

# Cooperation Profile – Prof. Maria Gabriella Ceravolo’s Neurorehabilitation Team

## Team Overview

Professor **Maria Gabriella Ceravolo** is Full Professor of Physical and Rehabilitation Medicine at the **Department of Experimental and Clinical Medicine (DIMSC)**, Università Politecnica delle Marche (UNIVPM), Italy. She is Head and Coordinator of the **Neurorehabilitation Clinic** at the University Hospital “Ospedali Riuniti” of Ancona, a regional referral centre for neurological and neurodegenerative conditions.

The team operates at the interface between **clinical neurorehabilitation, digital health and translational research**, integrating medical, engineering and data-driven expertise. It is actively seeking **academic and clinical partners** for collaborative research within **Horizon Europe, Erasmus+, and international programmes**.

## Research Focus

- **Neurorehabilitation after acute brain injury** (stroke, traumatic brain injury)
- **Parkinson’s disease and movement disorders**: motor and non-motor disability, functional decline, falls, dyskinesia
- **Digital and personalized rehabilitation** strategies
- **Tele-rehabilitation and tele-monitoring** for neurological and non-neurological conditions
- **Wearable sensors and instrumental assessment** of gait, posture and motor function
- **Robot-assisted rehabilitation** and action-observation therapy
- **Virtual reality (immersive and semi-immersive)** for upper-limb and cognitive rehabilitation
- **Companion robots** to support intensive rehabilitation after stroke
- **Rehabilitation outcomes and prognostic modeling** (motor and cognitive recovery)
- **Rehabilitation in complex conditions** (COVID-19 sequelae, breast cancer, post-surgical patients)

## Technology Keywords

Tele-monitoring; wearable sensors; tele-rehabilitation; robot-aided rehabilitation; companion robots; immersive and semi-immersive virtual reality; mirror therapy; action observation; computerized movement analysis; AI-supported patient stratification .

## International Collaborations

- **European academic partners** including University of Verona, Aristotle University of Thessaloniki, Erasmus University of Rotterdam, Radboud University of Nijmegen, University of Milan, Linköping University (Sweden)
- **Leadership roles in international scientific bodies**, including:
  - Chair of the Education Committee of the **International Society of Physical and Rehabilitation Medicine (ISPRM)**
  - Head of the Special Interest Scientific Committee on Rehabilitation in Parkinson’s Disease (European PRM Society)
  - National Manager (Italy) for the **UEMS PRM Board**
- Long-standing collaboration with **engineering departments** for co-creation and validation of digital rehabilitation platforms

## Notable Projects

- **PREPARE** – *Personalised Rehabilitation via Novel AI Patient Stratification Strategies* (Horizon Europe, HORIZON-HLTH-2022-TOOL-12-01)
- **CAREGIVERSPRO-MMD** (Horizon 2020) – ICT-supported empowerment for caregivers
- **MAGIC** (Horizon 2020 PCP) – Self-management of health and disease supported by ICT
- **I-TRAIN** (Erasmus+) – Mobile digital training for stroke caregivers
- **RAPIDO** – Tele-rehabilitation for people with Parkinson's disease
- **RICOMINCIARE** – Home-based rehabilitation and monitoring of post-COVID patients

## Clinical and Research Infrastructure

- University **Neurorehabilitation Clinic** with inpatient and outpatient services
- Dedicated **computerized movement analysis laboratory**
- Multidisciplinary staff including PRM physicians, physiotherapists, speech therapists, occupational therapists, neuropsychologists and residents
- Extensive experience in **multicentre international clinical trials** and large-scale observational studies
- Approx. **1,000 neurological patients/year** assessed and treated

## Contact Details

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