

What is node-positive breast cancer?

Node-positive breast cancer means that cancer cells from the tumour in the breast have been found in the lymph nodes (sometimes called “glands”) in the armpit area.

Although the breast cancer is removed during surgery, the presence of cancer cells in the lymph nodes means that there is a higher chance of the cancer returning and spreading.

I will be having surgery and radiation treatment for breast cancer. Do I need drug treatment too?

Almost all women with node-positive breast cancer require drug treatment in addition to surgery and radiation treatment (radiation is given following lumpectomy). Even when it seems certain that the whole tumour has been removed, many women die within 10 years from the cancer returning if they have had only surgery and radiation without drug treatment. There is now very powerful evidence that drug treatment in addition to surgery and radiation helps prolong life.

What does “drug treatment” mean?

Drug treatment can mean either chemotherapy or hormonal therapy. Chemotherapy uses special drugs to kill cancer cells.

Hormonal therapy uses a different approach. The ovaries produce natural hormones, such as estrogen, which encourages some cancers to grow. Hormonal therapy interferes with this process and can stop or slow the growth of cancer cells.

There are 2 kinds of hormonal therapy. The first, called “ovarian ablation,” stops hormone production by destroying the ovaries with radiation treatment or by removing them surgically. In the second type of hormonal therapy, estrogen is still produced by the body, but its effect is blocked by a drug called “tamoxifen.”

The recommended treatment depends on individual circumstances.

What kind of therapy is best for me?

Several factors have to be considered. These include the following:

- *Your age, and whether you have gone through menopause (“change of life”).* Medication affects cancers differently before and after menopause.
- *Whether your cancer was diagnosed as “ER positive” or “ER negative.”* “ER” stands for estrogen receptor. This is a receptor or “docking site” to which estrogen can bind. If a tumour has these receptors (ER-positive cancer), it means that its growth may be influenced by your body’s natural hormones. This will affect the type of treatment recommended for you.
- *Your personal choice.* For example, one treatment may be slightly more effective than another but has more unpleasant side effects, which may affect your choice. You and your doctor will need to weigh the expected benefits against the possible problems that the treatments can cause.

Each of the treatments mentioned in the following columns are discussed in more detail later. The first choices to be made depend on your age and whether you have passed menopause. Menopause occurs over a period of time. You should consider yourself postmenopausal when you have not had your period for a year. Until then, for the purposes of cancer treatments, you are considered premenopausal. Women who can't tell (they may have had their uterus removed) are considered to be postmenopausal after their 50th birthday.

Read this column if you are premenopausal

There is strong evidence that chemotherapy using a combination of drugs can prolong life and is the best choice for you.

Should I have hormonal therapy in addition to chemotherapy?

Right now, there is not enough evidence to recommend taking both.

Can I have hormonal therapy instead of chemotherapy?

A decision to refuse chemotherapy should not be made lightly. Hormonal therapy is less effective than chemotherapy for your situation.

However, if you are unable or definitely unwilling to have chemotherapy and your cancer was ER positive, hormonal treatment (ovarian ablation or tamoxifen) can have some benefit by itself.

If I have chemotherapy, what drugs will I be taking?

Three combinations have been widely tested and have proved effective. They are known as CMF, AC and CEF. Research studies are investigating adding a new class of drug called taxanes to AC chemotherapy, but the results are inconclusive. The best choice for you depends on your personal circumstances. Each combination is discussed in detail further on.

If I have hormonal therapy, what kind will it be?

If you can't have chemotherapy, ovarian ablation (surgical removal or radiation-induced destruction of the ovaries) may be the best choice for you. Although it is seldom used in Canada at present, ovarian ablation has proved effective in cases like yours. If you are unable or unwilling to have ovarian ablation and your cancer was ER positive, tamoxifen can be used.

For more information, read the sections on Chemotherapy and Hormonal Therapy (including ovarian ablation) that follow.

Read this column if you are postmenopausal

The best treatment for you depends on whether your cancer was ER negative or ER positive.

My cancer was ER negative. What is the best treatment for me?

If you are in good general health, chemotherapy is the best choice for you. Hormonal therapy is not recommended.

What is the best therapy if my cancer was ER positive?

If your cancer was ER positive, hormonal therapy is recommended. Chemotherapy can provide additional benefit to hormonal therapy.

If I take chemotherapy, what drugs will I be taking?

Two combinations have been widely tested and have proved effective in cases such as yours. They are known as CMF and AC. The best choice for you depends on your own personal circumstances. Each combination is discussed in detail further on.

If I have hormonal therapy, what kind will it be?

Treatment with tamoxifen is the recommended hormonal therapy for you.

If my doctor recommends tamoxifen, do I also need chemotherapy?

Chemotherapy can provide additional benefit to tamoxifen. If this possibility is important to you and you are willing to accept the unpleasant side effects of chemotherapy, this may be an option for you.

For more information, read the sections on Chemotherapy and Hormonal Therapy (tamoxifen) that follow.

Chemotherapy

My doctor recommends chemotherapy. What are the pros and cons?

Anticancer drugs also affect healthy cells. This means they can have undesirable side effects, some of which are severe. For this reason, chemotherapy is recommended only when you are strong enough to take it.

For premenopausal women and for women with ER-negative cancers, chemotherapy is the most effective means available for guarding against a return of the cancer. Since chemotherapy can prolong your life, it would be unwise to refuse it without good reason. As described below, there is some room for choice between drug combinations in terms of specific side effects and length of treatment.

How is chemotherapy given?

There are 3 recommended combinations: CMF, AC and CEF. Premenopausal women can take any of them. Postmenopausal women can take either CMF or AC. All of them have proved effective against cancer. Research studies are investigating adding a new class of drug called taxanes (e.g., paclitaxel) to AC chemotherapy. The results are inconclusive. You can discuss this option with your doctor.

The combination you choose is given in “cycles” as shown below.

- CMF (cyclophosphamide, methotrexate and 5-fluorouracil)
With this choice, you would take cyclophosphamide by mouth every day for 2 weeks. On the first day of each of these weeks you would receive methotrexate and 5-fluorouracil by intravenous injection. Then there is a 2-week “rest period” when no drugs are given. This completes 1 full cycle. Six cycles are given altogether, for a total of 6 months of treatment.
- AC (Adriamycin [doxorubicin] and cyclophosphamide)
With this combination you do not have to take daily medication. Instead, you would receive the drugs by intravenous injection and then have a rest period of 21 days (3 weeks) when no drugs are given. On the 22nd day, you would begin the second cycle. Four cycles are given altogether. The whole treatment lasts a little over 2 months.
- CEF (cyclophosphamide, epirubicin and 5-fluorouracil)
This combination is given in the same way as CMF. The cyclophosphamide is taken by mouth every day for 2 weeks, and an intravenous injection of the other 2 drugs is given on the first day of each of those weeks. This is followed by a 2-week rest period, which completes the cycle. Six cycles are given altogether for a total of 6 months of treatment. Usually, when CEF is used, it is recommended that you take an antibiotic to guard against infection.
- AC followed by paclitaxel
AC is administered as described above. Three weeks after the last cycle of AC, paclitaxel is given by intravenous injection. Four doses of paclitaxel are given, one dose every 3 weeks.

What are the most common side effects of chemotherapy?

Side effects can include the following:

- If you are being treated with CMF chemotherapy, nausea and vomiting can be mild to moderate and can last throughout treatment. However, they can be effectively relieved with medication. If you choose AC chemotherapy, nausea and vomiting are likely to be more severe than with CMF, but they will be much briefer in duration. If you are being treated with CEF chemotherapy, nausea and vomiting can be moderate. However, they can be effectively relieved with medication.
- Fatigue is common.
- Some weight gain may occur in about 14% of patients.
- Hair loss is complete with AC and CEF, but your hair will grow back after completion of chemotherapy. With CMF, 30% of patients have no hair loss at all, and only 40% have severe hair loss.
- Mild irritation of the eyes and the lining of the mouth and throat, and inflammation of the bladder may occur.
- Temporary stoppage of monthly periods during treatment may occur. This side effect may become permanent in older women.
- Temporary suppression of the body's immune system may occur during treatment and can increase the risk of infection. In a few individuals (about 2% to 5%), it may cause fever, necessitating admission to hospital.
- Severe side effects are rare, occurring in less than 1% of women receiving the usual doses of chemotherapy. However, they can happen, and chemotherapy can very rarely even be fatal. There is a very small risk of heart damage with AC (less than 1%) and a small risk of heart damage with CEF (1%). There is also a very small risk of leukemia developing in later life with AC or CMF (perhaps 1 in every 1000 to 10 000 patients) and a small risk with CEF (1%).

When should chemotherapy begin?

Chemotherapy should begin as soon as possible after your operation, usually within 4 to 6 weeks.

If I take chemotherapy, do I need any other treatment?

If you have had a lumpectomy, you should also have radiotherapy. If you are having chemotherapy, the radiotherapy is usually delayed until the chemotherapy is finished. For more information on radiotherapy, see guideline 6 in this series.

Hormonal therapy

My doctor has recommended hormonal therapy. What does this mean?

The ovaries produce hormones such as estrogen, which can encourage the growth of breast

cancer. There are 2 kinds of hormonal therapy: ovarian ablation, which stops the body's hormone production, and the drug tamoxifen, which blocks the action of the body's hormones.

What is ovarian ablation?

Ovarian ablation stops the production of hormones in the ovaries, in effect causing menopause in premenopausal women. This is done by removing the ovaries through surgery or by destroying them with radiation treatment. The effects are permanent.

What are the side effects of ovarian ablation?

Ovarian ablation produces all of the usual symptoms of menopause, including hot flashes and mood swings. However, these symptoms are temporary. There is also a small increased risk of heart disease and osteoporosis (brittle bones), as happens in all women after menopause.

How does tamoxifen work?

Hormones such as estrogens that are produced in the ovaries can make cancers grow faster, especially those that have estrogen receptors (ER-positive cancers). Tamoxifen does not stop hormone production but blocks the hormones from reaching the cancer cells. The drug is taken daily by mouth.

Tamoxifen has proved to be effective in prolonging life in women who have been treated for breast cancer. It also reduces the chances of getting cancer in the opposite breast.

For how long should tamoxifen be taken?

It is recommended that tamoxifen treatment be continued for 5 years.

What are the side effects of tamoxifen?

Tamoxifen may cause temporary hot flashes in up to 20% of patients. In about 1 in every 100 patients, treatment with tamoxifen may cause blood clots in the veins. Rarely, these can pass into the lung, endangering life. Very rarely (about 1 woman in every 1000 treated) tamoxifen can cause cancer in the lining of the uterus (endometrial cancer). For this reason, women taking tamoxifen should promptly report any vaginal bleeding — even slight spotting. Very rarely tamoxifen can cause cataracts.

Tamoxifen has some beneficial side effects, too. It lowers the chance of cancer in the opposite breast and reduces the risk of osteoporosis — a common cause of brittle bones and fractures in postmenopausal women.