

Volume 1: July/August 2021

Research Brief

Welcome to the first edition of Research Brief – a regular update about the latest from Volpara Science and other industry leaders around the world. This past month, five new papers were published that included use of Volpara software.

SPOTLIGHT STUDY

Visualization of the nipple in profile: does it really affect selected outcomes in organized mammographic screening?

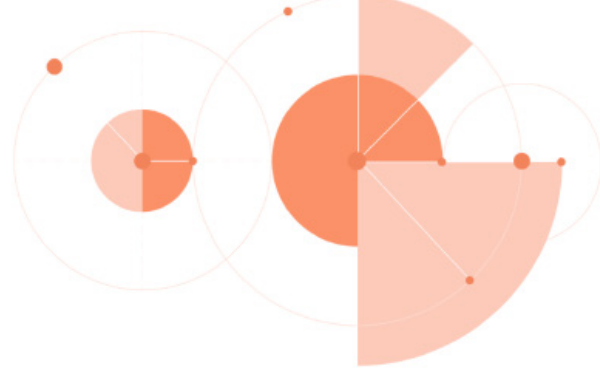
Holen et al., *Journal of Breast Imaging*, 2021

This study from Norway of more than 87,000 screening mammograms was the first investigation into the association between automated Volpara positioning measurements and screening outcomes. The study focused on the Volpara assessment of whether the nipple was in profile (NIP), and the researchers demonstrated:

- NIP was significantly associated with smaller and denser breasts.
- NIP was significantly associated with lower compression forces but higher compression pressures.
- There was no difference in the rates of consensus, recall, biopsy, or screen-detected breast cancer for breasts with the nipple in profile.
- The likelihood of achieving NIP was lower on digital breast tomosynthesis (3D) images compared to full field digital mammography (2D) images.

POSITIONING PRESSURE

Holen, Å., et al. *Journal of Breast Imaging*. 2021. <https://doi.org/10.1093/jbi/wbab042>



BITE-SIZED STUDY SUMMARIES

Take a minute to digest these brief summaries on other recent papers:

Deep-LIBRA: An Artificial Intelligence method for robust quantification of breast density with independent validation in breast cancer risk assessment

When discriminating between cancer cases and controls, researchers used Volpara’s volumetric density measures to validate the performance of their new, AI-based breast density assessment method called Deep-Libra.

RISK DENSITY

Haji Maghsoudi, O., et al. *Med Image Anal*. 2021. doi: 10.1016/j.media.2021.102138. Epub ahead of print.

Quantitative breast density analysis to predict interval and node-positive cancers in pursuit of improved screening protocols: a case-control study

Volpara’s dense volume was shown to strongly predict interval and node-positive breast cancers, with women in the highest quartile of dense volume having a 4.5 to 5-fold increased risk for interval or node-positive breast cancers.

RISK DENSITY

Burnside, E., et al. *Br J Cancer*. 2021. doi: 10.1038/s41416-021-01466-y. Epub ahead of print.

Predicting pathological axillary lymph node status with ultrasound following neoadjuvant therapy for breast cancer

Axillary lymph node dissection can be associated with adverse outcomes such as pain, numbness, and lymphedema, indicating a need to identify breast cancer patients who may not need this treatment following neo-adjuvant chemotherapy. This study evaluated the associations between breast density and rate of axillary-pathologic complete response.

DENSITY

Skarping, I., et al. *Breast Cancer Res Treat*. 2021. doi: 10.1007/s10549-021-06283-8. Epub 2021 Jun 12.

Medication use and mammographic breast density

In an investigation into three commonly used medications – statins, aspirin, and ibuprofen – no associations were seen for any of the medications with percent volumetric breast density or dense tissue volume, both provided by Volpara. Statin use, however, was associated with higher adipose tissue volumes.

DENSITY

Han, Y., et al. *Breast Cancer Res Treat*. 2021. doi: 10.1007/s10549-021-06321-5. Epub 2021 Jul 1.

OTHER SCIENCE RELATED NEWS

[Volpara granted 98th patent](#)

[Volpara’s latest imaging software \(VIS 3.2\) receives FDA clearance](#)

[Volpara partners with Invitae](#)

[Myriad Genetics’ RiskScore Accurately Identifies Breast Cancer Risk in Undiagnosed Women of All Ancestries](#)

MEET OUR TEAM

Volpara Science has developed a range of clinical solutions, from breast imaging, to breast density measurement, to breast cancer risk assessment – which would not have been possible without our diverse team of scientists. Each scientist uses their unique background to support the development of Volpara’s algorithms and the ground-breaking research of our customers and collaborators around the world. In this issue, we’d like to introduce you to three of our lead researchers.



Ariane Chan, PhD
Focus areas: Breast cancer risk, quantitative breast density, biology and chemoprevention

Ariane, now a lead researcher at Volpara, earned a PhD in Biomedical Science from Victoria University of Wellington, NZ in 2012. Following her PhD, she jumped at an internship opportunity with local Wellington start-up, Volpara – and has been here ever since. Ariane has managed Volpara’s core algorithm and research platform, and has also managed global research with our many partners. She has been particularly inspired by patient advocacy groups like “Are You Dense?” that continue to advocate, as Volpara does, for provided with personalized information relevant to their breast health.



Melissa Hill, PhD
Focus areas: Image quality measurement, quantitative image analysis, dosimetry, quality control

Melissa has been a Consultant Imaging Scientist since February 2016. Her background is in Medical Physics, and she holds a PhD from the University of Toronto under the supervision of Professor Martin Yaffe, co-founder of Volpara. During her PhD studies, she gained experience in breast imaging quality research, industry-academic collaboration and intellectual property. At Volpara, her work is focused on improvements of image quality assessment and breast density measurement. Based in France, she typically interacts with European researchers, but she also provides global customer support related to a physicist role, especially in Dose Alert investigations.



Hannah-Mary Gilroy, BSc
Focus areas: Image quality, automated breast positioning, breast density

Hannah-Mary works as the European Innovation Manager and helps support our research and clinical customers achieve their best results with Volpara software. She studied Physics and Applied Mathematics at university and worked as a high school teacher in the UK. She joined Volpara in 2018 as a product manager on the Science and Research team and enjoyed working with others to build impactful products. Now based in Belfast, Northern Ireland, she is particularly knowledgeable about Volpara’s PGMI image quality scoring system and the impact of breast positioning on mammography quality and early cancer detection.

If you would like to discuss using Volpara’s software for your personalized breast care or early detection research, please contact research@volparahealth.com and we’ll be in touch!