

PEST-PD: The Path to Early Parkinson’s Detection
Preliminary Findings from an Ongoing Longitudinal Observational
Study for Prodromal Parkinson’s disease in farmers exposed to pesticides



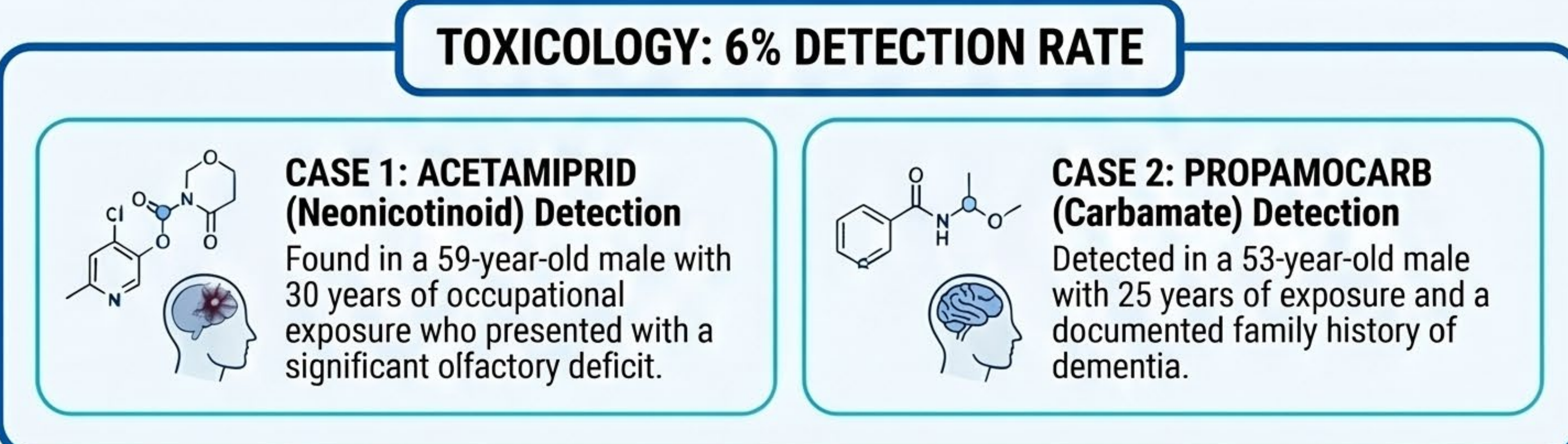
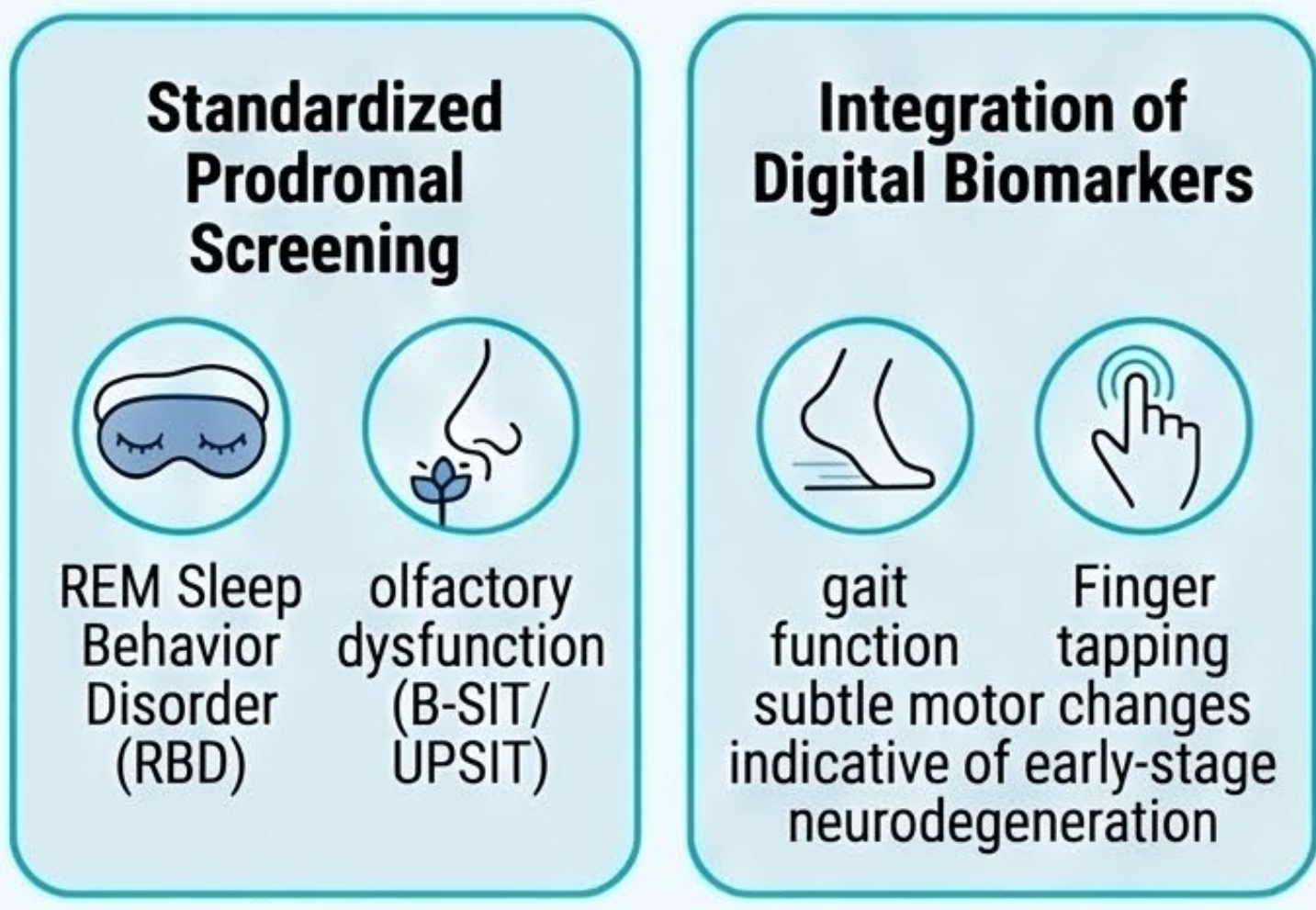
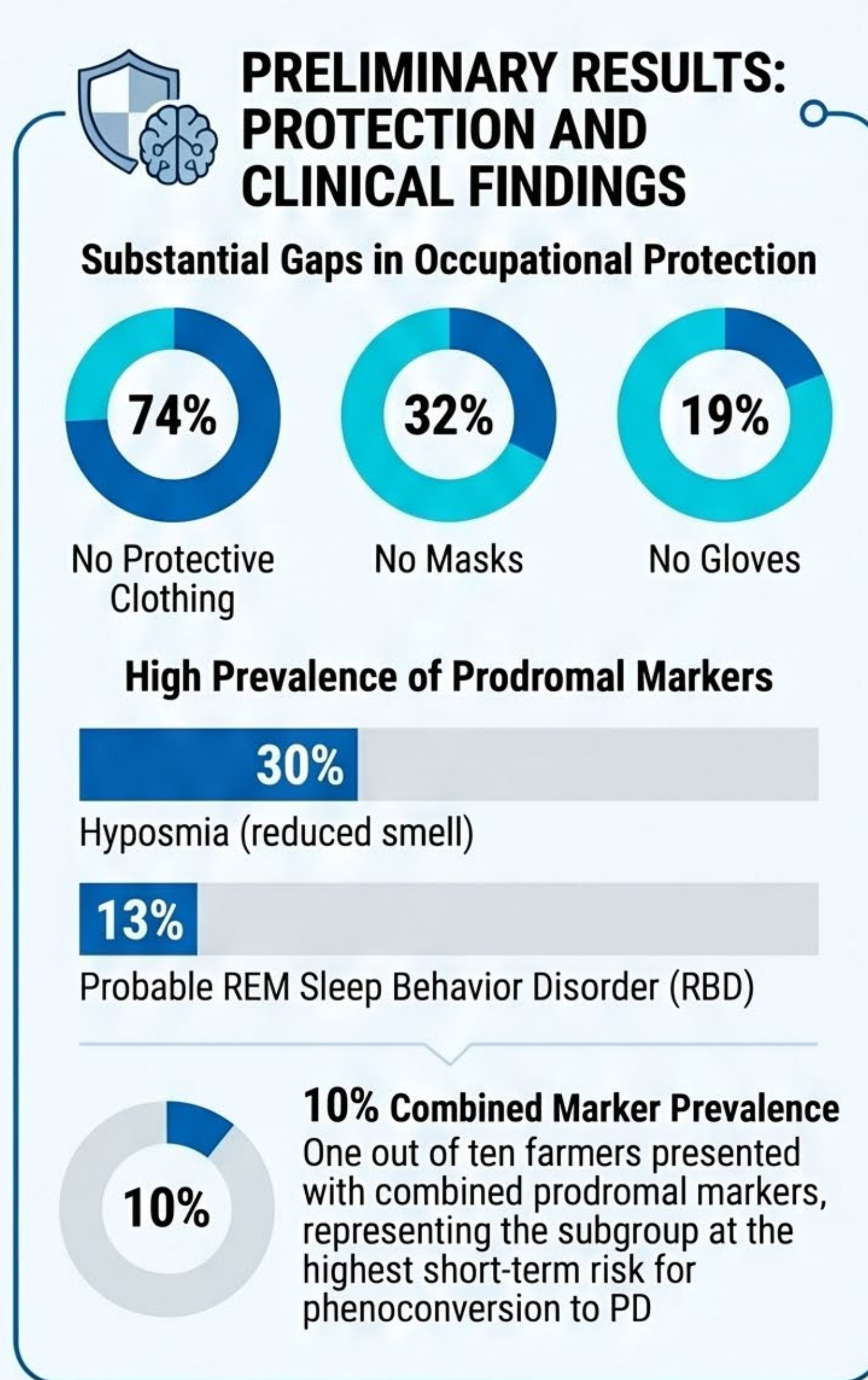
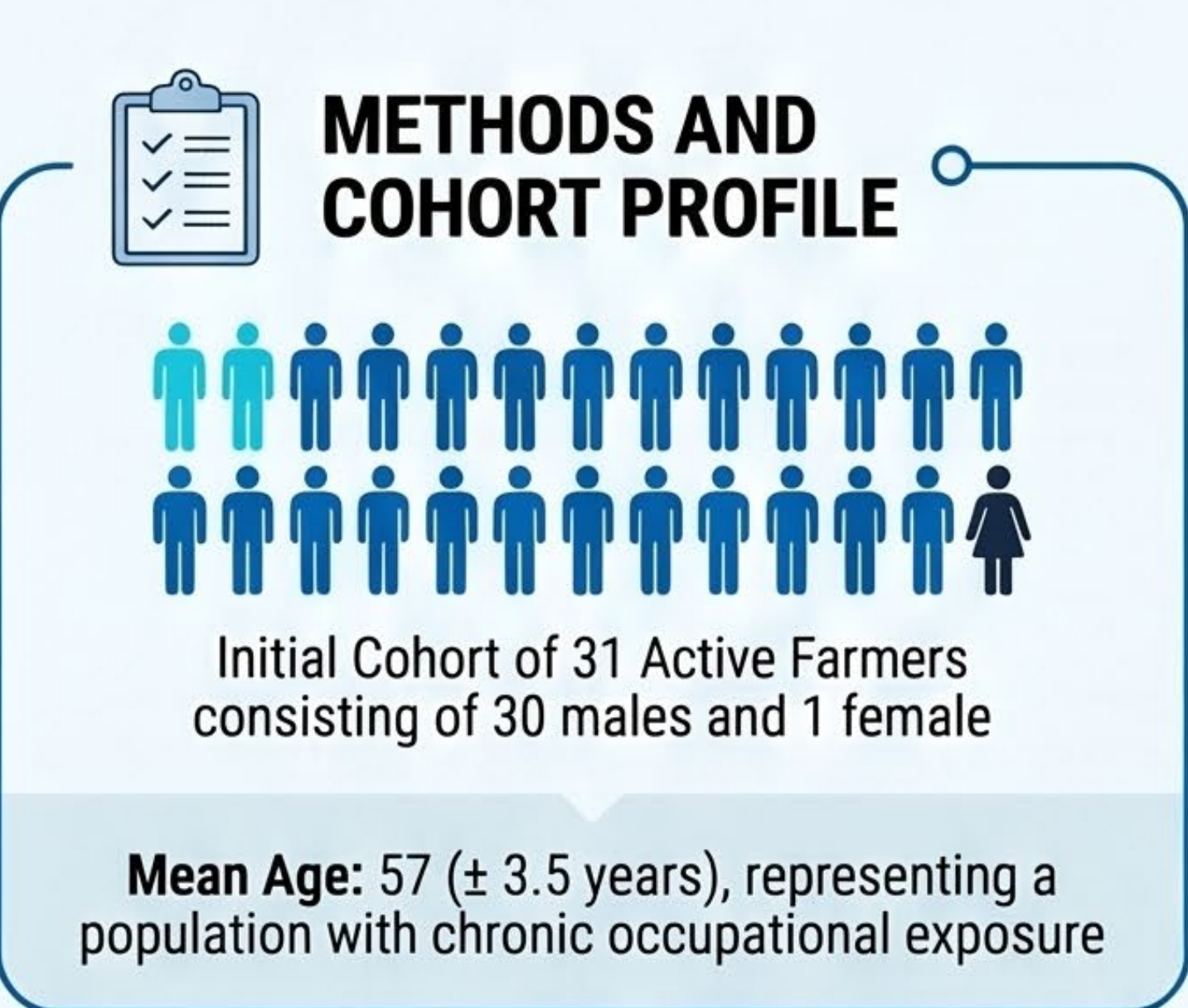
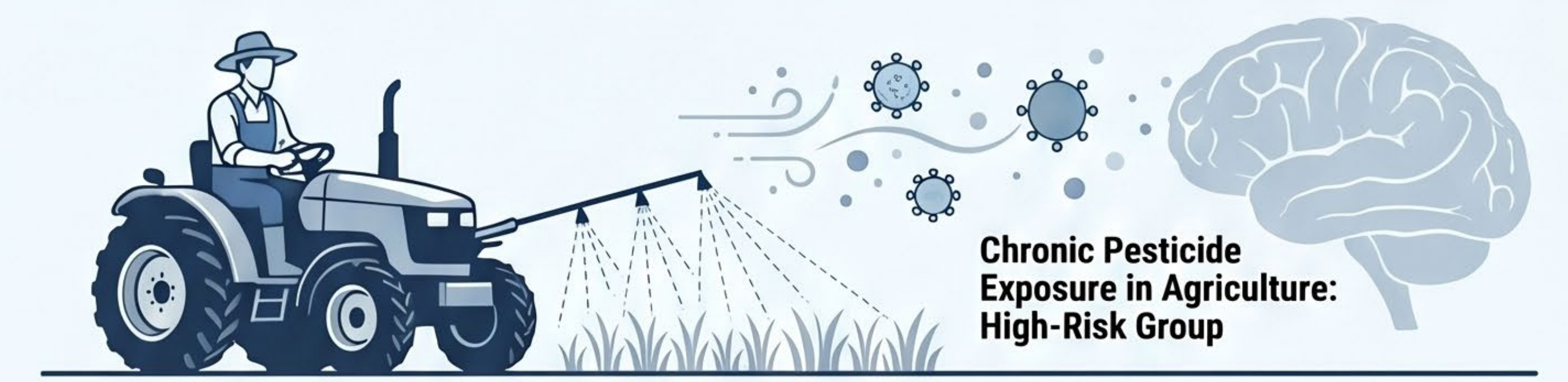
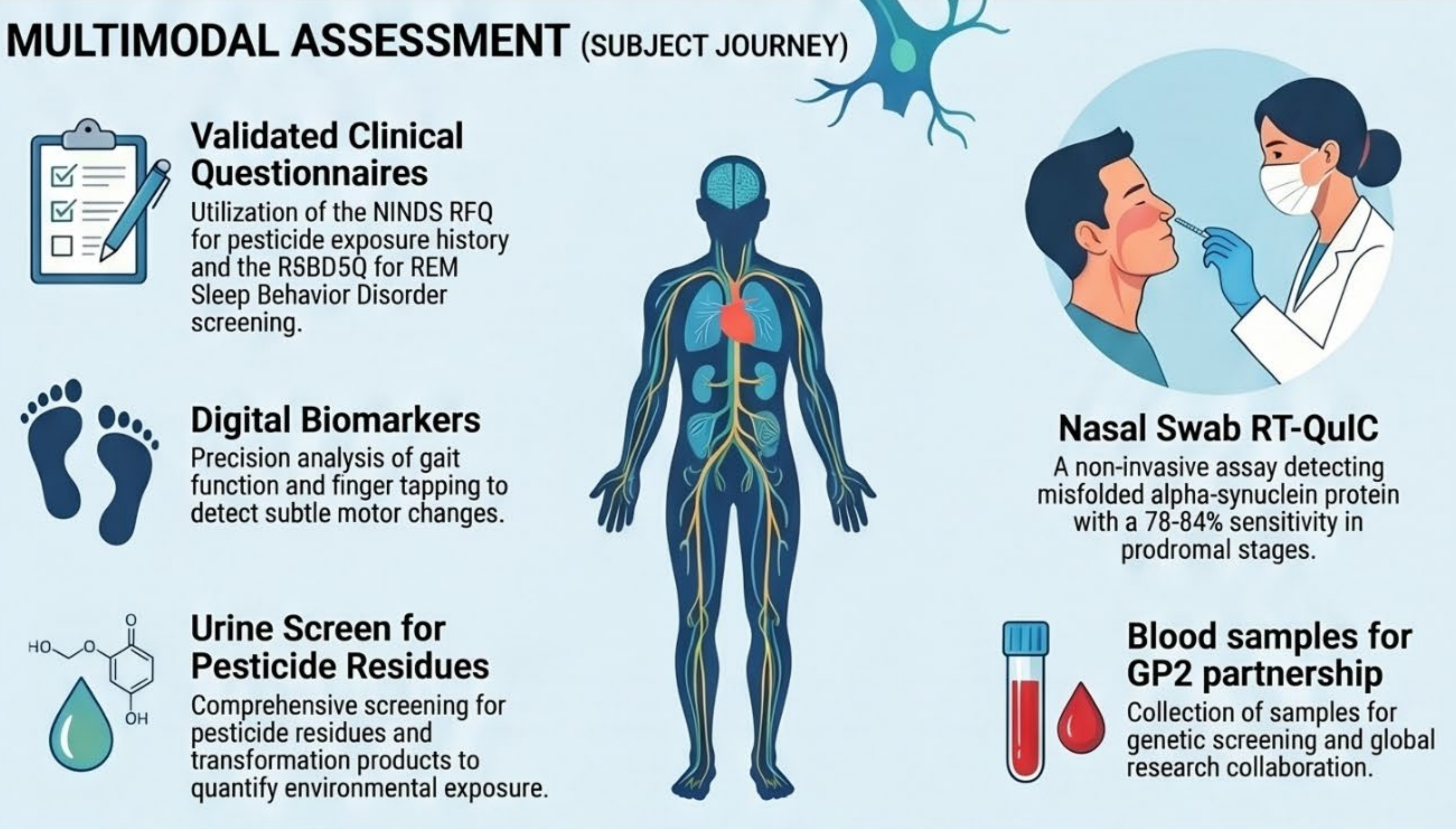
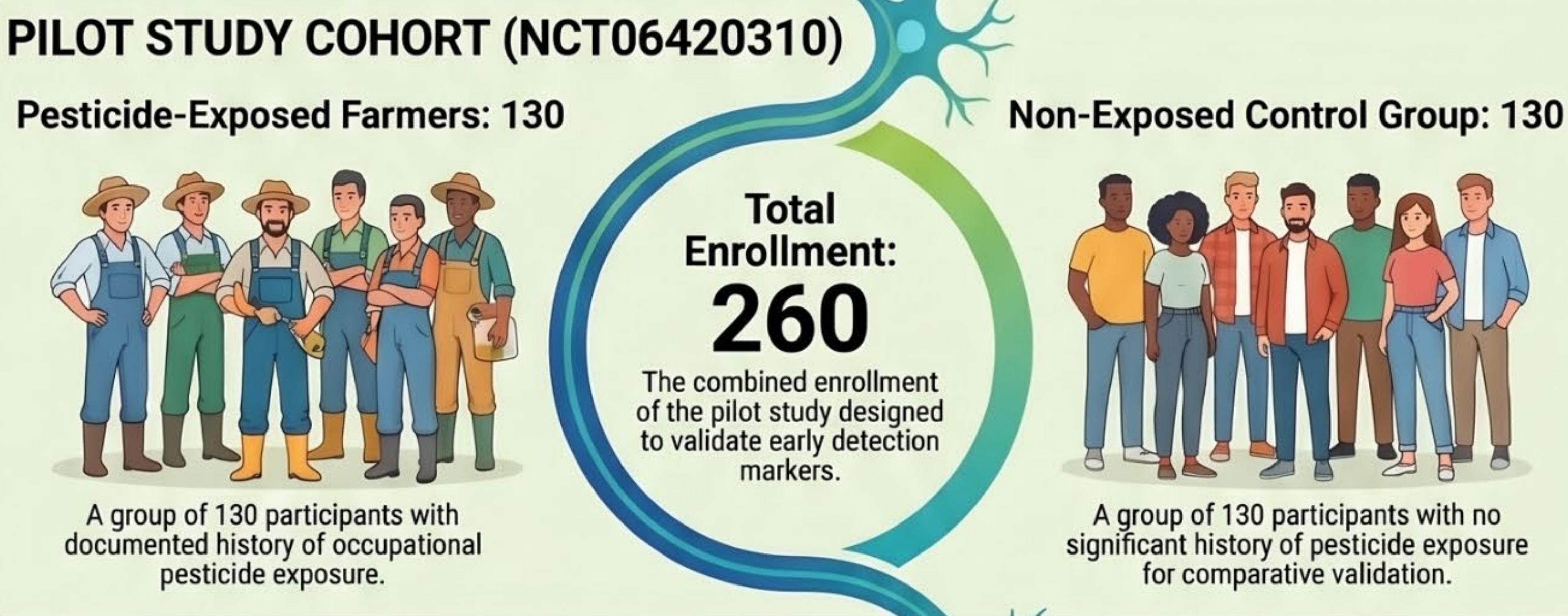
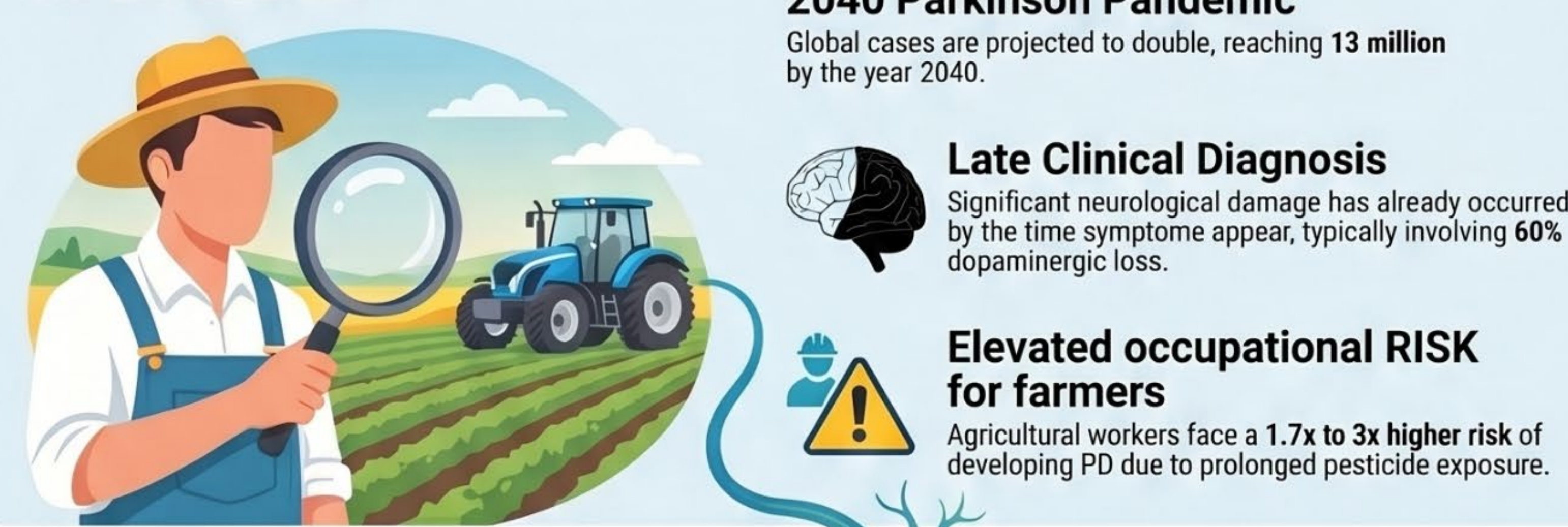
Laura Gómez-Cuadrado^a, David García-García^b, Antonio Canepa-Oneto^b, Daniel de Lara^b, Belén Alonso Núñez^c, Sofía López Marín^a, Dalia de la Fuente^a, María Isabel Villanueva^d, Rocío Barros^a, Santiago Aparicio^a, Juan José Rodríguez^b, Carlos López^b, José Miguel Ramírez^b, Irene Gómez-Gregoris^e, Beatriz Catón^e, Jorge Díaz Hurtado^e, Sara Calvo^e, Javier Trigo^e, Javier Sánchez^e, Darío Lisei^e, M^a Ángeles Olalla Gallo^f, Marta Allende del Río^f, Jéssica Jannett Rivadeneyra Posadas^e, Bacinoglu Merve Begum^g, Fabio Moda^g, Esther Cubo^{*b,h}

a International Research Center in Critical Raw Materials for Advanced Industrial Technologies-ICCRAM, University of Burgos, Spain.
b Department of Computer Engineering, University of Burgos, Spain.
c Department of Chemistry, Soil Science and Agricultural Chemistry Area, University of Burgos, Spain.
d Departamento de Enfermería, Facultad Ciencias de la Salud, University of Burgos, Spain.
e Complejo Asistencial Universitario de Burgos, Spain.
f Gerencia de Atención Primaria de Burgos, SACYL, Spain.
g SSD Medicina di laboratorio - Laboratorio di patologia clinica - Laboratorio di biochimica specialistica delle proteinopatie neurologiche, Fondazione IRCCS Istituto Neurologico Carlo Besta, Italy.
h Neurology Department, Complejo Asistencial Universitario de Burgos, Spain.
E-mail contact: mcubo@saludcastillayleon.es and lguadrado@ubu.es



PEST-PD is a multi-center project that brings together a multidisciplinary research team composed of neurologists, primary care physicians, physicians specialized in Clinical Analysis and Nuclear Medicine, radiophysicists, biotechnologists, biologists, biostatisticians, agricultural-, telecommunications- and health- engineers, with the aim to understand different aspects of the prevalence of preclinical and prodromal PD in subjects exposed and not exposed to pesticides.

THE CHALLENGE



These graphs have been generated using Notebook LM

The Lancet Neurology (2022), Antony, P. M., (2013), Maartje Brouwer, (2017), Leslie Amaral, (2025), Anumitha Aravindan, (2024), Heinzel, S., 2019), Brouwer, M., (2017), Simuni, T., (2024), Horsager, J., & Borghammer, P. (2024), Oliver, P. J., Civitelli, L., & Hu, M. T. (2025), Dorsey, E. R., (2024), Giambò, F., (2021), Huang, M., (2022), Osmani H., (2024), Kulesarova, K., (2023), Bloem, B.R., (2024), Rafael Arsuffi-Marcon, (2024), Luisa Gensch, (2024), Porta, G.M., Casse, L., Manzoni, A. et al. (2025), Galimberti, F., Bopp, S.K., Carletti, A. et al. (2025), Rigal, S., Perrot, T. (2025), Udias, A., (2023), Priyadarshi, A., (2000), Brown, E. G., (2024), NINDS RFQ, Koch, S.(2021), Paul, K. C., & Ritz, B. (2022), Aloizou, A. (2020), Ali, M., (2025), Ali, M., Erabadda, B., Chen, Y. et al. (2025), Belluomo, I., (2025), Krzyzanowski B, (2024), Bundy, J.L., (2022).