

# Patient-assisted versus standard compression in mammography screening: a randomized trial

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## BACKGROUND

We compared the compression force, breast thickness, and glandular dose, as well as the severity of discomfort and women's experience between the patient-assisted compression (PAC) and standard compression (SC) modes in mammography screening.

## RESULTS

Table 1: Women's Experience.

	I prefer the PAC over the SC	PAC caused less discomfort than SC	I would feel more comfortable going to my next breast screening examn if PAC is available	I would recommend the PAC to my friends and family
	n (%)	n (%)	n (%)	n (%)
Agree or Strongly Agree	283 (63.2)	227 (50.7)	239 (53.3)	303 (67.6)
Neither Agree nor Disagree	140 (31.3)	156 (34.8)	156 (34.8)	121 (27.0)
Disagree or Strongly Disagree	24 (5.3)	64 (14.3)	52 (11.6)	23 (5.1)
Unknown	1 (0.2)	1 (0.2)	1 (0.2)	1 (0.2)

SC: Standard compression, PAC: Patient-assisted compression

Table 2: Pain and compression parameters by compression mode.

	Compression Mode		p-value*
	Patient-assisted (n=448) mean (sd) [median]	Standard (n=448) mean (sd) [median]	
Discomfort score	3.94 (2.58) [4.00]	3.69 (2.58) [4.00]	<b>0,042</b>
Breast thickness (mm)	56.11 (12.03) [57.25]	57.52 (12.15) [58.40]	<b>0,015</b>
Compression Force (N)	99.27 (33.58) [92.00]	83.25 (16.37) [82.00]	<b>&lt;0.001</b>
Average glandular dose (mGy)	1.34 (0.27) [1.28]	1.37 (0.29) [1.31]	<b>0,018</b>

\*p-value for the Mann-Whitney U test

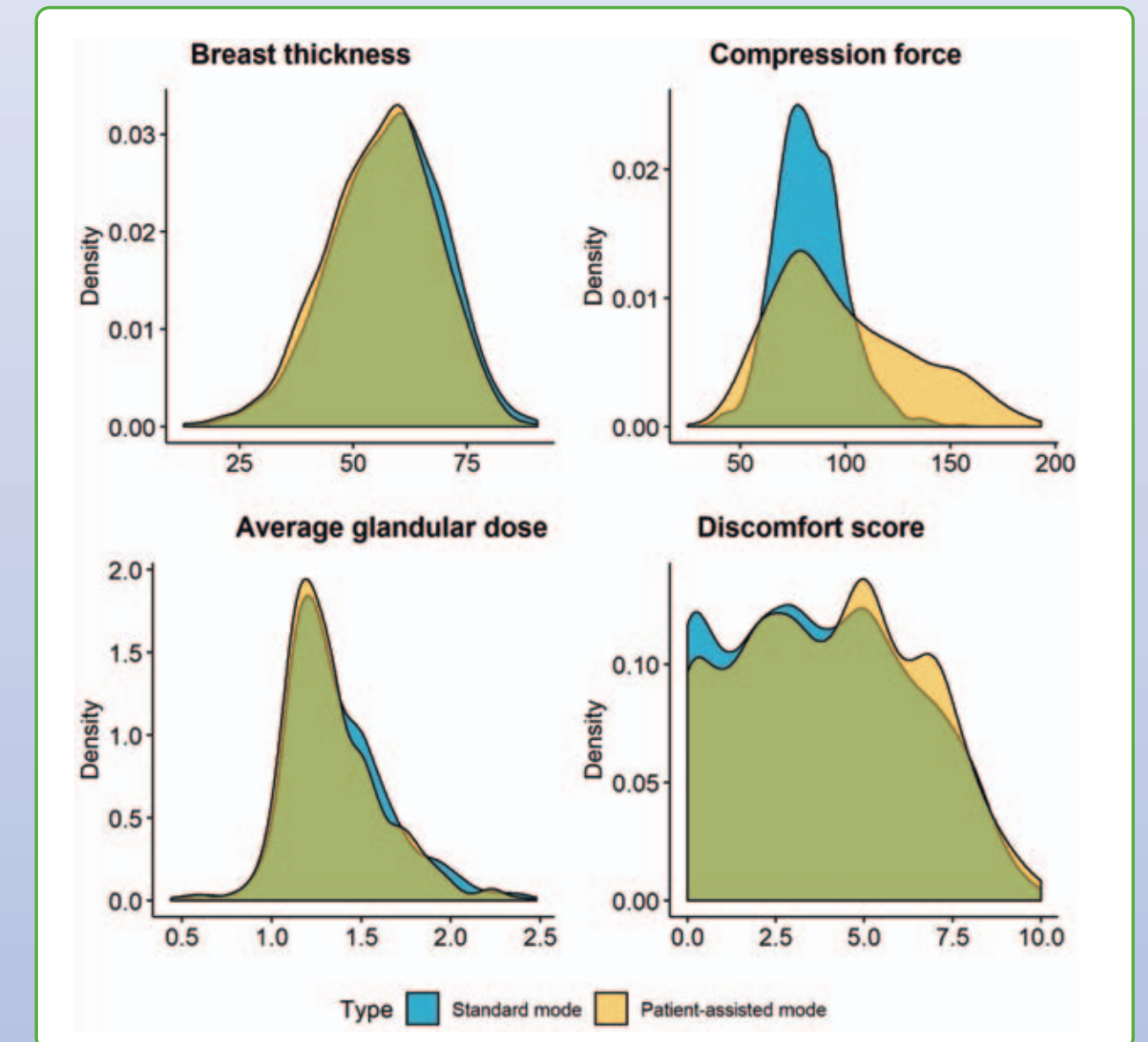
## CONCLUSION

PAC achieved higher compression forces without impairing the other technical imaging parameters and enhanced women's experience of screening mammography. The discomfort reported by women during the acquisition of the images seems to have similar distributions among the two modes.

## METHODS

We conducted a prospective randomized controlled study from September 2017 to December 2019 at University Hospital del Mar in Barcelona, Spain. All asymptomatic women aged 50 to 69 years who attended mammography screening, and who were able to understand the self-compression procedure, able to provide informed consent and assess the scale subjective pain, were invited in the study. Both, the laterality and the compression mode to start with were randomized across all subjects. One technical indicator measure per each one of the four mammography views was obtained. The technical indicators were compression force, breast thickness, and average glandular dose. For assessing discomfort, we used a validated 11-point numeric rating scale, where 0 indicated no pain and 10 indicated the worst pain. We evaluated the patient's experience with a four items questionnaire. Mann-Whitney U tests were used to test differences of the technical indicators according to the type of compression. Density plots were analyzed. P-values lower than 0.05 were considered statistically significant.

Figure 1: Density plots of compression parameters and discomfort



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