IHE® EUROPE EXPERIENCE DAYS

BRUSSELS 2026

25-26 MARCH

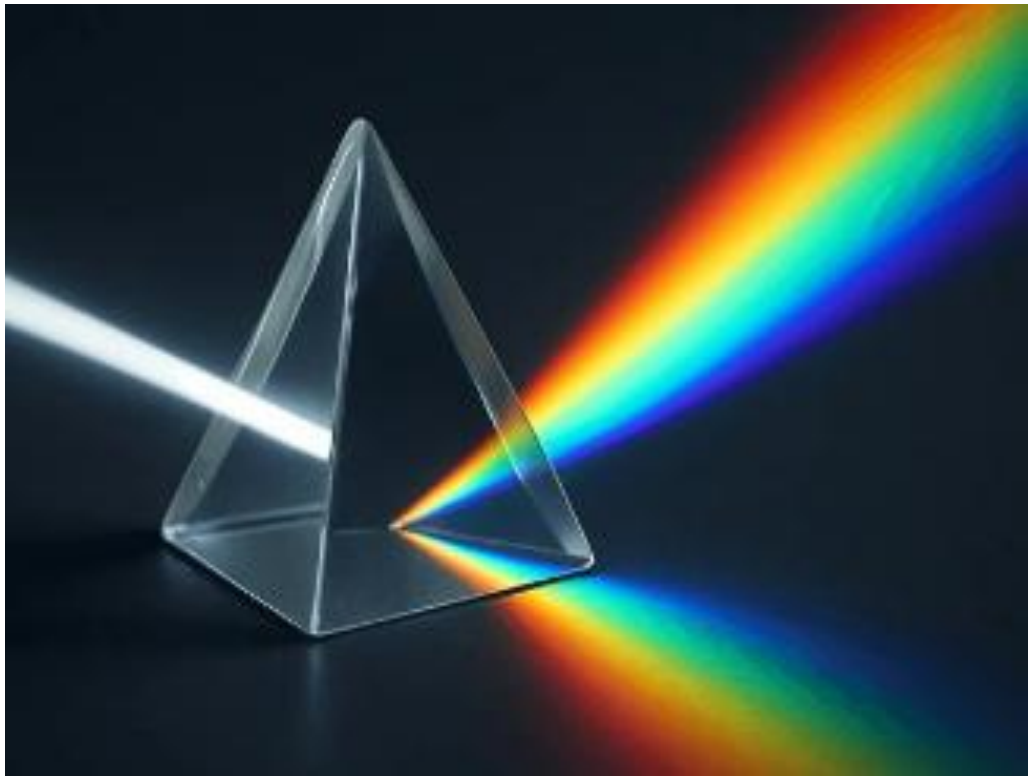
AI Tools in Radiology

Dr. J.J. Visser

SIEMENS Healthineers · AGFA HealthCare · ENT Enlightening New Technologies · ViCo · Dedalus · IHE CATALYST

DISCLOSURES

- Grant to institution from Qure.ai, Enlitic, Promedius
- Consulting fees from Tegus
- Payment to institution for lectures from Roche
- Travel grant from Qure.ai
- Participation advisory board from Noaber Foundation, AheadHealth, Contextflow
- Phantom shares in AheadHealth, Contextflow and Quibim
- Leadership on the steering committee of the PINPOINT (2) Project (payment to institution from AstraZeneca)
- NVvR AIfI Steering Committee (payment to institution)
- Chair ESR Value-based radiology Subcommittee (unpaid)
- RSNA Common Data Elements Steering Committee (unpaid)
- Board member EuSoMII (unpaid)
- Chair ESR ESR Subspecialities and Allied Sciences Committee (unpaid)
- Member Executive Council ESR (unpaid)



NUMERICAL OVERVIEW

TOTAL FDA CLEARED SaMD PRODUCTS: 455

☑ Pediatric
☑ Adult

Manufacturer
(Alle)

Subspecialty	CT	MR	PET	US	Null	3D-Angi	XRAY/MAM
Abdominal	28	25	1	13		2	3
Cardiac	59	20	2	19		2	8
Chest	60	9	2	6		1	45
Musculoskeletal	22	10	1	4		1	22
Neuroradiology	97	55	4	1	1	1	23
Breast Imaging	8	6	1	6		1	31
Pediatric	5	9		3			19

https://aicentral.acrdsi.org/AI-Landscape

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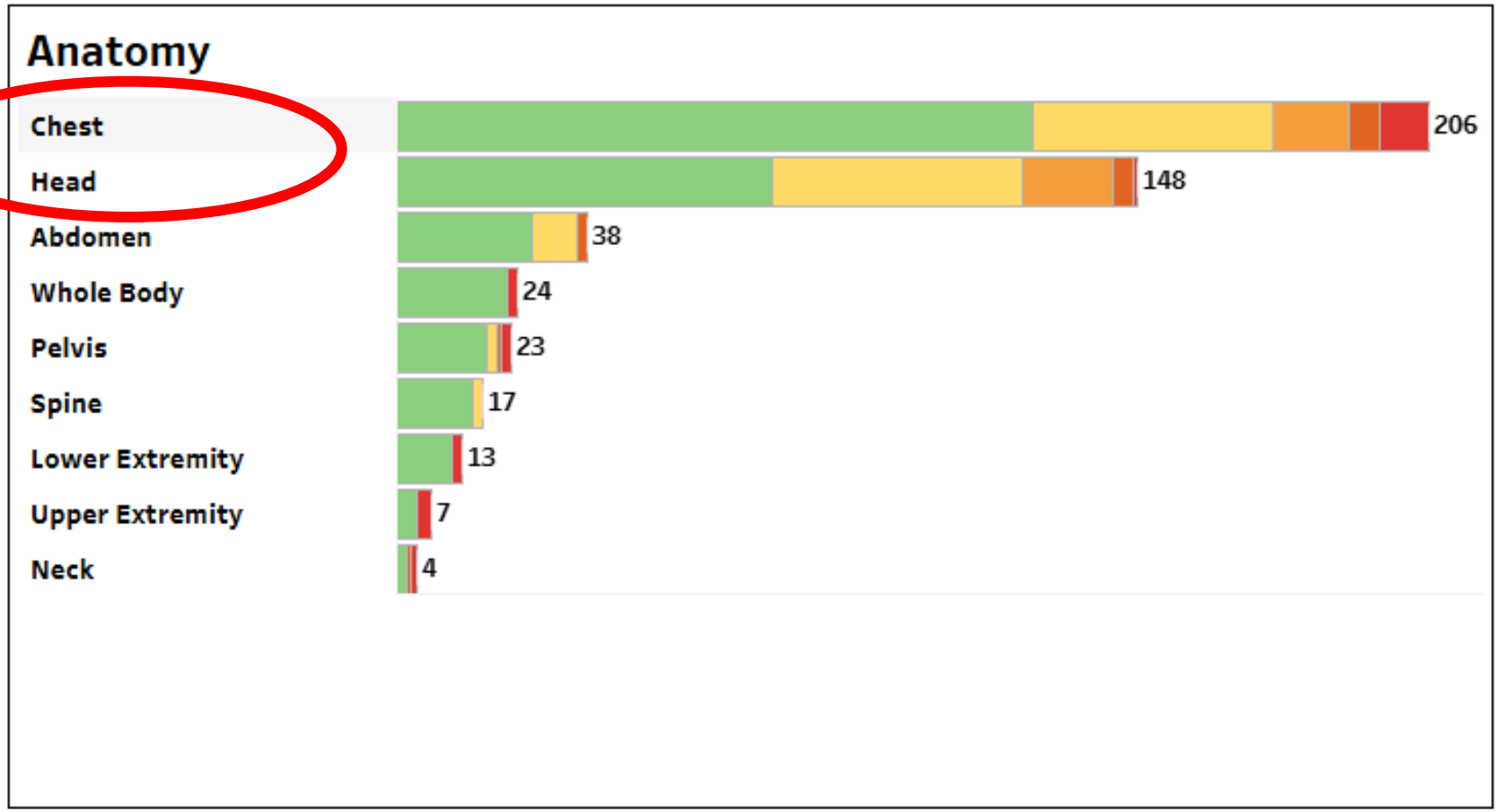

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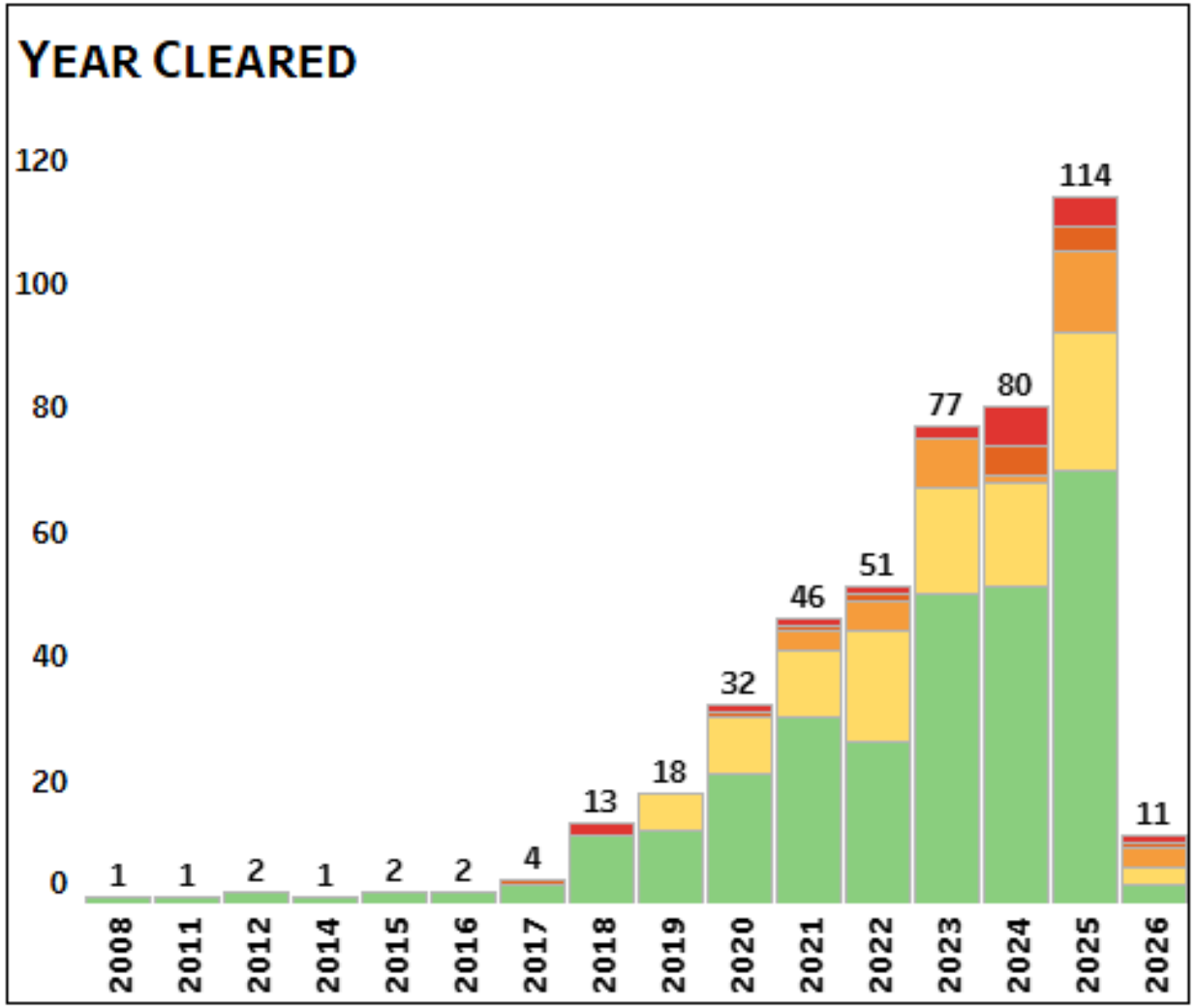

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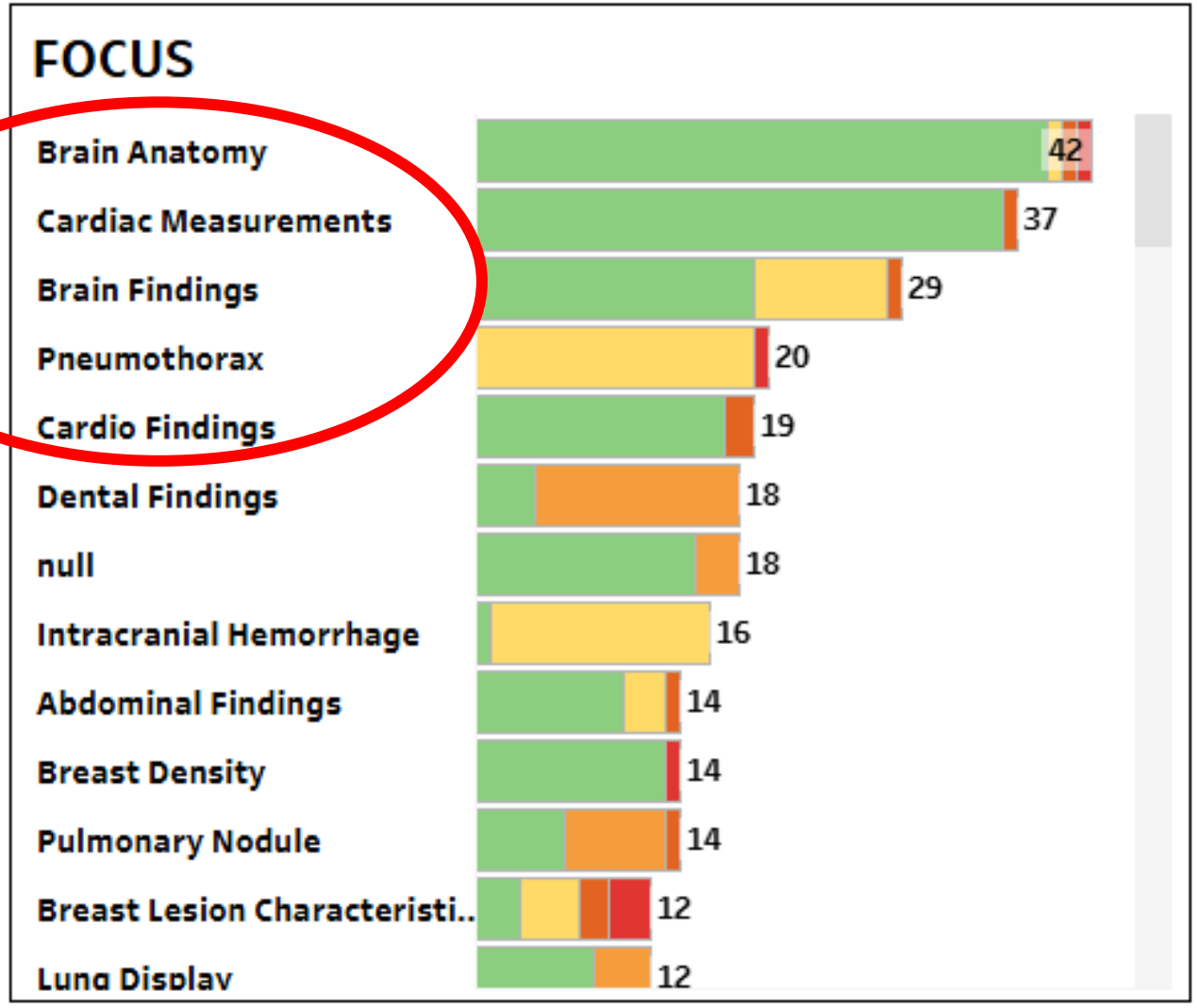

https://aicentral.acrdsi.org/AI-Landscape

RADIOLOGY.
Health AI Register

Products

Find the artificial intelligence based software for radiology that you are looking for. All products listed are available for the European market (CE marked).

299/299 products

https://www.healthairegister.com/radiology/products

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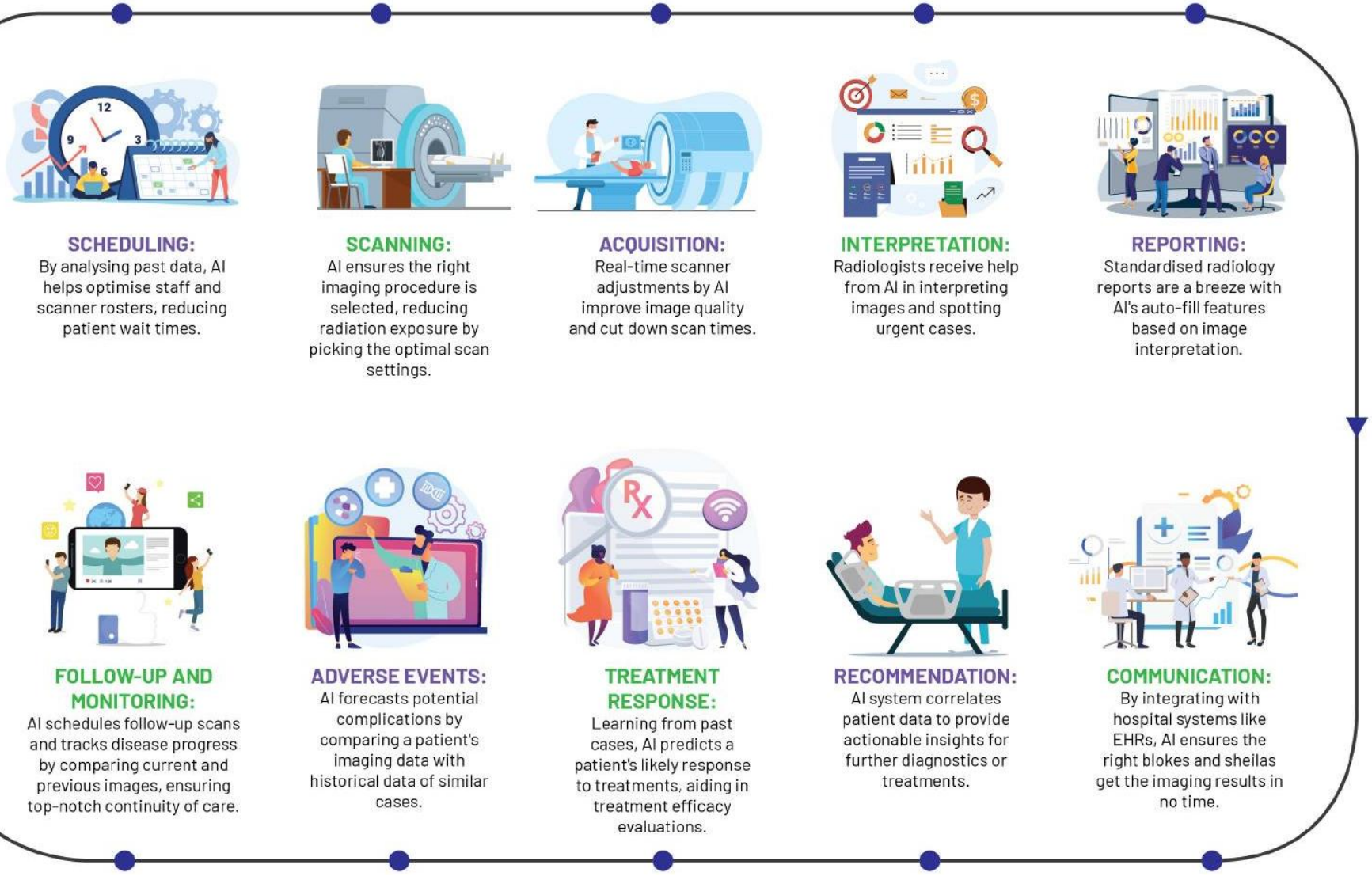
IMAGING VALUE CHAIN



Najjar R. Redefining Radiology: A Review of Artificial Intelligence Integration in Medical Imaging. Diagnostics (Basel). 2023 Aug 25;13(17):2760. doi: 10.3390/diagnostics13172760. PMID: 37685300; PMCID: PMC10487271.

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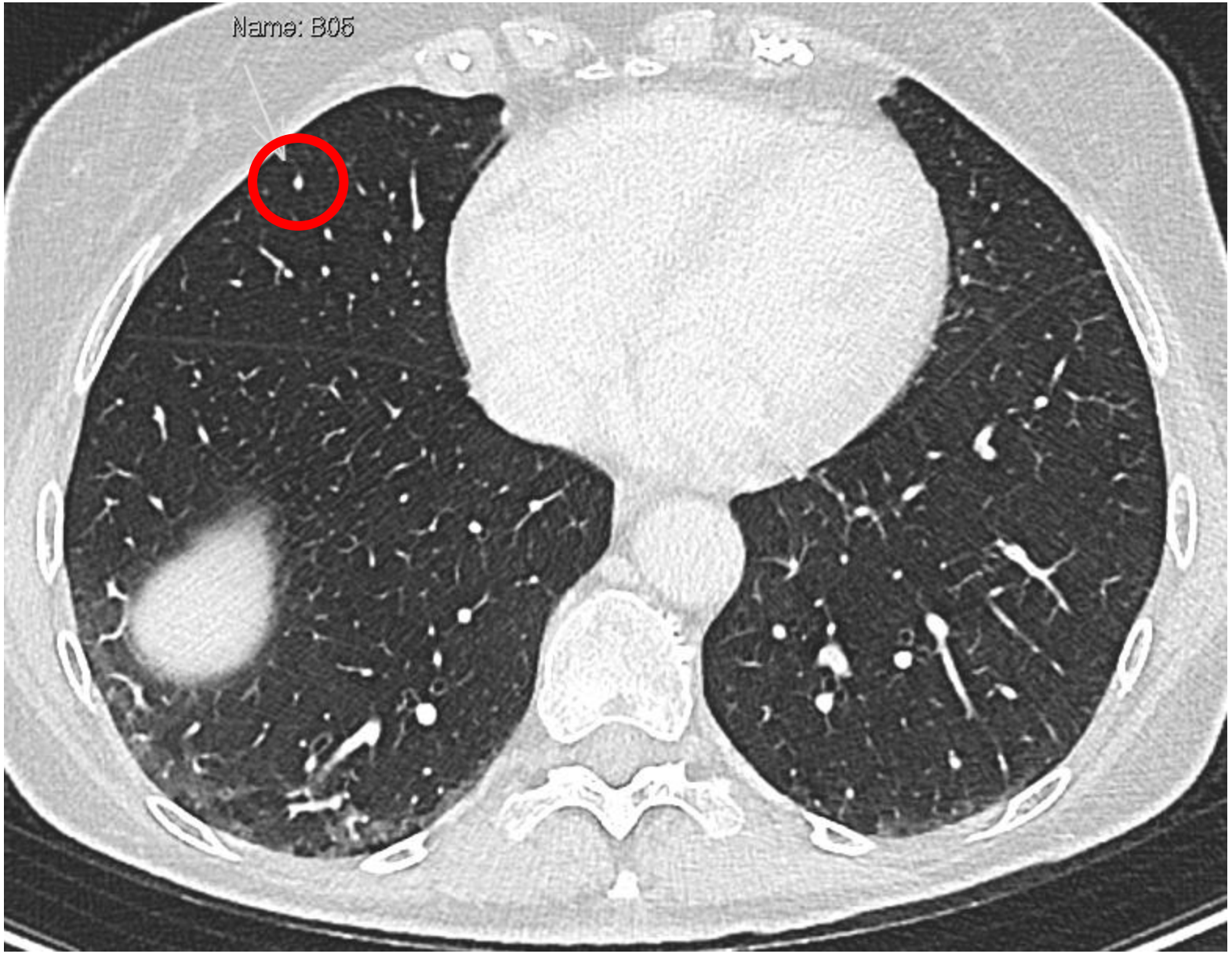
Stage of radiology workflow	Count
Scheduling	1
Scanning	0
Acquisition	2
Interpretation	33
Reporting	3
Communication	0
Recommendation	0
Treatment response	0
Adverse events	0
Follow-up and monitoring	0

Verwey J, Zwart B, IJzerman M, Visser JJ, Sülz S. Factors influencing AI acceptance in radiology: a systematic review across the radiology workflow. Eur Radiol. 2025 Nov 21. doi: 10.1007/s00330-025-12129-4. Epub ahead of print. PMID: 41269301.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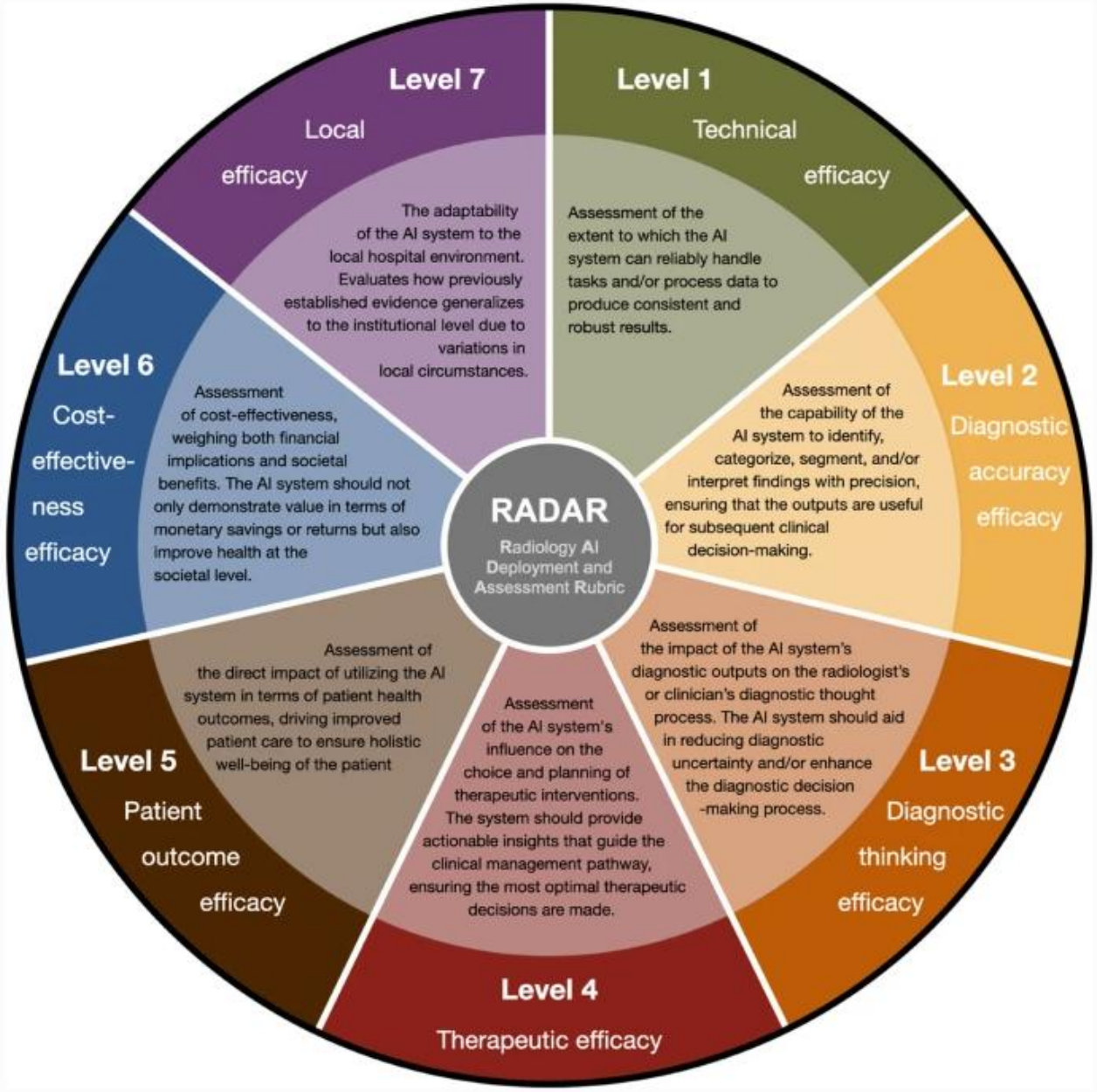
ADDED VALUE

Level	Example
1. Technical efficacy	Applicability
2 Diagnostic accuracy efficacy	Sensitivity, specificity
3. Diagnostic thinking efficacy	Impact on diagnosis
4. Therapeutic efficacy	Impact on treatment decisions
5. Patient outcomes efficacy	Overall survival
6. Societal efficacy	Cost-effectiveness



Fryback et al.; The efficacy of diagnostic imaging; MDM 1991
Boverhof BJ et al, Radiology AI Deployment and Assessment Rubric (RADAR) to bring value-based AI into radiological practice. Insights Imaging. 2024 Feb 5;15(1):34

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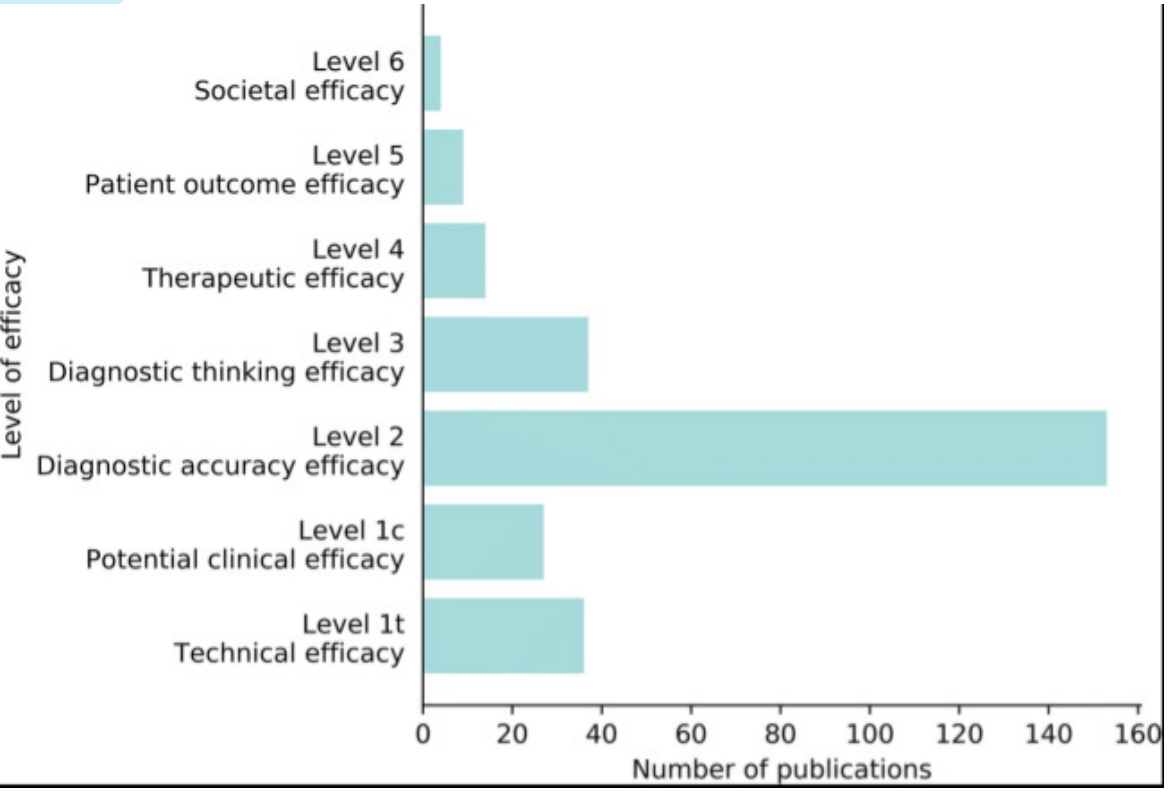

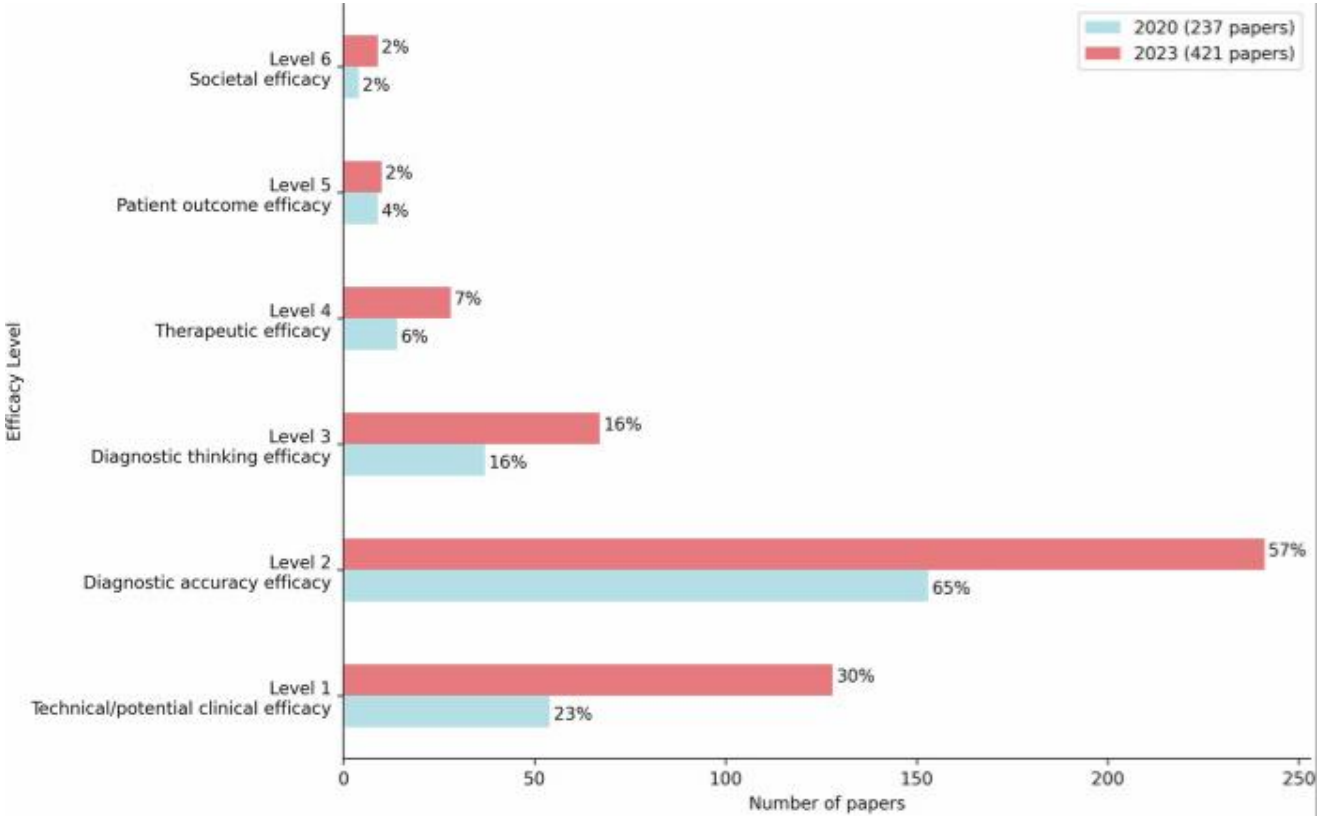

Fryback et al.; The efficacy of diagnostic imaging; MDM 1991
van Leeuwen KG, Schalekamp S, Rutten MJCM, van Ginneken B, de Rooij M. Artificial intelligence in radiology: 100 commercially available products and their scientific evidence. Eur Radiol. 2021 Jun;31(6):3797-3804. doi: 10.1007/s00330-021-07892-z. Epub 2021 Apr 15. PMID: 33856519; PMCID: PMC8128724.
Antonissen N, Tryfonos O, Houben IB, Jacobs C, de Rooij M, van Leeuwen KG. Artificial intelligence in radiology: 173 commercially available products and their scientific evidence. Eur Radiol. 2026 Jan;36(1):526-536. doi: 10.1007/s00330-025-11830-8. Epub 2025 Jul 24. PMID: 40707732; PMCID: PMC12711992.

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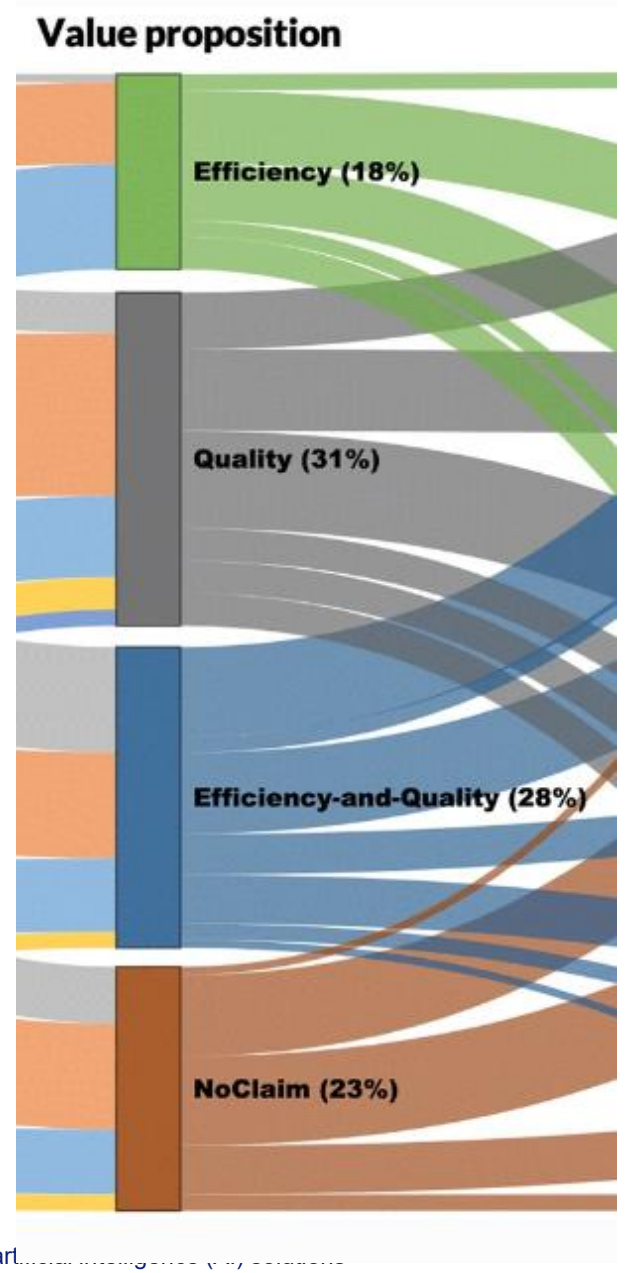
- Added value according to vendors:
  - Better decisions (33%)
  - Higher quality (31%)
  - Work acceleration(19%)
  - Cost reduction (10%)
  - Lowers work pressure(7%)



Mehrizi MHR, Gerritsen SH, de Klerk WM, Houtschild C, Dinnessen SMH, Zhao L, van Sommeren R, Zerfu A. How do providers of art... propose and legitimize the values of their solutions for supporting diagnostic radiology workflow? A technography study in 2021. Eur Radiol. 2023 Feb;33(2):915-924. doi: 10.1007/s00330-022-09090-x. Epub 2022 Aug 18. PMID: 35980427; PMCID: PMC9889424.
Mun SK, Wong KH, Lo SB, Li Y, Bayarsaikhan S. Artificial Intelligence for the Future Radiology Diagnostic Service. Front Mol Biosci. 2021 Jan 28;7:614258. doi: 10.3389/fmolb.2020.614258. PMID: 33585563; PMCID: PMC7875875.

LEVEL OF EVIDENCE

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PREVIOUS NEXT

Original Research
Thoracic Imaging

AI Improves Nodule Detection on Chest Radiographs in a Health Screening Population: A Randomized Controlled Trial

Ju Gang Nam, Eui Jin Hwang, Jayoun Kim, Nanhee Park, Eun Hee Lee, Hyun Jin Kim, Miyeon Nam, Jong Hyuk Lee, Chang Min Park, Jin Mo Goo

Author Affiliations

Published Online: Feb 7 2023 | https://doi.org/10.1148/radiol.221894

Interval cancer, sensitivity, and specificity comparing AI-supported mammography screening with standard double reading without AI in the MASAI study: a randomised, controlled, non-inferiority, single-blinded, population-based, screening-accuracy trial

Jessie Gommers, Veronica Hernström, Viktoria Josefsson, Hanna Sartor, David Schmidt, Annie Hjelmgren, Anna-Maria Larsson, Solveig Hofvind, Ingvar Andersson, Aldana Rosso, Oskar Hagberg, Kristina Lång

Summary

Background Evidence indicates that artificial intelligence (AI) can improve mammography screening by increasing cancer detection and reducing screen reading workload, but its effect on interval cancers (primary breast cancers diagnosed between two screening rounds or within 2 years after the last scheduled screening that were not detected at screening) is unknown. We aimed to compare the interval cancer rate in AI-supported mammography screening with standard double reading without AI.

Lancet 2026; 407: 505–14
See Comment page 471

Department of Medical Imaging, Radboud University Medical Centre, Nijmegen, Netherlands (J Gommers MSc)

Nevertheless, RCTs remain the most powerful type of experimental study. [4] In light of the AI revolution in radiology, we believe the time has come for RCTs and encourage further research in this important field.

https://www.researchgate.net/figure/Hierarchy-of-evidence-pyramid-The-pyramidal-shape-qualitatively-integrates-the-amount-of_fig1_311504831

Gorenstein L, Soffer S, Apter S, Konen E, Klang E. AI in radiology: is it the time for randomized controlled trials? Eur Radiol. 2023 Jun;33(6):4223-4225. doi: 10.1007/s00330-022-09381-3. Epub 2023 Jan 4. PMID: 36597003.

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	Intervention group (n=53 043)	Control group (n=52 872)	Proportion ratio	p value
Number of recalls*	1110	1027	NA	NA
Number of screen-detected cancers*	338	262	NA	NA
Number of interval cancers	82	93	NA	NA
Number of cancers in total	420	355	NA	NA
Interval cancer rate per 1000	1·55 (1·23–1·92)	1·76 (1·42–2·15)	0·88 (0·65–1·18)	0·41
Sensitivity	80·5% (76·4–84·2)	73·8% (68·9–78·3)	1·09 (1·01–1·18)	0·031
Specificity	98·5% (98·4–98·6)	98·5% (98·4–98·6)	1·00 (0·99–1·01)	0·88

Data are n or point estimate (95% CI). NA=not applicable. *Rates for recall and cancer detection have previously been reported.[8] The numbers are included for contextualisation of sensitivity and specificity.

***Table 2:* Interval cancer rate, sensitivity, and specificity**

Gommers J, Hernström V, Josefsson V, Sartor H, Schmidt D, Hjelmgren A, Larsson AM, Hofvind S, Andersson I, Rosso A, Hagberg O, Lång K. Interval cancer, sensitivity, and specificity comparing AI-supported mammography screening with standard double reading without AI in the MASAI study: a randomised, controlled, non-inferiority, single-blinded, population-based, screening-accuracy trial. Lancet. 2026 Jan 31;407(10527):505-514. doi: 10.1016/S0140-6736(25)02464-X. PMID: 41620232.

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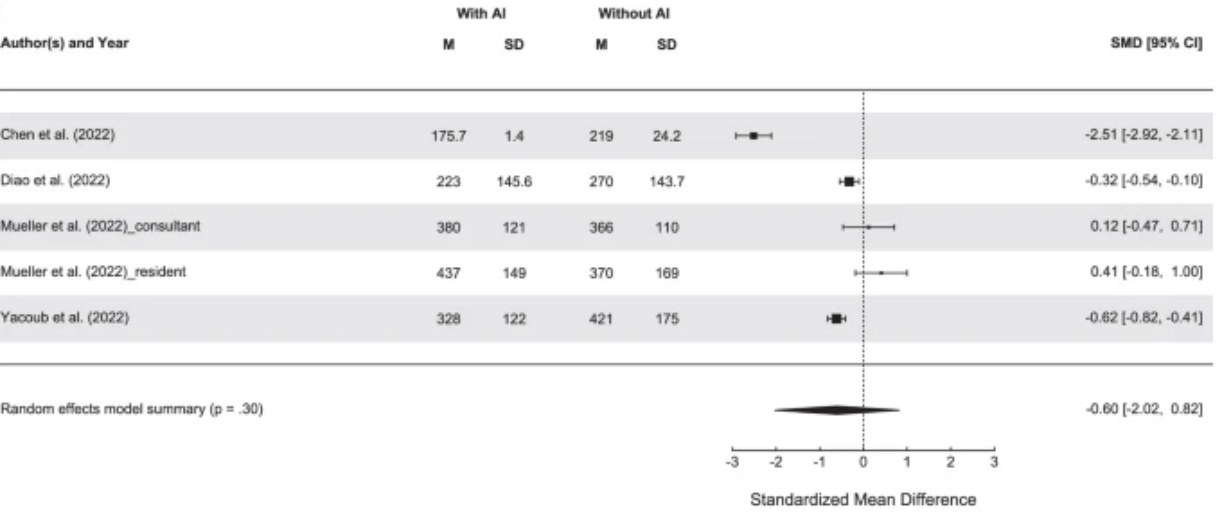
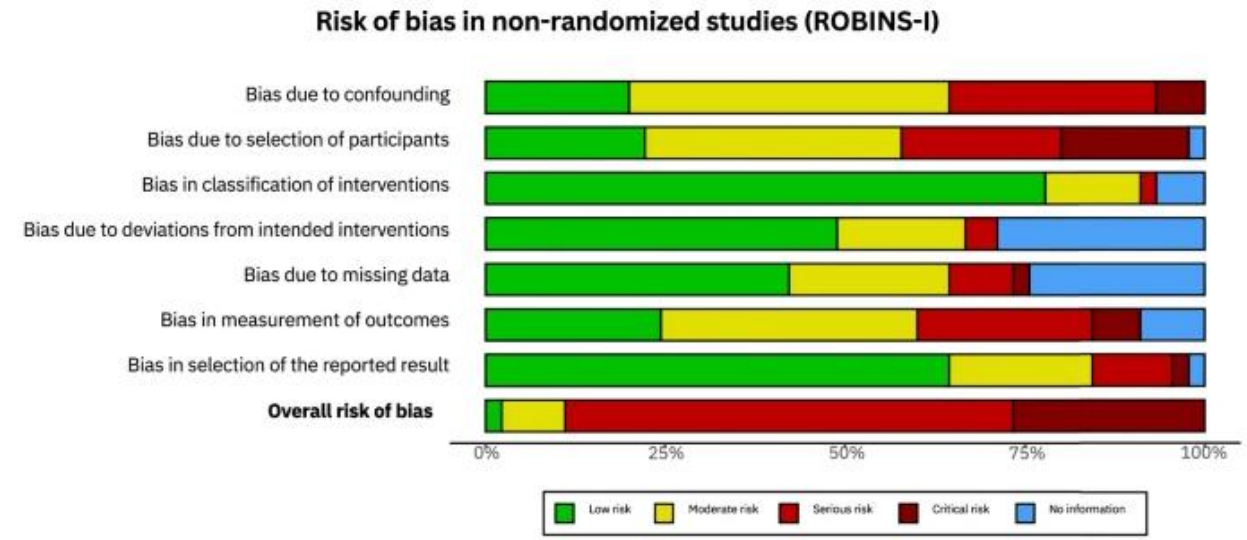
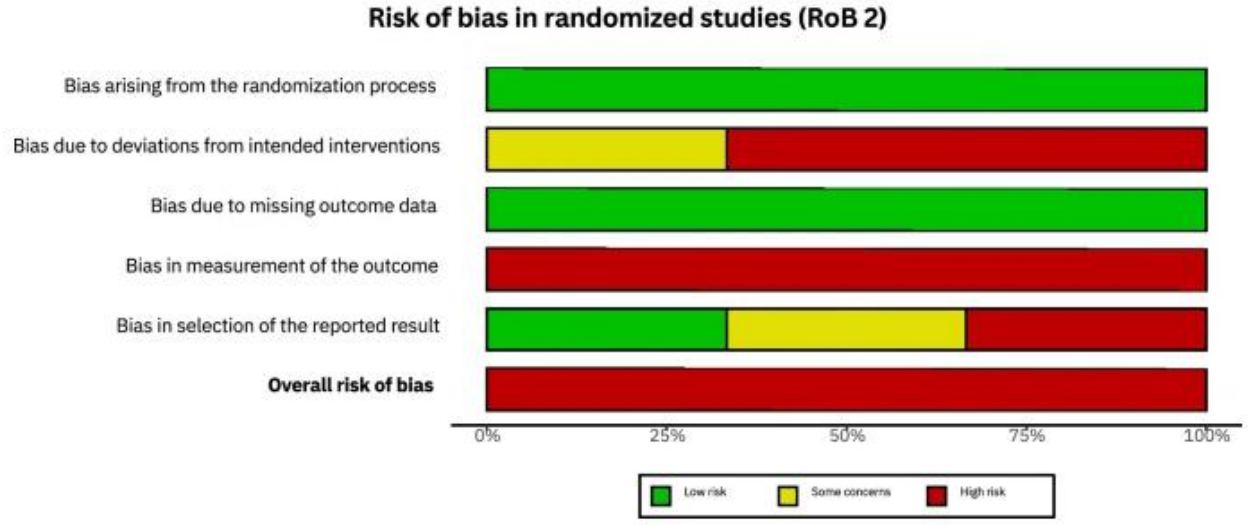


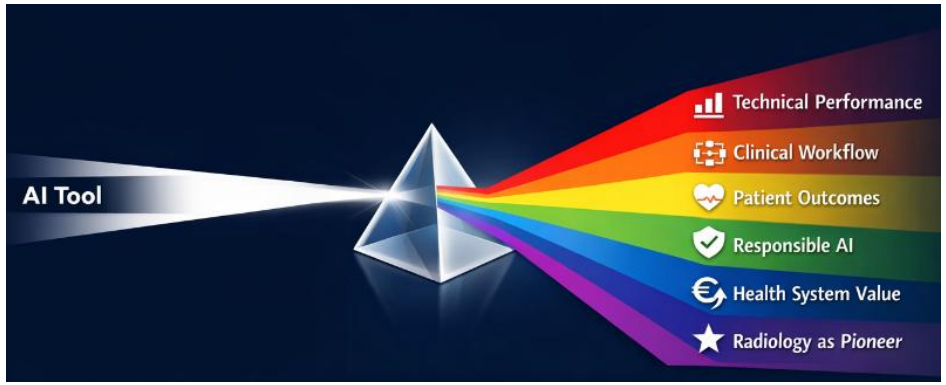




Wenderott K, Krups J, Zaruchas F, Weigl M. Effects of artificial intelligence implementation on efficiency in medical imaging-a systematic literature review and meta-analysis. NPJ Digit Med. 2024 Sep 30;7(1):265. doi: 10.1038/s41746-024-01248-9. PMID: 39349815; PMCID: PMC11442995.

CONCLUSIONS

- Radiology still at the forefront of AI in healthcare
- Increasing number of radiology AI tools available
- Mostly focused on imaging interpretation
- Proven added value limited
- Predominantly lack of solid scientific evidence

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