If mastectomy is indicated for removal of breast cancer, the nipple areola complex (NAC) is routinely excised during surgery followed by nipple reconstruction. Despite advances in reconstruction techniques, removal of the NAC often results in a sense of mutilation. However, recent studies regarding the tumorigenic involvement of the NAC have provided some evidence that in carefully selected patients the NAC could be preserved. Nipple-sparing mastectomy (NSM) preserves the breast skin envelope and the NAC, and has therefore emerged as an alternative to conventional radical mastectomies. Because NSM leaves no or sparse retroareolar ductal tissue, NSM is increasingly considered as oncologically safe both in patients with small and peripherally located tumors and in women with high breast cancer risk, who opt for prophylactic mastectomy. Moreover, NSM has been applied in patients with large and centrally located or multicentric invasive carcinomas but oncologic safety as well as postoperative complications such as NAC necrosis are still controversial. Since long-term data are limited, there is no general recommendation for NSM indications. To evaluate if indications for NSM may be rather enlarged under certain conditions, we performed a MEDLINE search for studies published between 2003 and 2009.