

Guideline 3: Mastectomy or lumpectomy? Choosing the most appropriate operation for women with early invasive breast cancer

What is mastectomy?

Mastectomy is an operation that removes the whole breast. Until the mid-1980s, this was the usual treatment for early breast cancer.

What is lumpectomy?

Lumpectomy is an operation that removes a breast cancer growth or *tumour* along with a "shell" of normal tissue to ensure that the whole tumour is taken. Because most of the breast remains in place, lumpectomy is often called *breast-conserving surgery* (BCS). You may also hear it called *partial mastectomy* or *segmental resection*.

Can I choose between mastectomy and lumpectomy?

Yes, in most circumstances. Studies show that lumpectomy *followed by radiation therapy* — treatment with high-energy x-rays (see guideline 6)—is as effective as mastectomy. This means that both procedures can remove the tumour and reduce the chance of the cancer returning. Because the procedures are equally effective, you will need to consider your personal preferences and circumstances when choosing between mastectomy and lumpectomy. Most women with breast cancer in the early stages now choose lumpectomy with radiation therapy.

What are the advantages of lumpectomy?

Mastectomy removes the whole breast. Lumpectomy removes only a portion of the breast. Because most of the breast remains after lumpectomy, the feel and shape of the breast are usually the same as before. Plastic surgery can be used to reconstruct the breast after mastectomy, but the feel and shape may not be the same.

What are the disadvantages of lumpectomy?

There are two main issues to consider:

- *The radiation therapy required after a lumpectomy can be inconvenient and may have side effects.* You will need to have radiation therapy daily for about 4 weeks to reduce the risk of the cancer returning in the same breast. Depending on where you live, it may be difficult or even impossible to get to a treatment centre. You may also find that radiation therapy causes problems such as swelling and pain in your breast.
- *Sometimes the cancer is not completely removed during a lumpectomy.* After a lumpectomy, the tissue surrounding the tumour that was removed will be examined under a microscope. If it is found to contain cancer cells, you will need another operation — either a second lumpectomy (taking more tissue this

time) or a mastectomy. This second operation is needed because studies have shown that cancer left behind after a lumpectomy can lead to recurrence of the cancer in the breast. If only a few cancer cells are found on the edge of the removed tissue, radiation therapy may be able to destroy any remaining cells and additional surgery may not be needed.

If I have a lumpectomy followed by radiation therapy, can the cancer still come back in the breast?

Yes, it can. However, the chance of this is low. About 1 in 10 women who have lumpectomy and radiation therapy will have recurrence of the cancer in the same breast after 10 to 15 years. A similar number of women who undergo mastectomy will have recurrence of the cancer in the underlying chest wall in the same time period. In some cases, chemotherapy or hormonal treatment can lower this risk. (For more information on these additional treatments, see [guidelines 7 and 8](#).) If cancer does come back in the treated breast, another operation, either lumpectomy or mastectomy, will be necessary.

If lumpectomy is safe and preserves the breast, what are the advantages of a mastectomy?

Mastectomy can be preferable in certain situations:

- *If the cancer is likely to come back in the same breast, even after radiation therapy.* This can happen if there are many tumours in the breast, or if the mammogram shows that the cancer has spread to many areas of your breast. When treating cancers that are very likely to return, mastectomy can be more effective than lumpectomy.
- *If you cannot have radiation therapy.* Factors that would rule out radiation therapy include pregnancy and previous radiation treatment to the breast. Radiation therapy might also be ruled out if you have a disability or a condition such as arthritis that prevents you from lying flat or stretching out your arm, or if you have a disease such as systemic lupus erythematosus or scleroderma.
- *If the tumour is very large in proportion to the breast.* The loss of tissue when a large tumour is removed may make it impossible to preserve the shape of the breast. In this situation, a mastectomy followed by reconstruction of the breast can be more successful cosmetically than a lumpectomy.

Is it possible to have a lumpectomy even if I can't have radiation therapy afterward?

Lumpectomy is still possible, but you would have a high risk of the cancer returning in the same breast (about 35% within 12 years). If the cancer does come back, you would need more surgery and perhaps treatment with anticancer drugs. Because chances are high that the cancer will return if you do not have radiation therapy, mastectomy can be more effective than lumpectomy without radiation therapy.

My doctor says I should have the glands in my armpit removed as well. Is this usually done?

Doctors often recommend the removal of glands or *lymph nodes* to determine how far the cancer has spread, and to reduce the risk that the cancer will come back in the armpit area. (For details, see [guidelines 4 and 13](#).)

What if the tumour is next to the nipple?

You can still have a lumpectomy, but the operation will require a surgeon with special skill and experience. The surgeon may need to remove some or all of the nipple and surrounding tissue. You may lose some sensation, but plastic surgery can make the shape and appearance of the breast almost normal.

Is it possible to have a lumpectomy if my tumour is very large?

In some situations, chemotherapy given before surgery can shrink a large tumour and thus make lumpectomy possible. In this case, though, there may be an increased risk of cancer returning in the breast after radiation therapy. You will need to discuss this possibility with your doctor when considering this option.

What should I think about when deciding between mastectomy and lumpectomy?

There is no evidence that one procedure is clearly superior to the other, or that one leads to a better overall quality of life. This means that your preferences, priorities and lifestyle must be your guide when making a decision. Research shows that women who take an active part in treatment decisions are less likely to feel depressed afterward. So, talk to your doctor and weigh all the information carefully. Above all, don't feel rushed when making a decision — a delay of 1 or 2 weeks will have no significant effect on your situation. You are the best judge of your feelings about your body and your response to the possible effects of either procedure. Maintaining a healthy, positive self-image over the long term is important, and you should keep this in mind when choosing between mastectomy and lumpectomy.