

PUBLICATIONS

Published by members of the Medical Physics Unit: 2026 calendar year (x*)

(not including papers/articles submitted, in review, accepted)

(names of MPU staff members are underlined, students are indicated by †)

1. D. Andrews, S. Golchi, D.L. Collins, Alzheimer's Disease Neuroimaging Initiative, *A digital twin methodology using retrospective patient data for sample size reduction in Alzheimer's disease clinical trials*, *Alzh. Res. Ther.*, in Springer Nature, PubMed, April 2026.
2. S.A. Hosseini, E. Aumont, N. Rahmouni, M.S. Woo, A.C. Macedo, B. Hall et al, D.L. Collins, J. Klostranec, T.A. Pascoal, P. Rosa-Neto, *Choroidal-ventricular system abnormalities are linked to amyloid- β aggregation in Alzheimer's disease*, *Alzh. Dement.* **22**(2), e71205 (2026).
3. O. Lefebvre, F.C. Lemire, J-F. Ethier, L.H. Chikouche, L. Amriou, D. Poenaru, M. Vallières, *Predictive performance rprecision analysis in medicine : Identification of low-confidence predictions at patients and profile levels (MED3pa I)*, *J. Amer. Med. Info. Assoc.* **33**(6), 1100-1111 (2026). doi.org/10.1093/jamia/ocag034
4. O. Rios Ibacache†, J. Manalad, K. O'Sullivan-Stebent†, E. Poon, L. Galarneau, J. Khriguian, G. Shenouda, J. Kildea, *Quantification of head and neck cancer patients' anatomical changes during radiotherapy: Toward the prediction of replanning need*, *J. Appl. Clin. Med. Phys.* **27**(1), e70465 (2026).
5. L.E. Court, J. Smit, L. Strauss, W. Shaw, A. Marais, C. Trauernicht, et al, J. Seuntjens,... L. Zhang, *Leveraging large language models for heuristic usability assessment of medical software: Insights with the Radiation Planning Assistant*, *J. Appl. Clin. Med. Phys.* **27**(2), e70495 (2026).
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8. S. Fernandez-Lozano, D.L. Collins, *Hippocampal-to-Ventricle Ratio as a Head-Size-Independent Biomarker: Sex Differences and Cognitive Associations in 27,680 UK Biobank Participants*, *BioRxiv*, preprint. doi: <https://doi.org/10.64898/2026.04.13.718285>.
9. S.A. Hosseini, E. Aumont, N. Rahmouni, M.S. Woo, A.C. Macedo, B. Hall, et al, D.A. Rudko, D.L. Collins, et al, *Ventricular enlargement is associated with early Alzheimer's disease pathophysiology*, *Brain Commun.* **8**(2), fcag066 (2026).
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11. S.A. Hosseini, S. Servaes, A.C. Macedo, E. Aumont, N. Rahmouni, et al, D.L. Collins, Y. Wang, D.A. Rudko, P. Rosa-Neto, *Quantitative susceptibility mapping of the brain is associated with inflammatory changes in Alzheimer's disease related areas*, *J. Cereb. Blood Flow Metab.* 0271678X261417193, (2026).
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20. D. Hamitouche, Y. Ding, R. Rajabli, A.M. Garcia, S. Thebault, S. Zhou, I. Zimianiti, B.M. Jacobs, J. Falet, D.L. Collins, A. Abdelhak, A. Harroud, *Multimodal Aging Signatures Identify Prediagnostic Brain Aging and Proteomic Biomarkers in MS*, Mult. Scler. **32**(2), 3-3 (2026).
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25. R. Thevakumaran, S. Blinder, M. Couch, A. Kostikov, R. Amaoutelis, S. Narayanan, P. Rosa-Neto, D.L. Arnold, D.A. Rudko, *Subcortical microglial inflammation is uniquely linked to subpial cortical demyelination in multiple sclerosis*, J. Neuroimaging: Clinical, 103962 (2026).
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(additional 2026 entries pending)