Antonio Nardone

Curriculum vitae

PERSONAL DATA

Born in Milan, Italy, on March 6, 1959.

BIO AND EDUCATION

1978: Classical education, Milan

1985: Medical Degree, University Medical School, Milan

1989: Ph.D. in Neurological Sciences, University Medical School, Milan

1992: Specialty in Physical Medicine and Rehabilitation, University Medical School, Pavia

1989-1995: Medical Assistant, Division of Physical Medicine and Rehabilitation, Fondazione Salvatore Maugeri (IRCCS), Veruno

1995-2000: Head of the Posture and Movement Laboratory

2000-2009: Head and Coordinator of the activity of the laboratories of the Division

2003-: Member of the Internal Review Board

2009-: Chief of the Division of Physical Medicine and Rehabilitation

2015-: Head of the Department of Neurologic and Orthopedic Rehabilitation, Fondazione Salvatore Maugeri

In the past, responsible of two Ricerca Finalizzata grants (Italian Ministry of Health) and a Telethon grant, responsible of operating unit in Ricerca Finalizzata grants and PRIN grant (Italian Ministry of University). Referee for international journals and funding agencies.

UNIVERSITY CAREER

2012-	Associate Professor, Università del Piemonte Orientale
2008-2012	Researcher, Università del Piemonte Orientale
2002-2008	Lecturer, Università del Piemonte Orientale
1997-2004	Lecturer, Università di Genova

SCIENTIFIC POSITIONS

2014-	Member of the Editorial Board of Restorative Neurology and Neuroscience
2013-	Coordinator of the Special Section for the Rehabilitation of Polyneuropathies and Neuromuscular Diseases of the Società Italiana di Riabilitazione Neurologica (SIRN)
2011-	Member of the Editorial Board of Human Movement Science
2009-	Adviser of the School of Permanent Education of the SIRN
2004-2010	Member of the Editorial Board of the European Journal of Physical and Rehabilitation Medicine
1999-2003	Member of the Steering Committee of the Società Italiana di Analisi del Movimento in Clinica (SIAMOC)
1996-	Member of the Editorial Board of Gait & Posture

MAIN FIELDS OF INTEREST

1. Posture
2. Balance
3. Gait
4. Neurological diseases
5. Rehabilitation

CURRENT ISSUES OF RESEARCH

1. **Locomotion along curvilinear trajectories: basic physiological mechanisms, validation of evaluation protocols in patients with central nervous system diseases and rationale for rehabilitation**

Balance control in the frontal plane is studied during locomotion along curved trajectories since impairments in this task are related to fall risk. Healthy subjects, patients with Parkinson's disease, peripheral neuropathy, or stroke are recruited. Wearable sensors (inertial and electromiographic sensors, plantar pressure insoles) are used.

2. **Adaptation to predictable postural perturbations in Parkinson's disease. Physiological basis for an innovative approach to training of dynamic balance**

Adaptation to predictable perturbations of upright stance is impaired in patients with Parkinson's disease. This abnormality might depend on changes in the anticipatory postural adjustments. Body kinematics and electromyographic activity of leg muscles are recorded during postural perturbations induced by a movable platform. Balance control is trained using the platform itself.

3. **Stepping on a continuously rotating platform: podokinetic after-rotation and long-term adaptation in patients with Parkinson's disease**

Stepping in place on a rotating platform induces the "podokinetic after-rotation": it consists in an involuntary rotation, during stepping in place with eyes closed, toward the opposite direction of previous rotation of the platform. Patients with Parkinson's disease show more severe difficulties when walking along curved than linear trajectories. It is hypothesized that sessions of stepping on the rotating platform may specifically improve overground gait along curved trajectories.

4. **Abnormalities of balance and gait in patients with chronic obstructive pulmonary disease**

Patients with COPD show difficulties in balance control and gait. Aim is to assess if these changes are correlated with lung function. Performance of patients without and with oxygen supplementation is compared. Any worsening of balance and gait during a simultaneous cognitive task may suggest an involvement of the central nervous system in addition to lung function in producing the observed impairments.

TOP FIVE PAPERS

1. Nardone A, Romanò C, Schieppati M. Selective recruitment of high threshold human motor units during voluntary isotonic lengthening of active muscles in humans. J Physiol (London) 1989;409:451-71
2. Schieppati M, Nardone A. Medium-latency stretch reflexes of foot and leg muscles analysed by cooling the lower limb in standing humans. J Physiol (London) 1997;503:693-700
3. Nardone A, Tarantola J, Miscio G, Pisano F, Schenone A, Schieppati M. Loss of large-diameter spindle afferent fibres is not detrimental to the control of body sway during upright stance: evidence from neuropathy. Exp Brain Res 2000;135:155-62
4. Nardone A, Schieppati M. Inhibitory effect of the Jendrassik maneuver on the stretch reflex. Neuroscience 2008;156:607-17
5. Arcolin I, Pisano F, Delconte C, Godi M, Schieppati M, Mezzani A, Picco D, Grasso M, Nardone A. Intensive cycle ergometer training improves gait speed and endurance in patients with Parkinson's disease: A comparison with treadmill training. Restor Neurol Neurosci 2016;34:125-38

AWARDS

1. Winner of the SIMFER 2004 award
2. Winner of the Elsevier-SIAMOC 2004 clinical award
3. Winner of the Delsys Recognition for Best Presentation in Electromyography 2007

FURTHER INFORMATION

1990: co-chairman of the Hoffmann Club held at the Scientific Institute of Veruno

2009: co-chairman of the XIX Congress of the International Society for Posture and Gait Research held in Bologna (21-25/6/2009)