

# Challenges in breast reconstruction after breast cancer

Citation for published version (APA):

Hillberg, N. S. (2022). *Challenges in breast reconstruction after breast cancer: on perioperative and postoperative complications and postoperative patient satisfaction*. [Doctoral Thesis, Maastricht University]. Maastricht University. <https://doi.org/10.26481/dis.20220701nh>

## Document status and date:

Published: 01/01/2022

## DOI:

[10.26481/dis.20220701nh](https://doi.org/10.26481/dis.20220701nh)

## Document Version:

Publisher's PDF, also known as Version of record

## Please check the document version of this publication:

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# Chapter 11

**Impact**





There is a one out of eight chance to develop breast cancer during a females' lifetime.<sup>1</sup> The majority of this group will undergo breast surgery, often with major consequences for the appearance of the breast. Fortunately, breast reconstruction offers a way to restore the shape of the breast to a large extent. Depending on numerous factors, different kind of breast reconstructions may be possible. It is important to discuss these options with the patient, also the perioperative and postoperative risks should be discussed, as well as the expected cosmetic result. This thesis intended to increase the information for patients and surgeons regarding problems faced during various types of reconstruction types.

Contrary to expectations, there are major differences internationally in the application of breast conservation surgery. For example, there is a disagreement when a patient is eligible for breast conserving surgery (BCS) and oncoplastic reconstruction and by whom this reconstruction is performed. Some surgeons fear that removing larger tumors and having oncoplastic reconstruction increases the risk of complications. In this thesis we show that this should not be the reason to withhold patients from the option of BCS (with reconstruction). We show that both breast conserving surgery with and without reconstruction is safe when it comes to postoperative complications. Besides, the quality of life is not affected by larger surgery. It should be remembered that, when a good aesthetic result is desired, the alternative to breast reconstruction after a breast-conserving operation is a mastectomy, and not a breast-conserving operation without reconstruction. In the majority of patients, a very good aesthetic results are obtained from BCS with oncoplastic surgery. A total reconstruction after mastectomy entails more complications and does not always bring the desired results in every patient, with other types of downsides for patients: both with implant use with revision on the long term and considerable donor site morbidity with autologous reconstruction.

This thesis emphasizes the importance of discussing the option of breast conserving surgery (with reconstruction) during the preoperative multidisciplinary consultation where treatment options are discussed and the preoperative patient consultation. Oncoplastic reconstruction after BCS requires

good cooperation between different disciplines for the best result. It can be a challenge in terms of planning the surgery schedule, but especially the cooperation between the oncological surgeon and plastic surgeon is of great importance. Establishing the indication for an oncoplastic procedure, preoperatively marking the breast together and discussing the incision through which the tumour will be removed ensure the best esthetic result postoperatively. Experience plays a big role in the way we make these decisions. Also, when the tumor is removed by the oncologic surgeon, without reconstructions, the aesthetic result depends on the surgeon's experience and eye for aesthetics. For example, it is nicer if a tumor located a few centimeters from the inframammary fold (IMF) is removed through an incision in the IMF instead of directly above the tumor. The same goes for tumors that are removed through an incision in the areolar rim. The hospital where our research was conducted specializes in breast cancer care, with close collaboration between different

specialists in the care of breast cancer patients. We would like to see that this research stimulates other centers to strengthen the collaboration between different specialists involved in breast cancer care.

Innovations in the field of surgery are key to improve patient outcomes. Still, patient safety should never be at risk. In recent years, much has changed in the techniques of reconstruction using an implant. In the past, a reconstruction was always two-stage, while now a one-stage reconstruction is increasingly used. Nowadays, a choice can also be made whether or not to use an ADM with options of various ADMs. In the field of implant-based reconstructions, there are many factors that influence the success or failure of a reconstruction. More insight into these factors gives the patient and the surgeon the option to make a more informed choice for the technique of reconstruction. It is still not entirely clear which choice is the best and what the influence of the different choices are on the outcome for the patient. Implant registries are expected to provide sufficiently well-founded information about the advantages and disadvantages of different types of implant-based reconstruction techniques in the near future. This thesis underlines the importance to thoroughly research new features of surgeries before they are applied in practice. It also underlines the importance that the literature with especially an enormous use of ADM in breast implant surgeries are not applied in the Netherlands. Still, this thesis shows that the gold standard two-stage reconstructions seem to have a strong association with a major postoperative complication compared with direct single-stage reconstructions without ADM. This type of evidence should be guiding the discussion instead of what the surgeon is used to do.

Breast reconstruction with autologous tissue after a mastectomy is technically demanding and fortunately still widely used in the Netherlands. The demand for autologous reconstructions is increasing as concerns about the safety of implants become more frequent in the news. The technique has been clearly progressive in the Netherlands since the early 1990s. And as a result, the technology is becoming more and more sophisticated. Nevertheless, despite these refinements, there are still (inter)national differences in techniques and handling problems.

One of the key variables is ischemia time in the Netherlands. Although we are aware that in other countries this is not regarded as important. This makes for example logistics are different in the same procedure internationally. For example, in the UK surgeons are used to shape the flap during the ischemia time. They state to see no influence between longer ischemia time and complications in their cases. In the Netherlands we tend to keep the ischemia time as short as possible. Shaping the flap is commonly done after the revascularization of the flap. This thesis seems to underline that ischemia time influences the risk of postoperative complications. Still, it can be the case that there is a threshold when ischemia time is too much to handle for the flap. It would be good to use a register to see which factors are actually important. International exchange of data with openness

of results, surgeon's experience and preference would be needed to see which factors contribute to the best outcome for the patient.

Another difference is what happens if the flap is not properly vascularized? A problem that might always occur before a free flap is transferred. And how to deal with this problem? A delay procedure is an option to save the flap and is applied (inter)nationally in different ways. How far do you loosen all tissue if you know that the vasculature is problematic? How long does it take between the primary delay and going back? And how often does it go well? Books don't answer all these questions. As it is a procedure that is seldomly needed, this thesis has shares experiences with these technical details to increase our knowledge worldwide.

## References

1. American Cancer Society. How Common Is Breast Cancer? <https://www.cancer.org/cancer/breast-cancer/about/how-common-is-breast-cancer.html>. Jan. 2021. [