

# Evidence-based improvement of gait in post-stroke patients following robot-assisted training: A systematic review

**Issue title:** Thematic Issue: Integrating Robot-assisted Therapy Into Neurorehabilitation Clinical Practice: Where Are We Now? Where Are We Heading?

**Guest editors:** Giovanni Morone, Robert Riener and Stefano Mazzoleni

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**Authors:** [Mazzucchelli, Miryam](https://content.iospress.com:443/search?q=author%3A%28%22Mazzucchelli,Miryam%22%29) (https://content.iospress.com:443/search?q=author%3A%28%22Mazzucchelli,Miryam%22%29)<sup>a</sup>; [Mazzoleni, Daniele](https://content.iospress.com:443/search?q=author%3A%28%22Mazzoleni,Daniele%22%29) (https://content.iospress.com:443/search?q=author%3A%28%22Mazzoleni,Daniele%22%29)<sup>a</sup> | [Campanini, Isabella](https://content.iospress.com:443/search?q=author%3A%28%22Campanini,Isabella%22%29) (https://content.iospress.com:443/search?q=author%3A%28%22Campanini,Isabella%22%29)<sup>b</sup> | [Merlo, Andrea](https://content.iospress.com:443/search?q=author%3A%28%22Merlo,Andrea%22%29) (https://content.iospress.com:443/search?q=author%3A%28%22Merlo,Andrea%22%29)<sup>b</sup>; [Mazzoli, Davide](https://content.iospress.com:443/search?q=author%3A%28%22Mazzoli,Davide%22%29) (https://content.iospress.com:443/search?q=author%3A%28%22Mazzoli,Davide%22%29)<sup>c</sup> | 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**Affiliations:** [a] School of Medicine and Surgery, University of Milano-Bicocca, Milan, Italy | [b] Department of

Neuromotor and Rehabilitation, LAM-Motion Analysis Laboratory, San Sebastiano Hospital, AUSL-IRCCS di Reggio Emilia, Reggio Emilia, Italy | [c] Gait and Motion Analysis Laboratory, Sol et Salus Ospedale Privato Accreditato, Rimini, Italy | [d] Elias Neuroriabilitazione, Parma, Italy | [e] Montecatone Rehabilitation Institute, Imola, Italy | [f] Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Rome, Italy | [g] School of Physical and Occupational Therapy, McGill University, Montreal, Canada | [h] San Donato Group, Istituti Clinici Zucchi, Monza, Italy | [i] Department of Experimental and Clinical Medicine, Università Politecnica delle Marche, Ancona, Italy | [j] Department of Rehabilitation Medicine, Spinal Cord Unit, Gervasutta Hospital, Azienda Sanitaria Universitaria Friuli Centrale (ASU FC), Udine, Italy | [k] IRCCS Centro Neurolesi “Bonino Pulejo”, Messina, Italy | [l] Centro Terapeutico Riabilitativo (CTR), Potenza, Italy | [m] Spinal Cord Unit and Intensive Rehabilitation Medicine, Ospedale di Fiorenzuola d’Arda, AUSL Piacenza, Piacenza, Italy | [n] Department of Translational Research and New Technologies in Medicine and Surgery, Neurorehabilitation Section, University of Pisa, Pisa, Italy | [o] Neurophysiopathology Unit, Istituti Clinici Scientifici Maugeri, IRCCS Montescano, Pavia, Italy | [p] Centro Protesi Vigorso di Budrio, Istituto Nazionale Assicurazione Infortuni sul Lavoro (INAIL), Bologna, Italy | [q] Spinal Cord Unit, Pisa University Hospital, Pisa, Italy | [r] Italian Society of Physical Medicine and Rehabilitation (SIMFER), Rome, Italy | [s] Department of Electrical and Information Engineering, Politecnico di Bari, Bari, Italy | [t] Department of Rehabilitation, Versilia Hospital - AUSL12, Viareggio, Italy | [u] Pontifical Gregorian University, Rome, Italy | [v] Department of Paediatric Neurorehabilitation, IRCCS Bambino Gesù Children’s Hospital, Rome, Italy | [w] Department of Occupational and Environmental Medicine, Epidemiology and Hygiene, INAIL, Rome, Italy | [x] Italian Federation of Persons with Spinal Cord Injuries (FAIP Onlus), Rome, Italy | [y] IRCCS Fondazione Don Carlo Gnocchi, Milan, Italy | [z] Department of Mental, Physical Health and Preventive Medicine, University of Campania “Luigi Vanvitelli”, Naples, Italy | [aa] National Center for Innovative Technologies in Public Health, Italian National Institute of Health, Rome, Italy | [bb] Rehabilitation Unit, ULSS (Local Health Authority) Euganea, Camposampiero Hospital, Padua, Italy | [cc] Department of Rehabilitation Medicine, Villa Beretta Rehabilitation Center, Valduce Hospital, Lecco, Italy | [dd] IRCCS Santa Lucia Foundation, Rome, Italy | [ee] Movement Analysis and Robotics Laboratory (MARlab), IRCCS Bambino Gesù Children’s Hospital, Rome, Italy | [ff] Department of Neurosciences, Biomedicine and Movement Sciences, University of Verona, Verona, Italy | [gg] Associazione Italiana dei Terapisti Occupazionali (AITO), Rome, Italy | [hh] Institute of Management, Scuola Superiore Sant’Anna, Pisa, Italy | [ii] Piero Redaelli Geriatric Institute, Milan, Italy

**Correspondence:** [\*] Address for correspondence: Miryam Mazzucchelli, E-mail:

[m.mazzucchelli@campus.unimib.it](mailto:m.mazzucchelli@campus.unimib.it) (<mailto:m.mazzucchelli@campus.unimib.it>).

**Abstract:** BACKGROUND: The recovery of walking after stroke is a priority goal for recovering autonomy. In the last years robotic systems employed for Robotic Assisted Gait Training (RAGT) were developed. However, literature and clinical practice did not offer standardized RAGT protocol or pattern of evaluation scales. OBJECTIVE: This systematic review aimed to summarize the available evidence on the use of RAGT in post-stroke, following the CICERONE Consensus indications. METHODS: The literature search was conducted on PubMed, Cochrane Library and PEDro, including studies with the following criteria: 1) adult post-stroke survivors with gait disability in acute/subacute/chronic phase; 2) RAGT as intervention; 3) any comparators; 4) outcome regarding impairment, activity, and participation; 5) both primary studies and reviews. RESULTS: Sixty-one articles were selected. Data about characteristics of patients, level of disability, robotic devices used, RAGT protocols, outcome measures, and level of evidence were extracted. CONCLUSION: It is possible to identify robotic devices that are more suitable for specific phase disease and level of disability, but we identified significant variability in dose and protocols. RAGT as an add-on treatment seemed to be prevalent. Further studies are needed to investigate the outcomes achieved as a function of RAGT doses delivered.

**Keywords:** Stroke, gait, rehabilitation, robotics, lower extremity

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