

## Cardiac Amyloidosis

*Diagnosis of cardiac amyloidosis on echocardiography using artificial intelligence: a multicentre international development and validation study.*

A., Ioannou, A., Khouri, M., Kitai, T., Vemulapalli, S., Lim S. C., Frost, M., Ezekowitz, J., Lam, C. S. P., Solomon, S., & Fontana, M. (2024).

Presented at EuroEcho Imaging 2024.

<https://us2.ai/ai-echo-to-diagnose-cardiac-amyloidosis-a-multi-centre-international-development-and-validation-study/>

*A fully automated machine learning algorithm to track disease progression in ATTR-CM.*

Venneri, L., Porcari, A., Ioannou, A., Sezer, Z., Bandera, F., Gillmore, J., Lim S. C., Frost, M., Ezekowitz, J., Lam, C. S. P., Solomon, S., & Fontana, M. (2024).

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<https://us2.ai/ai-echo-to-track-disease-progression-in-attr-cm/>

*Limitations of Apical Sparing Pattern in Cardiac Amyloidosis: A Multicenter Echocardiographic Study.*

Cotella, J., Randazzo, M., Maurer, M. S., Helmke, S., Scherrer-Crosbie, M., Soltani, M., Goyal, A., Zareba, K., Cheng, R., Kirkpatrick, J. N., Yogeswaran, V., Kitano, T., Takeuchi, M., Fernandes, F., Hotta, V. T., Campos Vieira, M. L., Elissamburu, P., Ronderos, R., Prado, A., Koutroumpakis, E., ... Lang, R. M. (2024).

*European Heart Journal. Cardiovascular Imaging*, 25(6), 754-761.

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*Novel Echocardiography Approach for Detecting Transthyretin Cardiac Amyloidosis.*

Randazzo, M., Cotella, J. I., Maurer, M., Helmke, S., Scerrer-Crosbie, M., Soltani, M., Goyal, A., Zareba, K., Cheng, R., Kirkpatrick, J. N., Yogeswaran, V., Kitano, T., Takeuchi, M., Fernandes, F., Hotta, V. T., Vleira, M. L. C., Elissamburu, P., Ronderos, R., Prado, A., Koutroumpalis, E., Deswal, A., Pursani, A., Sarswat, N., Addetia, K., Mor-Avi, V., Asch, F. M., Lang, R. M., & Slivnick, J. A. (2024).

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[https://www.onlinejase.com/article/S0894-7317\(24\)00188-3/fulltext](https://www.onlinejase.com/article/S0894-7317(24)00188-3/fulltext)

*Limitations of Echocardiographic Apical-Sparing Strain Pattern in Cardiac Amyloidosis: A Multicenter Study.*

Randazzo, M., Cotella J. I., Maurer, M. S., Scherrer-Crosbie, M., Soltani, M., Goyal, A., Zareba, K. M., Richard Kar-Hang Cheng, Vidhushei Yogeswaran, Kitano, T., Takeuchi, M., Fernandes, F., Viviane Tiemi Hotta, Vieira, M. L., Elissamburu, P., Ronderos, R. E., Prado, A., Koutroumpakis, E., Deswal, A., & Amit Pursnani. (2024).

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## Mitral Regurgitation

*An Automated Machine Learning-based Quantitative Multiparametric Approach for Mitral Regurgitation Severity Grading.*

Sadeghpour, A., Jiang, Z., Hummel, Y. M., Frost, M., Lam, C. S. P., Shah, S. J., Lund, L. H., Stone, G. W., Swaminathan, M., Weissman, N. J., & Asch, F. M. (2024).

*JACC: Cardiovascular Imaging*, 18(1), 1-12.

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## Aortic Stenosis

*Artificial Intelligence-Assisted Classification of Aortic Stenosis Severity.*

Arnold, J. H., Desai, K. V., Slostad, B., Bhayani, S., Ouwerkerk, W., Hummel, Y. M., Lam C. S.P., Ezekowitz, J. A., Frost, M., Jiang, Z., Equilbec, C., Twing, A., Pellikka, P. A., Frazin, L. J., Kansal, M. M., & Krishna, H. (2024).

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*Application of Machine Learning Technology to Automate Proximal Aorta Dimension by Echocardiography.*

Dohse, C. A., Kansal, M. M., Twing, A., Frost, M., Equilbec, C., Hill, M. C., Carolina, M., Brody Slostad, Carter, A., Smith, D., Tiu, D., Lam, C. S. P., Ezekowitz, J. A., Pellikka, P. A., Behan, S., & Krishna, H. (2024).

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*Machine Learning Based Assessment of Aortic Valve Parameters on Transthoracic Echocardiography and Comparison to Previous Literature.*

Tsourdinis, G. E., Xia, E., Hussain, K., Sanagala, T., & Karagodin, I. (2024).

*Journal of the American College of Cardiology*, 83(13), 1570–1570.

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*Different predictors for symptomatic non-response and adverse outcomes one year after transcatheter aortic valve implantation using artificial intelligence-derived echocardiographic parameters.*

Van Bergeijk, K., Venema, S., Tromp, J., Hummel, Y., Ouwerkerk, W., Van der Werf, R., Douglas, Y., Van den Heuvel, A., Voors, A., & Wykrzykowska, J. (2024).

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*Discordance between symptomatic response and change in cardiac structure and function one year after transcatheter aortic valve implantation.*

Venema, C. S., Bergeijk, V., Plekkenpol, L. H., Tromp, J., Ouwerkerk, W., Hummel, Y. M., Krikken, J. A., Der, V., Den, V., Douglas, Y. L., E Lipsic, Voors, A. A., & Wykrzykowska, J. J. (2024).

*European Heart Journal*, 45(Supplement\_1).

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## Contrast

*Fully Automated Artificial Intelligence Assessment of the Left Ventricle by Contrast Echocardiography.*

Palmer, C., Patel, K., Frost, M., Equilbec, C., Swaminathan, M., & Mazur, W. (2024).

*Journal of the American College of Cardiology*, 83(13), 1424–1424.

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## Pulmonary Hypertension

*Echocardiography in Pulmonary Arterial Hypertension Using Deep Learning Segmentation Algorithms.*

Celestin, B. E., S.P. Bagherzadeh, Santana, E., Frost, M., Mathias, I., Sweatt, A. J., Zamanian, R., Hummel, Y., Sandros, M., Gomez Rendon, G., Salerno, M., & Haddad, F. (2024).

*The Journal of Heart and Lung Transplantation*, 43(4), S410–S410.

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*Fully Automated versus Core Laboratory Analysis of Tricuspid Regurgitation Maximal Velocity in Patients with Pulmonary Hypertension.*

Celestin, B., S. Bagherzadeh, Santana, E., Frost, M., Iversen, M., Sweatt, A., Zamanian, R., Hummel, Y., Sandros, M., Gomez Rendon, G., Salerno, M., & Haddad, F. (2024).

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## Heart Failure with Preserved Ejection Fraction

*Deep Learning-Based Automated Measurements of Echocardiographic Estimators of Invasive Pulmonary Capillary Wedge Pressure Perform Equally to Core Lab Measurements: Results from REDUCE LAP-HF II.*

Yaku, H., Komtebedde, J., Silvestry, F. E., & Shah, S. J. (2024).

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## Left / Right Ventricle

*Fully Automated Machine Learning Based Echocardiographic Assessment of Left Ventricular Ejection Fraction.*

Tsourdinis, G. E., Xia, E., Hussain, K., Sanagala, T., Karagodin, I. (2024).

*Journal of the American College of Cardiology*, 83(13), 1523–1523.

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*Concordance of left ventricular volumes and function measurements between two human readers, a fully automated AI algorithm, and the 3D heart model.*

Myhre, P. L., Gaibazzi, N., Domenico Tuttolomondo, Sartorio, D., Ugolotti, P. T., Covani, M., Bettella, A., & Suma, S. (2024).

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*Comparison of Human vs Artificial Intelligence (AI) Based US2.AI Software Derived Measurement of Left Ventricular Diastology Variables.*

Shrivastav, R., Tilkens, B., Karnik, A., Appadurai, V., Puthumana, J. J., Thomas, J. D., Rigolin, V. H., & Narang, A. (2024).

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*Prospective Clinical Validation of a Deep Learning-Based Automated Pipeline for Assessment of Right Ventricular Size and Function.*

Karnik, A., Shrivastav, R., Tilkens, B., Puthumana, J. J., Rigolin, V. H., Thomas, J. D., & Narang, A. (2024).

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*Performance of fully automated AI-based left ventricular strain measurement in cancer patients treated with immune checkpoint inhibitors.*

Tzuberi, M., LauferPerl, M., Merin, R., Khouryl, S., Ben-Shoshan, J., Kapusta, L., Topilsky, Y., & Flint, N. (2024).

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## Time Efficiency

*Reducing echocardiographic examination time through routine use of fully automated software: a comparative study of measurement and report creation time.*

Hirata, Y., Nomura, Y., Yoshihito Saijo, Sata, M., & Kusunose, K. (2024).

*Journal of Echocardiography*, 22, 162-170.

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## Benefits of AI-Echo

*Artificial Intelligence-based automated ECHOCardiographic measurements and the workflow of sonographers (AI-ECHO): Randomized Crossover Trial.*

Sakamoto, A., Kagiya, N., Sato, E., Nakamura, Y., Kanedo, T., Miyazaki, S., & Minamino, T. (2024). *Circulation*, 150(25), e712-e763.

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*Artificial intelligence and digital tools for design and execution of cardiovascular clinical trial.*

Hu, J.-R., Power, J. R., Zannad, F., & Lam, C. S. P. (2024).

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*AI in Echocardiography: State-of-the-art Automated Measurement Techniques and Clinical Application.*

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*Digital Tools in Heart Failure: Addressing Unmet Needs.*

Myhre, P. L., Tromp, J., Ouwerkerk, W., Wei, D. T. S., Docherty, K. F., Gibson, C. M., & Lam, C. S. P. (2024).

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## **AI in Electronic Health Record Surveillance**

*Artificial Intelligence-assisted automated heart failure detection and classification from electronic health records.*

Oo, M. M., Gao, C., Cole, C., Hummel, Y., Guignard-Duff, M., Jefferson, E., Hare, J., Voors, A. A., De Boer, R. A., Lam, C. S. P., Mordi, I. R., Tromp, J., & Lang, C. C. (2024).

*ESC Heart Failure*, 11(5), 2769-2777.

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## **POCUS-AI enhanced novice echo screening & Community-based Screening**

*Point-of-care AI-enhanced Novice Echocardiography for Screening Heart Failure (PANES-HF).*

Huang, W., Koh, T., Tromp, J., Chandramouli, C., Ewe, S. H., Ng, C. T., Lee, A. S. Y., Teo, L. L. Y., Hummel, Y., Huang, F. Q., & Lam, C. S. P. (2024).

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*Implementing focused echocardiography and AI-supported analysis in a population-based survey in Lesotho: implications for community-based cardiovascular disease care models.*

Firima, E., Gonzalez, L., Manthabiseng, M., Bane, M., Lukau, B., Leigh, B., Kaufmann, B. A., Weisser, M., Amstutz, A., Tromp, J., Labhardt, N. D., & Burkard, T. (2024).

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## Patient Attitudes toward AI-Echo

*Applying the UTAUT2 framework to patients' attitudes toward healthcare task shifting with Artificial Intelligence.*

Huang, W., Ong, W. C., Kei, M., Yin, E., Koh, T., Chandramouli, C., Ng C. T., Hummel, Y., Huang, F., Lam, C. S.P., & Tromp, J. (2024).

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## Diabetes

*Screening for Stage B Heart Failure in Type 2 Diabetes: Natriuretic Peptide Screening Alone Misses Echocardiographic Abnormalities.*

Chandramouli, C., Tay, W. T., Tan, S. Y., Wong, J. S. Y., Yeo, C. P., Goh, G. B. B., Tan, H. C., Kwek, J. L., Lam, C. S. P., & Bee, Y. M. (2024).

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## Human vs. AI Analysis

*AI Automated Echocardiographic measurements – is this the future?*

Rapaso, M. A., Martins, A. M., Garcia, A. B., Abrantes, A., Gregório, C., Gonçalves, S., Frost, M., Michel, P., Almeida, A., Sousa, C., & Pinto, F. J. (2024).

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*Do Different Artificial Intelligence Tools for Automated Analysis of Echocardiographic Images Provide Concordant Measurements?*

Szasz, T., Cotella, J. I., Slivnick, J. A., Latz, M., Guo, J., Mor-Avi, V., Hitschrich, N., Wiebel, H., Schreckenberger, M., Gessert, N. T., Asch, F. M., & Lang, R. M. (2024).

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*Prediction of Mortality by Echocardiography: Human vs. AI Analysis.*

Merin, R., Perelman, M. G., Merin, H., Tzuberi, M., Topilsky, Y., Banai, S., & Flint, N., (2024).

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*External validation of automated deep-learning based echocardiogram analysis.*

Merin, R., Gvili-Perelman, M., Merin, H., Tzuberi, M., Topilsky, Y., & Flint, N. (2024).

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