

## CLINICAL EVIDENCE

# Endoscopic Nipple-Sparing Mastectomy (E-NSM)

## Reviews

### **Oncological, surgical, and cosmetic outcomes of endoscopic versus conventional nipple-sparing mastectomy**

Authors: Carroll A, Robles C, Lai HW, et al.

Publication date: May 2025

Journal: BJS Open

Study design: Meta-analysis

#### **Compared with open nipple-sparing mastectomy, E-NSM was associated with the following:**

- Comparable oncologic outcomes
- Improved cosmetic outcomes and satisfaction scores
- Reduced necrosis risk when performed with a single-incision E-NSM technique
- Slightly longer operative times

### **Evolution of minimal access breast surgery**

Authors: Mok CW, Lai HW

Publication date: Dec. 2019

Journal: Gland Surgery

Study design: Review

#### **The implications of the review were as follows:**

- The development of minimally invasive breast surgery was driven by the demand for better aesthetic outcomes in breast surgery.
- Enhanced visualization via minimally invasive approaches enables effective oncologic resection with improved aesthetic outcomes and recovery.
- Minimally invasive surgery could become the standard of care over conventional surgical options if techniques and technology continue to improve.

### **Endoscopic-assisted surgery in the management of breast cancer: 20 years review of trend, techniques and outcomes**

Authors: Mok CW, Lai HW

Publication date: Aug. 2019

Journal: Breast

Study design: Review

#### **This review of case series and cohort studies yielded the following observations:**

- The oncologic outcomes of endoscopic breast surgery techniques were similar to those of conventional open techniques.
- Consistent surgical technique, adherence to protocols, and objective outcome assessment are important for advancing endoscopic breast surgery.

# Multicenter Studies

## Minimal Access vs Conventional Nipple-Sparing Mastectomy

Authors: Kim JH, Ryu JM, Bae SJ, et al.

Publication date: Oct. 2024

Journal: JAMA Surgery

Study design: Multicenter comparative study

**In comparing open NSM (nipple-sparing mastectomy) with minimal access NSM – including both endoscopic and robotic NSM – this multicenter study noted the following:**

- Complications were similar between minimal access NSM techniques and open NSM.
- Necrosis of the nipple-areola complex and rates of seroma incidence were significantly lower with minimal access NSM approaches compared with open NSM.

## Robotic Versus Conventional or Endoscopic-assisted Nipple-sparing Mastectomy and Immediate Prosthesis Breast Reconstruction in the Management of Breast Cancer: A Prospectively Designed Multicenter Trial Comparing Clinical Outcomes, Medical Cost, and Patient-reported Outcomes (RCENSM-P)

Authors: Lai HW, Chen DR, Liu LC, et al.

Publication date: Jan. 2024

Journal: Annals of Surgery

Study design: Prospective multicenter  
three-armed cohort study

**Clinical outcomes, medical cost and patient-reported outcomes were as follows:**

- Minimally invasive techniques led to smaller incisions, less acute pain and improved scar satisfaction compared with conventional NSM techniques.
- Robotic approaches cost significantly more (approx. \$4,000/case) than endoscopic approaches.
- There was no significant difference in oncologic outcomes between NSM approaches.

# Single-Center Studies

## Endoscopic prophylactic nipple-sparing mastectomy: First French survey of 10 patients

Authors: Rathat G, Chaumette M, Fontaine V, et al.

Publication date: Jan. 2025

Journal: Journal of Gynecology, Obstetrics  
and Human Reproduction

Study design: Prospective single-center study

**The study noted several benefits of endoscopic NSM:**

- No conversions were made to an open technique.
- Complication rates of the endoscopic approach to NSM were low (16% overall, with no seromas and no lost prostheses).
- Patient satisfaction and cosmetic outcomes were high.

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