



EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Directorate F - Health, Consumers & Reference Materials (Ispra)
Health in Society

European Commission Initiative on Breast Cancer (ECIBC): European guidelines on breast cancer screening and diagnosis Evidence profile

Healthcare question	Should stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy vs. ultrasound-guided needle core biopsy or ultrasound-guided vacuum assisted needle core biopsy be used to diagnose the presence of breast cancer in individuals presenting with breast calcifications?
Date	May 2016

Stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		Ultrasound-guided needle core biopsy or ultrasound-guided vacuum assisted needle core biopsy	
Sensitivity	0.90 (95% CI: 0.90 to 0.99)	Sensitivity	0.98 (95% CI: 0.95 to 0.99)
Specificity	0.99 (95% CI: 0.99 to 0.99)	Specificity	0.98 (95% CI: 0.94 to 0.99)

Prevalence	34%	50%
-------------------	-----	-----

Outcome	Nº of studies (Nº of participants)	Study design	Factors that may decrease certainty of evidence					Effect per 1,000 patients tested				Test accuracy CoE
								pre-test probability of 34%		pre-test probability of 50%		
			Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	Stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy	Ultrasound-guided needle core biopsy or ultrasound-guided vacuum assisted needle core biopsy	Stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy	Ultrasound-guided needle core biopsy or ultrasound-guided vacuum assisted needle core biopsy	
True positives (TP) (patients with the presence of breast cancer)	30 studies 6294 participants	cross-sectional (cohort type accuracy study)	not serious	serious ^a	not serious	serious ^b	none	306 (306 to 337)	333 (323 to 337)	450 (450 to 495)	490 (475 to 495)	⊕⊕○○ LOW
								27 fewer TP in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		40 fewer TP in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		
								34 (3 to 34)	7 (3 to 17)	50 (5 to 50)	10 (5 to 25)	
								27 more FN in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		40 more FN in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		
False negatives (FN) (patients incorrectly classified as not having the presence of breast cancer)												
True negatives (TN) (patients without the presence of breast cancer)	30 studies 6294 participants	cross-sectional (cohort type accuracy study)	not serious	serious ^a	not serious	serious ^b	none	653 (653 to 653)	647 (620 to 653)	495 (495 to 495)	490 (470 to 495)	⊕⊕○○ LOW
								6 more TN in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		5 more TN in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		
								7 (7 to 7)	13 (7 to 40)	5 (5 to 5)	10 (5 to 30)	
								6 fewer FP in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		5 fewer FP in stereotactic-guided needle core biopsy or stereotactic-guided vacuum assisted needle core biopsy		
False positives (FP) (patients incorrectly classified as having the presence of breast cancer)												

Explanations

- a. Indirect comparison of VAB versus other CNB techniques
- b. Only two studies were identified for US- Guided CNB