

# Bone Metastases

Westmead Breast Cancer Institute



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This fact sheet is for women who have been diagnosed with breast cancer that has been found in the bones. Deposits of cancer in bones are called 'bone metastases' or 'bone secondaries'.

This information is a general guide. Because every woman's cancer is different, the symptoms, treatment and prognosis varies from one person to another. You should speak to your doctor for detailed information about your specific situation.

## What is a metastasis?

'Metastasis' is a word that describes the spread of cancer from its original site (the primary site, or where the cancer started) to another part of the body. Metastasis happens when cells break away from the original cancer site and travel to other areas of the body through the bloodstream or the lymph system. Cancer cells then settle in different tissues or organs, where they grow and form a new tumour (the secondary deposit). When breast cancer is found in parts of the body other than the breast it is called 'metastatic breast cancer.'

A bone metastasis from breast cancer is made up of breast cancer cells. Bone is one of the most common places for breast cancer to spread.

## What are the symptoms of bone metastases?

If your breast cancer spreads to the bones, you may experience some of the symptoms described below. Symptoms may vary depending on the location and size of the cancerous deposit. Sometimes bone metastases don't cause any symptoms at all and they are picked up on a routine scan. It is also possible for some metastases and not others to be bothersome. Symptoms may develop over weeks or months. It's very important for you to tell your doctors and nurses about any new symptoms or any change in symptoms.

### Pain

Pain is the most common symptom of bone metastases. It tends to be a constant, aching pain that may be worse during activity and can cause sleeping difficulties. Bone pain from cancer tends to be quite different from the pain caused by common conditions such as arthritis or muscular strains. However, in the early stages, it may be difficult for you and your doctor to tell the difference between these types of pain. Most of the time, aches and pains that women experience after they have had treatment for breast cancer are not related to bone secondaries.



## Fracture (broken bone)

Cancer deposits can weaken a bone and this can cause the bone to break (fracture). When there is cancer in a bone, it can break without much force. This can happen after a fall or injury, but may also simply happen during everyday activities causing sudden, severe pain. Some fractures may be prevented or treated with surgery and/or radiotherapy.

## Spinal cord compression

Cancer in the bones of the spine (called the vertebrae) can cause pressure on the nerves that travel through the spinal cord. Symptoms of spinal cord compression can include:

- > persistent pain in the back that may be worse with coughing, sneezing or straining
- > numbness or weakness in the legs, causing difficulty with walking
- > difficulty controlling the bladder or the bowel
- > paralysis (rarely).

**If you notice any of these symptoms you should seek medical attention immediately.**

Early treatment of this condition is essential to prevent long-term damage or paralysis. A magnetic resonance imaging (MRI) scan must be done quickly to see if the cancer in the bone of your spine is pressing on your spinal cord. If there is compression, urgent radiotherapy and sometimes surgery to 'decompress' the area is required.

## Hypercalcaemia (high calcium)

Cancer in the bone can increase the levels of calcium in the blood. This can sometimes cause symptoms such as thirst, passing urine more often, vomiting, constipation or confusion. However this is very rare and can usually be easily controlled.

## How are bone metastases diagnosed?

Talking to your doctor about any new symptoms is the first step. Your doctor will perform a physical examination and may recommend some tests. There are many tests that are used to find the location and size of bone metastases, including the following blood tests and imaging.

### Blood tests

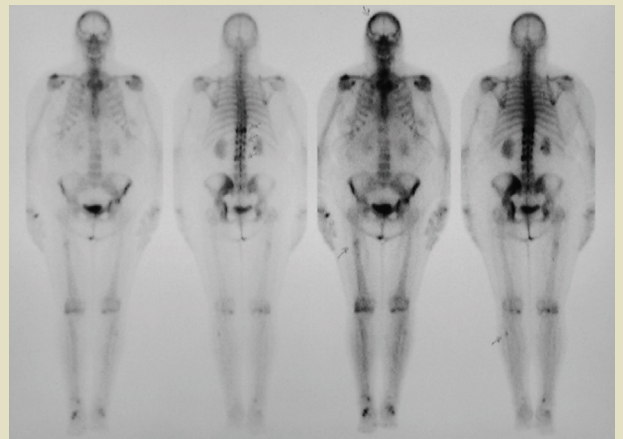
Cancer in the bones can cause high levels of chemicals in the bloodstream, such as calcium and alkaline phosphate.

### X-ray

Often a simple X-ray can show a bone metastasis, but your doctor may also order other types of scans.

### Bone scan

A bone scan is a nuclear medicine test. A radioactive fluid that is attracted to bone cells affected by cancer is injected into a vein. A scanner takes a series of pictures, and any areas of cancer in the bone show up as darker areas, sometimes called 'hot spots'. This test has very low radioactivity and does not cause side effects.



*A nuclear medicine bone scan showing the body from different angles. This scan shows hotspots; some of these are due to cancer and some are due to arthritis.*

## Computerised tomography (CT) scan

This imaging procedure gives more detailed pictures of your body by taking lots of pictures from different angles. It can be used to show more detail of a specific bone or area. This scan is not necessary for all women with suspected bone metastases.

## Magnetic resonance imaging (MRI) scan

These scans use radio waves and strong magnets instead of X-rays to take detailed pictures of specific bones. This scan is not necessary for all women with suspected bone metastases.

## Positron emission tomography (PET) scan

This is another nuclear scanning technique sometimes used to detect metastases by creating a 3-dimensional picture of your body, with the use of radio waves that show up after an injection. PET scans are not routinely used to look for bone metastases. If your doctor recommends that you have a PET scan you should speak to your doctor about possible costs as it is not usually covered by Medicare.



## How are bone metastases treated?

**Although it is not possible to cure bone metastases, they are not usually life-threatening. Many women enjoy active lives for many years after bone metastases are diagnosed.**

Treatments for bone metastases aim to improve your quality of life by reducing symptoms, such as pain or bone fractures. Treatment will depend on:

- > which bones are affected
- > whether your bones have been weakened and are in danger of breaking
- > characteristics of your original breast cancer, such as type of tumour and the type of receptor the tumour had (for example oestrogen receptors (ER) or HER2 receptor)
- > other treatments you have had for primary or secondary breast cancer.

Treatments are often very effective in stopping the growth or decreasing the size of cancerous deposits in the bones. Current treatments are not usually able to completely remove all cancer cells from the bones.

There are three types of treatment for bone metastases:

- > treatments to control pain
- > local treatments for the bones (such as radiotherapy and surgery) which are directed at a single bone or area
- > systemic cancer treatments (such as hormone-blocking therapy, HER2-blocking drugs and chemotherapy) which work on the whole body.

## Treatments to control pain

Effective pain relief is very important. Pain medication works best when it is started before the pain becomes severe. You should talk to your doctor early about any new or worsening pain symptoms you have. Pain relief includes drugs (medications) and non-drug treatments.

### Pain medications (analgesics)

There are many different types of drugs that are used to treat different types of pain. These may be taken as tablets, liquids, injections, patches or suppositories. Your doctor may recommend paracetamol or anti-inflammatory drugs (such as ibuprofen) which are helpful in treating mild-to-moderate bone pain.

Stronger drugs, such as codeine and morphine, are very safe and effective for treating moderate-to-severe pain. Occasionally these stronger drugs may cause side effects such as drowsiness and constipation. Your doctor can advise you about strategies to manage these.

Addiction to pain killers is very rare in women with cancer, and all doses are tailored to the individual. Doses can be reduced over time, or eventually stopped when used in conjunction with other types of analgesia. Doses can also sometimes be reduced after radiotherapy is given, which may reduce the pain or stop the pain.

### Non-drug treatments

There are also many other ways of dealing with cancer pain, including:

- > relaxation techniques
- > acupuncture
- > gentle massage to affected and unaffected parts of your body
- > hot and cold packs
- > psychological support from friends and family
- > education programs about the most effective ways for you to use pain medications
- > support programs run by trained counsellors and psychologists.

Although it is recommended that women with bone metastasis avoid heavy contact or high impact sports, you can still enjoy a variety of low impact sports such as swimming, yoga, or walking.

## Local treatments for the bones

### Radiation therapy

This treatment destroys cancer cells in the bone with the use of very strong X-rays. You may have already received this type of radiation to your breast or chest-wall after your initial diagnosis. It is the most effective treatment for bone pain and can also help treat and prevent fractures and spinal cord compression. Normally small amounts (or doses) of radiation are given on one day or over a number of days. This may vary depending on your symptoms, the location and extent of the cancer and if you have had any radiotherapy before.

The specialist in this treatment is a radiation oncologist. You will be given individual advice on how much radiation you may need and over what period of time. Studies show that short courses of treatment are often as effective as longer ones.

### Surgery

Your doctor may recommend surgery to prevent the weakened bones from fracturing or to stabilise a bone that has already broken. This involves reinforcing the bone with metal supports such as pins and thin rods. This type of surgery is performed by an orthopaedic surgeon.

# Other treatments

Below is a brief overview of systemic (whole body) therapies. More detailed information about systemic therapies can be found in Westmead BCI fact sheets *Chemotherapy for Breast Cancer* and *Hormone (Endocrine) Therapy for Early Breast Cancer*.

## Bisphosphonates and denosumab

Bisphosphonates and denosumab are drugs that help strengthen your bones and help prevent fractures by stopping the loss of bone mass. These can be taken by mouth or by injection into a vein or underneath the skin.

A rare side effect of these drugs is a problem with the bone in the jaw. Good dental hygiene is important in preventing this. A dental check is recommended before you start this medication.

## Hormonal treatment (hormone-blocking medicine)

These treatments help to slow the growth or reduce the size of cancerous deposits in the bones. They work by blocking the production or the effect of hormones that would otherwise help cancer cells to grow. They only work if your cancer was oestrogen receptor (ER) positive. There are a number of different hormone-blocking medications. Tamoxifen is suitable for most women regardless of whether or not they have gone through menopause. Another option is a group of medications called an aromatase inhibitor. This medication only works after menopause.

Other options to reduce hormone levels include blocking the function of the ovaries by medicine, radiotherapy or surgery. These are only helpful in controlling cancer in women who have not yet gone through menopause.

Your doctor will talk to you about whether hormone-blocking treatments are suitable for you.

## Chemotherapy and other treatments

Chemotherapy and other treatments involve the use of medicines (drugs) to kill cancer cells. These can be given by mouth or by injection into the vein. A medical oncologist is a cancer specialist who can advise you on what type and schedule of chemotherapy drugs may work for you.

# How effective are treatments for bone metastases?

Although current treatments for bone metastases are unable to completely remove all cancer cells, many women with bone metastases can live for many years with extremely good quality of life.

The effect of bone metastasis on your prognosis is individual and depends on what type of cancer you have, where it has spread to and how you respond to various treatments. The main aim of any treatment is to control pain and other symptoms so you can enjoy your day-to-day activities as much as possible.



## Useful contacts/websites

Cancer Australia	<a href="http://canceraustralia.gov.au">canceraustralia.gov.au</a>
Cancer Council	<a href="http://cancer.org.au">cancer.org.au</a>
Cancer Council Helpline	13 11 20
Breast Cancer Network Australia (BCNA)	<a href="http://1800.500.258">1800 500 258</a> <a href="http://bcna.org.au">bcna.org.au</a>

# Supporting People with Breast Cancer Today and Every Day

- ✿ Providing screening, diagnosis, treatment and care by expert teams
- ✿ With world-class research, education and innovation
- ✿ Engaging the help of our community and supporters
- ✿ To shine a Ray of Hope



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The Westmead Breast Cancer Institute (BCI), NSW Australia, is supported by NSW Health & the generosity of the community.

Reviewed by consumers, and scientific and plain-English editors.

**Version 5**

**WSP 223 March 2025**

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**IMPORTANT** At all times you should rely on the expert judgement of your medical advisor(s). This information guide is not a substitute for medical advice. It is designed to help you understand and discuss your treatment.

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