goserelin may be given less frequently for secondary breast cancer. Your specialist can talk to you about this in more detail.

## HOW LONG WILL I BE GIVEN GOSERELIN FOR?

If you have primary breast cancer and are having goserelin as part of your breast cancer treatment, it is usually given for up to five years or sometimes longer. If you have secondary breast cancer, you will be given goserelin for as long as it keeps the cancer under control.

If you are having goserelin to try to preserve fertility, an injection of goserelin is usually given before chemotherapy starts, then every four weeks during chemotherapy, and a last injection after the final chemotherapy treatment.

## WHAT HAPPENS IF I MISS AN INJECTION?

If you miss an injection, try to have it as soon as possible.

## WILL GOSERELIN AFFECT MY PERIODS?

During early treatment with goserelin some women may have some vaginal bleeding. If your periods continue, tell your treatment team as your ovaries may not be suppressed.

Within three weeks of the first injection, your oestrogen will be lowered to a level similar to that of a post-menopausal woman and your periods will normally stop. This effect is temporary and will only last for as long as you are having goserelin.

When you stop having goserelin, your ovaries will usually start to produce oestrogen again. Most women's periods will start again within three to twelve months after finishing treatment. However, if you're approaching the age of natural menopause, your ovaries may not start working again.

If you are concerned about going through an early menopause or would like to have children, you can discuss with your treatment team how long to continue goserelin.

## DO I NEED TO USE CONTRACEPTION WHILE I'M TAKING GOSERELIN?

You are advised not to become pregnant while you are having goserelin because the drug could harm a developing baby. It is possible to become pregnant while having goserelin, even if your periods have stopped or become irregular.

Use a non-hormonal method of contraception to avoid getting pregnant, such as condoms, Femidoms or a diaphragm. It may also be possible to use a coil (IUD or intrauterine device). However, you would need to discuss this with your specialist as not all types are suitable for women with breast cancer.

## WHAT ARE THE POSSIBLE SIDE EFFECTS OF GOSERELIN?

Like any drug, goserelin can cause side effects. Everyone reacts differently to drugs and some people have more side effects than others. Having few or no side effects does not mean the drug is not effective. As goserelin can be given in addition to chemotherapy or other hormone therapies, it is sometimes difficult to know which side effects are being caused by which treatment.

For many people, side effects improve within the first few months of starting treatment. However, for some people they may cause distress and disrupt everyday life. If you have any side effects, whether they are listed in this booklet or not, talk to your GP or treatment team about how best to manage them.

## Common side effects

### Menopausal symptoms

The most common side effect of goserelin are menopausal symptoms such as hot flushes, night sweats, vaginal dryness and a decrease in libido (sex drive). Although these symptoms may be quite intense in the beginning, they usually improve over time.

To find out more about coping with menopausal symptoms, see our **Menopausal symptoms and breast cancer** booklet.

After goserelin has been given, you may notice an area of redness or bruising at the injection site, but this should disappear within a few hours. Occasionally, bruising may be there for a few days.

Some women notice a change in their breast size. Acne (spots) is another commonly reported side effect that can appear on any part of the body.

## Less common side effects

Less common side effects include headaches, and tingling in fingers and toes. Some people have also reported weight gain, tiredness and nausea (feeling sick).

### Low mood and depression

Some people experience low mood or depression. Talk to your GP or treatment team about how to manage a change in mood. Counselling, mindfulness and regular exercise can be helpful. Your GP or specialist can refer you for counselling or may suggest you take an antidepressant drug. Your breast care nurse may also be able to help or tell you about support services in your local area.

## Vaginal bleeding

During the first month of treatment you may have some vaginal bleeding caused by the withdrawal of the hormone oestrogen.

## Joint pain and stiffness

When first starting goserelin treatment, some people notice joint pain and stiffness. This is due to the reduced oestrogen levels and often improves over time, although for some it is more severe and longer lasting. It can usually be relieved with mild pain relief like paracetamol or an anti-inflammatory drug such as ibuprofen. Before using anti-inflammatory pain relief, ask your treatment team about the correct dose, how long you should use it for and any possible side effects, especially if you have a stomach ulcer or asthma.

## Hair and skin changes

Goserelin can sometimes cause hair thinning. This is usually mild. People do not always tell their treatment team about hair thinning when they are having hormone therapy so it is difficult to know how common this is. Some people also report a mild skin rash.

## Blood pressure changes

Changes in blood pressure may occur. Blood pressure can be higher or lower than normal, but does not normally need treatment or mean that goserelin has to be stopped.

## Osteoporosis (thinning of the bone)

Lack of oestrogen over a long period of time can cause thinning of the bones (osteoporosis). Your treatment team may suggest a DEXA (dual energy x-ray absorptiometry) scan to check your bone mineral density before you start goserelin.

Your treatment team will follow guidance from expert organisations when deciding whether to recommend a DEXA scan. Guidance recommends that people with early invasive breast cancer should have a DEXA scan if they are not having bisphosphonate treatment and are starting ovarian suppression therapy.

If you are concerned about your risk of developing osteoporosis, talk to your treatment team.

For more information see our **Osteoporosis and breast cancer treatment** booklet.

### **Tumour flare**

If you are given goserelin to treat secondary breast cancer in the bone, you may have an increase in your symptoms for a short time following the start of treatment (sometimes referred to as ‘tumour flare’).

### **High levels of calcium in the body**

In rare cases some people with secondary breast cancer may have a temporary increase in the level of calcium in the blood. This can cause symptoms such as nausea (feeling sick), vomiting (being sick), constipation or drowsiness. If you experience any of these symptoms, contact your treatment team.

If you have persistent side effects from goserelin, tell your treatment team so that they can decide how best to manage them.

# FOUR WAYS TO GET SUPPORT

We hope this information was helpful, but if you have questions, want to talk to someone or read more about breast cancer, here's how you can.



Speak to our nurses or trained experts. Call our free Helpline on **0808 800 6000** (Monday to Friday 9am–4pm and Saturday 9am–1pm). The Helpline can also put you in touch with someone who knows what it's like to have breast cancer.



Chat to other women who understand what you're going through in our friendly community, for support day and night. Look around, share, ask a question or support others at **[forum.breastcancer.org](https://forum.breastcancer.org)**



Find trusted information you might need to understand your situation and take control of your diagnosis or order information booklets at **[breastcancer.org](https://breastcancer.org)**



See what support we have in your local area. We'll give you the chance to find out more about treatments and side effects as well as meet other people like you. Visit **[breastcancer.org/in-your-area](https://breastcancer.org/in-your-area)**

# SUPPORT FOR TODAY HOPE FOR THE FUTURE

We believe that we can change the future of breast cancer and make sure that, by 2050, everyone diagnosed with the disease lives – and is supported to live well. But we need to act now.

If you found this booklet helpful, use this form to send us a donation.

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Donate using your debit or credit card [breastcancer.org/donate](https://breastcancer.org/donate)

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## Keeping in touch with Breast Cancer Now

We'd like to tell you ways you can help further, including through donating, fundraising, campaigning and volunteering, and send you updates on our research, the support we provide, breast health information and our wider work to achieve our aims.

If you already hear from us, we will continue to contact you in the same way. If you don't already hear from us, please tick the box if you are happy to be contacted by:

- Email
- Mobile messaging

**Please return this form to Breast Cancer Now, Freepost RTSC-SJTC-RAKY, Fifth Floor, Ibx House, 42–47 Minories, London EC3N 1DY**

### How we use your information

From time to time, we may contact you by telephone and post to keep you updated on our work and ways you can help. You can change the way you hear from us at any time by emailing us at [supporterengagement@breastcancer.org](mailto:supporterengagement@breastcancer.org) or calling us on 0333 20 70 300.

To help us to work more efficiently, we may analyse your information to make sure you receive the most relevant communications, and to target our digital advertising. This may include using publicly available information. You can ask us to stop this at any time, by contacting us using the above contact details. You can read more about how we will use your information on our website at [breastcancer.org/privacy](https://breastcancer.org/privacy), or contact us if you'd like a paper copy.



# ABOUT THIS BOOKLET

Goserelin (Zoladex) was written by Breast Cancer Now's clinical specialists, and reviewed by healthcare professionals and people affected by breast cancer.



For a full list of the sources we used to research it:  
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# BREAST CANCER

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At Breast Cancer Now we're powered by our life-changing care. Our breast care nurses, expertly trained staff and volunteers, and award-winning information make sure anyone diagnosed with breast cancer can get the support they need to help them to live well with the physical and emotional impact of the disease.

We're here for anyone affected by breast cancer. And we always will be.

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