

Title	Vacuum-Assisted Breast Biopsy
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Reference	Report prepared for AETMIS (AETMIS 06-06). Internet access to full text.
	ISBN 2-550-47119-9 (print, French edition), 2-550-47427-9 (PDF)

## Aim

To examine the quality of scientific evidence supporting the use of vacuum-assisted breast biopsy and the advisability of offering this procedure to patients requiring a breast biopsy after detection of a nonpalpable mammographic abnormality.

## Conclusions and results

Vacuum-assisted breast biopsy (VAB) is a technique designed to take a breast-tissue sample at the site of a nonpalpable mammographic abnormality to verify whether or not it is cancerous, and if so, to guide further clinical therapy.

There is a clinical consensus that percutaneous biopsy (core-needle biopsy) under ultrasound or stereotactic guidance is a less invasive and less costly procedure than open surgical biopsy, and that it accurately diagnoses most breast abnormalities. A variant of this technique, vacuum-assisted breast biopsy, is being used in at least 14 centers in Québec and accounted for roughly 3000 of the 13 000 percutaneous biopsies performed in 2004. Hence, it is important to know if the clinical benefits of this technique warrant expanding its use and covering its high costs.

This technical note assesses the scientific evidence on the diagnostic performance of VAB in relation to that of conventional core-needle biopsy. It also examines the economic aspects and the quality-assurance measures required to guarantee that percutaneous biopsies yield maximum benefits while avoiding errors and complications.

The analysis was limited by the lack of comparative studies, given that all the studies report on the experience of healthcare teams using either one or the other technique. Nevertheless, the available data suggest that vacuum-assisted biopsy offers a slight diagnostic advantage, with a 3.1% rate of undetected cancers for conventional (non-vacuum-assisted) biopsies compared with 1.6% for VAB. The vigilance of a multidisciplinary team of experts who can detect any discordance between mammographic and biopsy findings should identify most of these missed cases. The limited clinical gains attributed to VAB do not justify the appreciable cost increases associated with this procedure.

In conclusion, vacuum-assisted breast biopsy should not replace conventional percutaneous biopsy for all biopsies of nonpalpable breast abnormalities. However, some clinical indications may justify the use of VAB, and it would be important for an expert committee to identify these indications. All percutaneous biopsies of nonpalpable breast abnormalities should be performed only in centers that have achieved a high level of expertise in diagnosing breast abnormalities, and that have multidisciplinary teams collaborating closely to assess the cases and review diagnostic performance in the use of these percutaneous techniques.

## Methods

Literature search: MEDLINE and INAHTA databases.