

# Radiotherapy AND RECONSTRUCTION

*I've received conflicting advice about when to have radiotherapy if I choose a mastectomy. One doctor recommended I have it before reconstruction, the other recommended I have it after reconstruction.*

**- online network member**

We often hear from women who are having both a mastectomy and radiotherapy as part of their breast cancer treatment. Many tell us advice about reconstruction and radiotherapy can be confusing.

Traditionally, if a woman needed to have radiotherapy, she would be told she would need

to have a delayed reconstruction, rather than a reconstruction at the same time as her mastectomy (immediate reconstruction).

*The Beacon* asked three experts for advice on reconstruction options for women who have been told they need radiotherapy after a mastectomy.



**Ms Jane O'Brien,**  
specialist breast cancer  
and oncoplastic surgeon  
at St Vincent's Private  
Hospital Melbourne

## **Have recommendations about reconstruction and radiotherapy changed?**

Radiotherapy can affect the cosmetic outcome of breast reconstruction (how the breast looks), and so the timing of reconstruction in women who may require radiotherapy after a mastectomy is a heavily debated topic.

In the past, most plastic surgeons recommended against autologous reconstruction (reconstruction using the patient's own tissue) in women who will or may require post-mastectomy radiotherapy (PMRT).

Instead, these patients have undergone either delayed reconstruction or had a temporary tissue expander or an implant inserted at the time of mastectomy, with a view to delayed autologous reconstruction after radiotherapy.

With this approach, I was seeing a significant proportion of patients who were 'battle weary' after their breast cancer treatment and not keen on further major surgery, so they chose not to go ahead with autologous reconstruction. Instead, they either elected to remain flat, or 'made do' with an implant that was quite often cosmetically damaged, and often also uncomfortable, because of radiotherapy.

Emerging evidence shows that immediate autologous breast reconstruction can tolerate radiotherapy better than previously thought.

A recent study compared the outcomes of autologous and implant-based breast reconstruction. It evaluated the impact of PMRT on breast reconstruction results and showed higher rates of complication and failure in women who had implant reconstruction compared with autologous breast reconstruction.

Researchers concluded that radiotherapy compromises the outcomes of implant reconstruction, but not autologous reconstruction.

There are still a number of considerations for women when choosing their preferred type of reconstruction, including their suitability and the differences in how long the operation takes and rehabilitation. However, those who are likely to receive PMRT should be informed of the substantial and significant impact of radiotherapy observed among patients who received implant reconstruction.

Those who choose to have autologous reconstruction may feel reassured by the recent study findings.

This study was a turning point for me, providing strong evidence supporting my long-held personal view that autologous reconstruction is an appropriate option to consider for women who want an immediate reconstruction but will require radiotherapy later.

I felt that by recommending against immediate autologous reconstruction in patients requiring PMRT, based on the most up-to-date scientific evidence, I was potentially denying my patients their best reconstructive option.

Therefore, I made a firm decision to change how I was practising. I now advise patients that immediate autologous reconstruction is a good option for those who require PMRT.

While arranging and scheduling immediate autologous reconstruction may be achievable in a timely fashion in a capital city private practice and in major metropolitan hospitals with specialised reconstruction units, it can prove more challenging in other settings.

If not available locally, there should ideally be referral pathways in place to allow access to this option, which avoids the long waiting times for delayed reconstruction and the problems associated with delayed reconstruction.



**Mr Damien Grinsell, plastic and reconstructive surgeon with a special interest in breast aesthetics at St Vincent's Hospital Melbourne**

**One of the most common concerns we hear from women are the long waiting times to have temporary tissue expanders changed over to more permanent implants. These waiting times can be even harder if the tissue expanders are uncomfortable as a result of radiotherapy. How can we avoid long reconstruction waiting lists for people needing changeover implant surgery in the public system?**

A relatively new approach called 'the reverse sequence' is becoming

more common in Australia, the UK and the USA for the treatment of locally advanced breast cancers, including in public hospitals.

The reverse sequence is for patients that definitely need chemotherapy, radiotherapy and a mastectomy, and want a reconstruction.

The reason for this approach is to try to avoid giving radiotherapy to a reconstructed breast - be it a patient's own tissue or an implant.

Radiotherapy to a reconstructed breast can have a negative impact on how the breast looks and feels. In the past, we saw some women whose reconstructed breast became hard, painful, and looked abnormal after radiotherapy.

The reverse sequence changes the order in which treatments are given.

Traditionally, the order of treatment was surgery, chemotherapy, radiotherapy, and finally delayed reconstruction.

The reverse sequence starts with chemotherapy, then radiotherapy, surgery and reconstruction, usually

using the patient's own tissue.

The early results of this approach are very encouraging and show that it can be done safely, with no increase in complications compared to the traditional order of treatment.

Encouragingly, the cancer kill rate - called the pathological complete response rate (PCR) - is at least double chemotherapy alone and possibly higher.

While we don't have any long-term evidence at this stage for improving survival benefits, the hope is that a higher PCR will mean greater survival.

The advantages for the patient are many. It means a shorter, easier journey for the patient, including avoiding having to have a temporary tissue expander in place between having a mastectomy and a reconstruction. It also means there is no interruption to the cancer treatment.

I am hopeful that as data becomes available, it will show that the reverse sequence improves survival outcomes.



**Professor Andrew Spillane, surgical oncologist, Breast and Surgical Oncology at The Poche Centre in Sydney**

**Could the option of chemotherapy before surgery help women avoid having a mastectomy altogether?**

As with post-operative chemotherapy, the main aim of pre-operative (or neoadjuvant) chemotherapy is to increase overall survival and eliminate any tumour cells that may have already

spread to other parts of the body.

The secondary aim is to reduce the amount of cancer that has to be removed and thus reduce the extent of surgery.

Neoadjuvant chemotherapy (NACT) has been shown to improve the rate of breast conserving surgery as fewer women need mastectomy after NACT.

Also, even if the original tumour was suitable for breast conserving surgery, if it becomes smaller with NACT, then this reduces the amount of breast tissue that needs to be removed, which results in better cosmetic outcomes.

Another advantage of NACT is it reduces the chance of having a positive axillary lymph node (cancer cells in the lymph node) and therefore need for axillary dissection and associated lymphoedema risk.

Patients who still need to have a mastectomy after NACT usually have better margins around the tumour. This can mean that immediate reconstruction may be considered after NACT, whereas it may not have been an option prior to chemotherapy.

If a patient has a significant risk of carrying a genetic predisposition for breast cancer (e.g. a BRCA gene mutation) then having NACT gives time for genetic testing to help decide on the type of surgery the woman may want, including the type of reconstruction if mastectomy is required.

If you've been told you need radiotherapy and this will impact your options for reconstruction, speak to your treating team about whether any of the approaches in this article could be suitable for you.

**BCNA hopes these new approaches will lead to better access to breast reconstruction and fewer women on waiting lists.**

**For more information on NACT, see Professor Spillane's article on page 9.**

**For more information on the study Ms O'Brien refers to, see JNCI: *Journal of the National Cancer Institute*, Volume 110, Issue 2.**