BreastScreen Australia Clinical Advisory Group (CAG) Management of women with cosmetic breast injections in the BreastScreen Australia program

Version	Date of advice: 12 November 2025 Review due: November 2030 Version number: 1
Advice requested by	BreastScreen Australia Program Management Group
Category	Best practice guidance
Recommendations	• It is recommended that screening mammography after cosmetic breast injections varies according to whether the injections are **non-resorbable** (e.g. Polyacrylamide gel (PAAG) or free silicone) or **resorbable** (e.g. Macrolane™). **Non-resorbable injections** • Screening mammography is generally not recommended for women with non-resorbable injectable breast fillers because the presence of injected material reduces the quality of the mammogram. • MRI with contrast is currently the only screening option for early detection of breast cancer in women following such injections. However, a referral for MRI could result in out-of-pocket costs for the woman. • If a BreastScreen woman reports prior injections with a **non-resorbable material** (e.g., PAAG or free silicone injections), either when making an appointment or on presentation at the screening service, they should not be screened. Depending on the situation, a verbal explanation should be made where possible, and both the woman and their GP notified in writing as to why the woman is not suitable for the BreastScreen Australia program and recommend consideration of screening with an alternative imaging modality. **Resorbable injections** • Clinical decision-making on screening for women who have had

	resorbable Macrolane™ injections should be made on a case-by-case basis: ○ If a woman presents for screening less than3 years after a Macrolane™ injection, a screening mammogram should not be performed. An explanation should be provided to both the woman and her GP, as to why the woman is not suitable for the BreastScreen Australia program and recommend consideration of screening with an alternative imaging modality. The offer of a screening mammogram should be made three years after the most recent injection. • If a woman presents for screening three or more years after a Macrolane™ injection, a four-view mammogram should be performed and reviewed by the Service lead radiologist for a decision regarding suitability for screening. • If the **type of injected material is unknown or the woman does not report prior injections and injected material is seen on the initial mammogram**, the radiographer should proceed with a complete four-view mammogram: ○ The images should be reviewed by the Service lead radiologist and a decision made as to suitability for ongoing screening. ○ Regardless of whether the woman is discharged from the program, both the woman and GP should be notified in writing that the screening mammogram is sub-optimal. The notification should state that the woman has had a sub-optimal study and recommend consideration of screening with an alternative imaging modality.
Discussion	• Polyacrylamide hydrogel (PAAG) is a non-resorbable, non-degradable material suspended in a sterile watery gel, used in many countries, particularly in Russia and Asia. • Other injectable materials include free silicone (commonly used for breast augmentation in the 1950s and 1960s), autologous fat, and direct paraffin. • Macrolane™ is a stabilised, biodegradable and resorbable hyaluronic acid gel that has been used for breast augmentation in Europe and other countries. • Macrolane™ is a resorbable injectable filler so mammography may be possible after a sufficient passage of time. • There are no data on optimal timing for mammography after Macrolane™ use. Macrolane™ resorption rates vary between

	patients. In one study a mean of approximately 20% of the injected volume remained in the breast after 24 months, with small amounts visible on MRI after four years (1). • PAAG and Macrolane™ use are not commonly encountered in the BreastScreen Australia program. Free silicone injections are sometimes encountered in women ageing into the screening population. The density of these injected materials makes interpretation of mammogram difficult. • Cosmetic breast injections are intended to be pre-pectoral and retroglandular, but have been demonstrated within muscle and glandular tissue, and may appear as a single mass or multiple masses, with the presence of associated granulomatous, fibrotic, and inflammatory reactive changes. • Calcifications have been described within capsular contractures with Macrolane™ (2), and there is a case report of calcifications associated with PAAG (3). • Diagnostic difficulties arise if multiple deposits are present. These deposits make it difficult to differentiate between breast lesions; and the gel can mask breast lesions (1). • In a multicentre study, 71 women underwent two-view digital mammography at 24-months post Macrolane™ use. Review by two independent radiologists concluded that the information provided by mammography alone at 24-months was only acceptable for screening purposes in up to 56% of women with a single Macrolane™ injection, and 40% of those with more than one injection (1). • Formation of silicone granulomas, fibrosis, and lymphadenopathy are common complications of free silicone injections. Mammography for these women can be difficult with the appearance of multiple, extremely dense lobulated masses throughout the breast. These masses can distort the breast parenchyma and obscure visualisation of breast cancer. MRI provides optimal visualisation of free silicone (4). • Other materials injected for breast augmentation can also impede mammographic detection of breast cancer, including autologous fat injections, which can precipitate fat necrosis; and direct paraffin injections, which appear on mammograms as densities and masses that may calcify.
Stakeholder consultation	The BreastScreen Australia CAG is grateful to stakeholders who provided input during the development of this advice, including: • Australasian Society of Breast Physicians

	• Australian College of Rural and Remote Medicine • Australian Society of Plastic Surgeons • Breast Cancer Network Australia • BreastScreen Clinical Directors • Breast Surgeons of Australia and New Zealand • Medical Oncology Group of Australia • Royal Australian and New Zealand College of Radiologists • Royal Australian College of General Practitioners • Royal College of Pathologists of Australasia
References	1. Scaperrotta G, Satchithananda K, Tengvar M, Post K, Lim AK, Panizza P, Wesolowska E, Inglefield CJ 2016, Radiological assessment of the breast following enhancement with Macrolane : Managing the challenges, European Journal of Radiology, 86 (2017) pp. 58-62. 2. Eden JK 2013, Macrolane Injections for Breast Enhancement and Clinical Imaging (UKRC), Wrightington, Wigan and Leigh Foundation NHS Trust. 3. Margolis N, Bassiri-Tehrani B, Chhor C, Singer C, Hernandez O, Moy L. Polyacrylamide gel breast augmentation: report of two cases and a review of the literature. Clinical Imaging 39 (2015) 339-343. 4. Venkataraman S, Hines N, Slanetz P 2011, Challenges in Mammography: part 2, Multimodality Review of Breast Augmentation –Imaging Findings and Complications. AJR:197, December 2011. 5. Seth I, Bulloch G, Gibson D, Chow O, Seth N, Mann GB, Hunter-Smith DJ, Rozen WM. Autologous Fat Grafting in Breast Augmentation: A Systematic Review Highlighting the Need for Clinical Caution. Plast Reconstr Surg. 2024 Mar 1;153(3):527e-538e. doi: 10.1097/PRS.0000000000010614. Epub 2023 May 2. PMID: 37166041.

Appendix: Additional guidance for drafting

Category

Clinical Advisory Group advice needs to be categorised, selecting from the following 3 options:

- **National policy:** evidence-based best practice that is agreed to by all jurisdictions, is mandatory to implement nationwide, and is, or will be reflected in the BreastScreen Australia National Accreditation Standards (NAS) at the appropriate time.
- **Best practice guidance:** clinical advice that has a rigorous evidence base and should be encouraged as the care standard nationwide, however, is not mandated. For example, there may be jurisdictional constraints of an operational, budget or service delivery kind. Best practice guidance would not be included in the NAS, although over time there might be opportunity for it to become national policy.
- **Emerging evidence:** clinical evidence or operational trends that have not yet been rigorously verified or evidence that is conflicting, unclear, immature or requires further investigation. Jurisdictions may adopt emerging evidence or undertake trials or pilots to test, demonstrate or add to the evidence base (as they have done in examples to date). In this case, the clinical advice could be expressed as a position statement or a summary of evidence to inform jurisdictional decisions.

The final decision on categorisation of clinical advice is by the Cancer and Population Screening (CAPS) Committee.