

GOSERELIN (ZOLADEX)

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About this booklet

It's understandable to have questions when you've been prescribed a drug like goserelin.

This booklet explains what goserelin is, when it may be prescribed, how it works and what side effects you might have.

What is goserelin?

Goserelin is a type of hormone (endocrine) therapy. You may hear it called by its brand name Zoladex.

It's used as part of treatment for breast cancer in women who have not yet been through the menopause (pre-menopausal women).

It can also be used to try to preserve fertility during chemotherapy, as chemotherapy can cause damage to the ovaries (see page 5).

How does goserelin work?

How goserelin works

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

Goserelin will only be prescribed if your breast cancer is ER-positive, unless you're having it to try to preserve fertility.

Before the menopause, oestrogen is mainly produced in the ovaries. Goserelin interferes with hormone signals from the brain that control how the ovaries work, switching off the production of oestrogen. This lowers oestrogen levels in the body, which may stop breast cancer cells from growing.

This is called ovarian suppression, but you may also hear it called ovarian function suppression (OFS) or ovarian ablation.

Why it's given

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

Goserelin is also used in treatment for secondary breast cancer.

Who might benefit from having goserelin?

If you're still pre-menopausal after chemotherapy, you could benefit the most from ovarian suppression. Younger women may get the greatest benefit from goserelin, so you might not get as much benefit from ovarian suppression if you're over 35.

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

When is goserelin prescribed?

Goserelin as treatment for breast cancer

Primary breast cancer

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

It's usually given with another hormone therapy, such as tamoxifen or an aromatase inhibitor. See more information on page 4.

If you're having goserelin as part of your breast cancer treatment for primary breast cancer, it's usually given for 5 to 10 years, depending on the features of your breast cancer and your menopausal status.

Secondary breast cancer

Goserelin is also used to treat pre-menopausal women with ER-positive breast cancer that has spread to another part of the body (secondary breast cancer).

It can be used on its own, but it's more commonly used with another hormone therapy, such as tamoxifen or an aromatase inhibitor. See more information below.

If you have secondary breast cancer, you will have goserelin for as long as it keeps the cancer under control.

Goserelin with tamoxifen or aromatase inhibitors

Having goserelin with another hormone therapy may reduce the risk of the breast cancer coming back for some pre-menopausal women who have had chemotherapy.

Goserelin is commonly given with tamoxifen or an aromatase inhibitor (anastrozole, exemestane and letrozole).

Your specialist will discuss the possible benefits and side effects of having goserelin with tamoxifen or an aromatase inhibitor.

If you're having goserelin with an aromatase inhibitor, you will start goserelin 6 to 8 weeks before starting treatment with an aromatase inhibitor. You should continue having goserelin while you're taking the aromatase inhibitor.

Aromatase inhibitors are not used on their own as hormone therapy in pre-menopausal women. This is because they're not an effective treatment while the ovaries are still making oestrogen. However, aromatase inhibitors 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.

Goserelin for preserving fertility during chemotherapy

Chemotherapy can cause damage to the ovaries. This can reduce the number or quality of eggs and affect your ability to become pregnant.

Whether your fertility is affected after chemotherapy depends on:

- The type of drugs used
- The dose given
- Your age
- What your fertility was like before breast cancer treatment

Some studies have shown that using hormone therapy drugs like goserelin to suppress the ovaries may protect them during chemotherapy. This is because goserelin temporarily “shuts down” the ovaries.

However, we don’t know how effective goserelin is as a method of preserving fertility. It cannot replace other methods such as egg and embryo freezing.

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

If you’re having goserelin to try to preserve fertility, you will usually have an injection of goserelin before chemotherapy starts, then every 4 weeks during chemotherapy. The last injection is after the final chemotherapy treatment.

You will not be able to take goserelin during pregnancy or while breastfeeding.

How is goserelin given?

Goserelin comes as an implant (a very small pellet) in a pre-filled syringe.

You will have it as an injection into the fatty tissue under the skin into your belly (abdomen). This is called a subcutaneous injection.

Having surgery to the abdomen, such as a DIEP reconstruction, should not stop you having goserelin. But talk to your treatment team if you have concerns about how the injection is given.

Your treatment team will give you the first injection at the hospital. You will usually have the next injections 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. Your doctor can prescribe you a local anaesthetic cream to numb the skin before the injection. This will reduce any discomfort. However, you will need to wait for at least 1 hour after the cream has been applied before the area is numb. It's important to ask about using this cream well in advance of your injection so it can be arranged in time.

It's recommended that goserelin is given every 28 days (4 weeks). The injection is called a "depot injection", which means the drug is steadily released into the bloodstream over the 4 weeks.

Goserelin is also available as a 3-monthly injection. Your treatment team can advise whether this is the best option for you.

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.

As goserelin can be given in addition to chemotherapy or other hormone therapies, it's 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, this may not be the case for you.

If you have any side effects while taking goserelin, whether they are listed below or not, talk to your GP or treatment team about how best to manage them.

Common side effects

Menopausal symptoms

Menopausal symptoms are the most common side effect of goserelin. These include:

- Hot flushes
- Night sweats
- Vaginal dryness
- A decrease in sex drive (libido)

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.

Other common side effects

Other common side effects include:

- Soreness at the injection site
- Change in breast size
- Spots (acne)
- Joint pain and stiffness
- Hair and skin changes
- Headaches
- Blood pressure changes (this does not usually need treatment)

Less common side effects

Low mood and depression

Some people experience low mood or depression when taking goserelin.

You can 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 and 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

You may have some vaginal bleeding during the first month of treatment. This is caused by the withdrawal of the hormone oestrogen. This is normal, but let your treatment team know if it continues.

Osteoporosis (thinning of the bone)

Lack of oestrogen over a long period of time can cause osteoporosis (when bones lose their strength and are more likely to break).

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 when deciding whether to recommend a DEXA scan.

Guidance recommends people with early invasive breast cancer should have a DEXA scan if they're not having bisphosphonate treatment and are starting ovarian suppression. Bisphosphonates are drugs that slows down or prevent loss of bone tissue.

If you're 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're 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. This is 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 their blood. This can cause symptoms such as:

- Feeling sick (nausea)
- Being sick (vomiting)
- Constipation
- Drowsiness

If you have any of these symptoms, contact your treatment team.

Other less common side effects

Other less common side effects include:

- Tingling in fingers and toes
- Weight gain
- Tiredness
- Feeling sick

Other important information

What happens if I miss an injection?

If you miss an injection, speak to your treatment team as soon as possible. It's important to have your goserelin injections on time to make sure your ovaries remain suppressed. This will make goserelin as effective as possible.

Will goserelin affect my periods?

You may have some vaginal bleeding during early treatment with goserelin. Tell your treatment team if your periods continue, as your ovaries may not be suppressed.

Within 3 weeks of the first injection, your oestrogen will be lowered to a level similar to if you had been through the menopause. Your periods will normally stop. This effect is temporary and will only last for as long as you're having goserelin.

Depending on your age when you stop having goserelin, your ovaries will usually start to produce oestrogen again. Most women's periods will start again within 3 to 12 months of finishing treatment. However, if you have had chemotherapy, or if you're approaching the age of natural menopause, your ovaries may not start working again.

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

Do I need to use contraception while I'm taking goserelin?

You're advised not to become pregnant while you're having goserelin. This is because the drug could harm a developing baby.

You can still become pregnant even if your periods have stopped or have become irregular. You should use a non-hormonal method of contraception, such as condoms, to avoid getting pregnant.

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.

Further support

If you'd like any further information on goserelin or just want to talk things through, our nurses are ready to listen on our free helpline. Call **0808 800 6000** (Monday to Friday 9am to 4pm and Saturday 9am to 1pm).

We're Breast Cancer Now, the research and support charity. However you're experiencing breast cancer, we're here.

Life-changing support

Whoever you are, and whatever your experience of breast cancer, our free services are here. Whether you're worried about breast cancer, dealing with a diagnosis, working out life with or beyond treatment – or someone you love is.

World-class research

We support over 290 of the brightest minds in breast cancer research. They're discovering how to prevent breast cancer, live well with the disease, and save lives. Every day, they get closer to the next breakthrough.

Change-making campaigns

We fight for the best possible treatment, services and care for everyone affected by breast cancer, alongside thousands of dedicated campaigners.

Could you help?

We don't get any government or NHS funding for our support services or health information. So, we rely on donations and gifts in wills to make our vital work happen. If you'd like to support us, go to breastcancer.org/give

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:
Email health-info@breastcancer.org



You can order or download more copies from
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BREAST CANCER NOW

The research &
support charity

Information you can trust, support you can count on

Whatever breast cancer brings, we're here for you.

Whether you're looking for information about breast cancer or want to speak to someone who understands, you can rely on us.

Call **0808 800 6000** to talk things through with our helpline nurses.

Visit **breastcancer.org** for reliable breast cancer information.

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