

Sara Reina Gutiérrez

FENNSI group

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I studied the Degree in Physiotherapy at the University of Castilla-La Mancha during 2014-2018. At the end of the degree, after a period of clinical activity, in February 2019 I started my research experience at the University of Castilla-La Mancha. I completed the Master's Degree in Social and Health Research, and obtained a “Predoctoral Research Staff in Training” contract to develop my doctoral thesis.

I finished my PhD entitled “Effect of physical exercise in people with multiple sclerosis” in the PhD programme in Social and Health Research and Physical Activity of the University of Castilla-La Mancha in June 2023.

Now, I have more than 30 published articles, most of them dealing with the effect of physical exercise/rehabilitation on different diseases, mainly neurological and respiratory. During my research period, I have carried out two research stays: at the Institut de Recherche Expérimentale et Clinique (Université Catholique de Louvain, Belgium); and at the Respiratory Research and Rehabilitation Laboratory - Lab3R (Universidade de Aveiro, Portugal).

In February 2025 I started working in the Functional Exploration and Neuromodulation of the CNS (FENNSI) group at the Hospital Nacional de Paraplégicos, thanks to a postdoctoral research contract ‘Sara Borrell’ funded by the Instituto de Salud Carlos III and co-financed by the European Social Fund Plus (ESF+). The aim of the project that I am developing is to perform a comprehensive assessment of people with spinal cord injury, to better understand the relationship between their symptoms and to be able to improve intervention and rehabilitation strategies for these people.

Selected articles:

1. Torres-Costoso A, Garrido-Miguel M, Gracia-Marco L, López-Muñoz P, **Reina-Gutiérrez S**, Núñez de Arenas-Arroyo S, Martínez-Vizcaíno V. The "Fat but Fit" Paradigm and Bone Health in Young Adults: A Cluster Analysis. *Nutrients*. 2021 Feb 5;13(2):518. doi: 10.3390/nu13020518.
2. **Reina-Gutiérrez S**, Martínez-Vizcaíno V, Torres-Costoso A, Núñez de Arenas-Arroyo S, Saz-Lara A, Sánchez-López M. Maternal Education and Academic Achievement in Schoolchildren: The Role of Cardiorespiratory Fitness. *J Pediatr*. 2021 May;232:109-117.e1. doi: 10.1016/j.jpeds.2021.01.047.
3. Torres-Costoso A, Martínez-Vizcaíno V, **Reina-Gutiérrez S**, Álvarez-Bueno C, Guzmán-Pavón MJ, Pozuelo-Carrascosa DP, Fernández-Rodríguez R, Sanchez-López M, Cavero-

- Redondo I. Effect of Exercise on Fatigue in Multiple Sclerosis: A Network Meta-analysis Comparing Different Types of Exercise. *Arch Phys Med Rehabil.* 2022 May;103(5):970-987.e18. doi: 10.1016/j.apmr.2021.08.008.
4. **Reina-Gutiérrez S**, Cavero-Redondo I, Martínez-Vizcaíno V, Núñez de Arenas-Arroyo S, López-Muñoz P, Álvarez-Bueno C, Guzmán-Pavón MJ, Torres-Costoso A. The type of exercise most beneficial for quality of life in people with multiple sclerosis: A network meta-analysis. *Ann Phys Rehabil Med.* 2022 May;65(3):101578. doi: 10.1016/j.rehab.2021.101578.
 5. Pascual-Morena C, Cavero-Redondo I, **Reina-Gutiérrez S**, Saz-Lara A, López-Gil JF, Martínez-Vizcaíno V. Prevalence of Neuropsychiatric Disorders in Duchenne and Becker Muscular Dystrophies: A Systematic Review and Meta-analysis. *Arch Phys Med Rehabil.* 2022 Dec;103(12):2444-2453. doi: 10.1016/j.apmr.2022.05.015.
 6. Martínez-Vizcaíno V, Cavero-Redondo I, **Reina-Gutiérrez S**, Gracia-Marco L, Gil-Cosano JJ, Bizzozero-Peroni B, Rodríguez-Artalejo F, Ubago-Guisado E. Comparative effects of different types of exercise on health-related quality of life during and after active cancer treatment: A systematic review and network meta-analysis. *J Sport Health Sci.* 2023 Nov;12(6):726-738. doi: 10.1016/j.jshs.2023.01.002.
 7. **Reina-Gutiérrez S**, Caty G, Torres-Costoso A, Pitance L, Manicourt DH, Reyckler G. Assessment of functional respiratory complaints and related factors in people with hypermobile Ehlers-Danlos syndrome: Cross-sectional study. *Respir Med Res.* 2023 Jun;83:101017. doi: 10.1016/j.resmer.2023.101017.
 8. **Reina-Gutiérrez S**, Meseguer-Henarejos AB, Torres-Costoso A, Álvarez-Bueno C, Cavero-Redondo I, Núñez de Arenas-Arroyo S, Guzmán-Pavón MJ, Sánchez-López M, Martínez-Vizcaíno V. Effect of different types of exercise on fitness in people with multiple sclerosis: A network meta-analysis. *Scand J Med Sci Sports.* 2023 Oct;33(10):1916-1928. doi: 10.1111/sms.14407.
 9. Núñez de Arenas-Arroyo S, Martínez-Vizcaíno V, Torres-Costoso A, **Reina-Gutiérrez S**, Bizzozero-Peroni B, Cavero-Redondo I. Immediate and short-term effects of neurodynamic techniques on hamstring flexibility: A systematic review with meta-analysis. *PLoS One.* 2025 Feb 6;20(2):e0318671. doi: 10.1371/journal.pone.0318671.
 10. Lirio-Romero C, **Reina-Gutiérrez S**, López-Muñoz P, Bravo-Esteban E, Torres-Costoso A, Guzmán-Pavón MJ. Technology-Based Physical Rehabilitation for Balance in Patients With Multiple Sclerosis: A Systematic Review and Meta-analysis. *Arch Phys Med Rehabil.* 2025 Mar 4:S0003-9993(25)00540-4. doi: 10.1016/j.apmr.2025.02.011.