PROMISE@LAB

UNIVERSITÀ DEGLI STUDI FIRENZE | Dipartimento di Medicina Sperimentale e Clinica

Fondazione Don Carlo Gnocchi

Scientific Director:
prof. FRANCESCA CECCHI, AP, MD

# University of Florence - Department of Experimental and Clinical Medicine (DMSC)

UNIVERSITÀ DEGLI STUDI FIRENZE

DIPARTIMENTO DI MEDICINA SPERIMENTALE E CLINICA

Multidisciplinary Research and Innovation at DMSC

· Joint research environment; multiple scientific disciplines

· Focus on high-quality clinical and experimental research

· Strong commitment to scientific and technological innovation

· Advanced academic and professional training for students
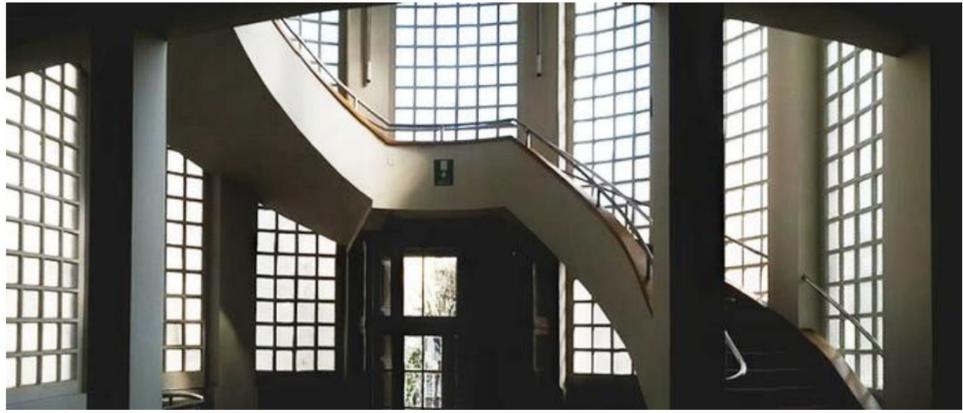
UniFI Departments affiliated to PROMISE@LAB

**Health sciences
(DSS)**

UNIVERSITÀ DEGLI STUDI FIRENZE
DSS
DIPARTIMENTO DI SCIENZE DELLA SALUTE

**Neurosciences-Pharmacological-Pediatric
(NEUROFARBA)**

UNIVERSITÀ DEGLI STUDI FIRENZE
NEUROFARBA
DIPARTIMENTO DI NEUROSCIENZE, PSICOLOGIA, AREA DEL FARMACO E SALUTE DEL BAMBINO

**Industrial Engineering
(DIEF)**

UNIVERSITÀ DEGLI STUDI FIRENZE
DIEF
DIPARTIMENTO DI INGEGNERIA INDUSTRIALE

IRCCS Fondazione don Carlo Gnocchi, Florence

Fondazione Don **Carlo Gnocchi**

National Excellence in Rehabilitation

· 3ʳᵈ sector Care and Rehab Institution: 27 Centres across Italy

· Scientific Institute for Care and Research (IRCCS - Milan and Florence)

· Complex Neuromotor Rehab University-directed Structure UniFI-FDG IRCCS Florence: capacity: 100 beds + 100 outpatients/day

· Strong clinical environment supporting translational research

LOMBARDIA
Milano - Centro IRCCS S. Maria Nascente
Milano - Centro Vismara-Don Gnocchi
Milano - Istituto Palazzolo-Don Gnocchi
Milano - Centro Girola - Don Gnocchi
Legnano (MI) - Centro Multiservizi
Pessano con Bornago (MI) - Centro S. Maria al Castello
Seregno (MB) - Centro Ronzoni Villa-Don Gnocchi
Rovato (BS) - Centro Spalenza-Don Gnocchi
Inverigo (CO) - Centro S. Maria alla Rotonda
Malnate (VA) - Centro S. Maria al Monte
Salice Terme (PV) - Centro S. Maria alle Fonti

PIEMONTE
Torino - Centro S. Maria ai Colli
Presidio Ausiliatrice-Don Gnocchi

EMILIA ROMAGNA
Parma - Centro S. Maria ai Servi

LIGURIA
La Spezia - Polo Riabilitativo del Levante Ligure

MARCHE
Falconara M.ma (AN)
Centro Bignamini-Don Gnocchi

TOSCANA
Firenze - Centro IRCCS Don Carlo Gnocchi
Marina di Massa (MS) - Centro S. Maria alla Pineta

LAZIO
Roma - Centro S. Maria della Pace
Roma - Centro S. Maria della Provvidenza

CAMPANIA
S. Angelo dei Lombardi (AV)
Polo Specialistico Riabilitativo
Salerno - Centro S. Maria al Mare

BASILICATA
Acerenza (PZ) - Centro Gala-Don Gnocchi
Tricarico (MT)
Polo Specialistico Riabilitativo

Mission and Expertise

INTERDISCIPLINARY RESEARCH GROUP

Physiatrists, geriatricians, neurologists,
Physical Therapists, Speech Therapists,
Occupational Therapists.
Psychologists

DEVELOPMENT AND VALIDATION

Outcome measures,
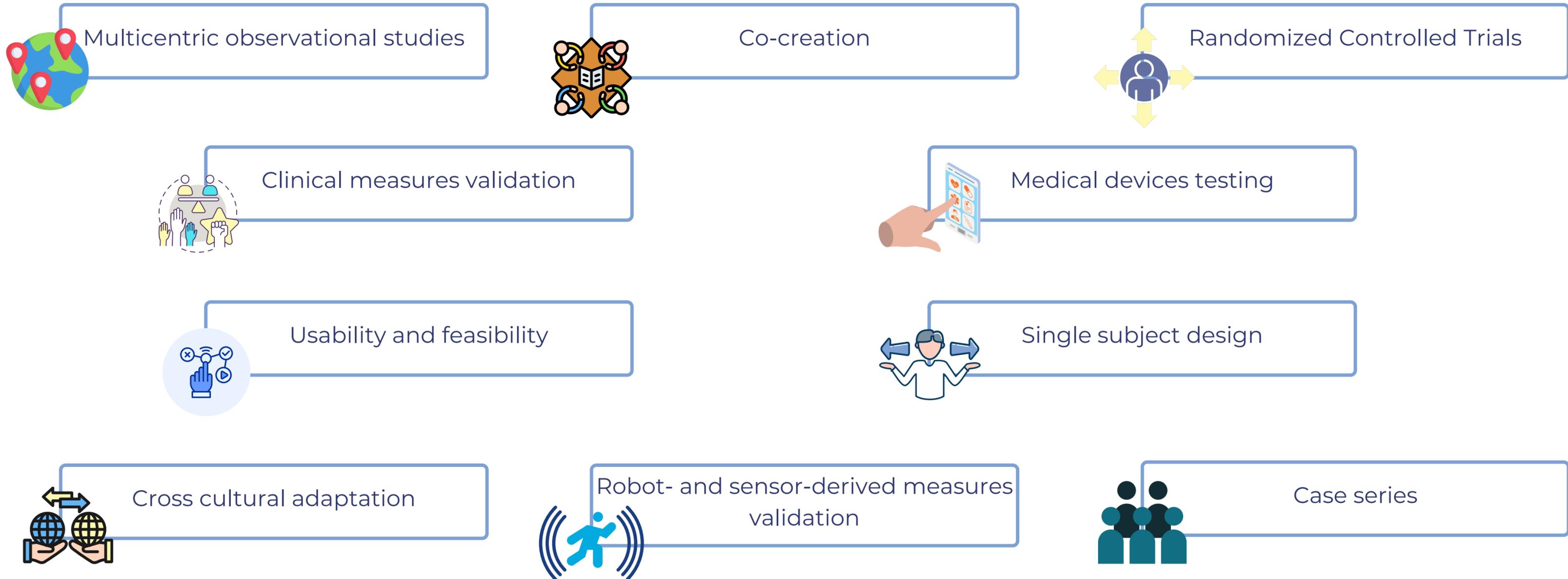Rehabilitation interventions,
Rehabilitation technologies

FOCUS

Neuromotor disability
Neurological rehab (Stroke, PD, sABI)
Healthy and Active Aging

INNOVATION

Co-creation with stakeholders
Patient and Public Involvement
Use of AI tools

Main activities

 Multicentric observational studies

 Co-creation

 Randomized Controlled Trials

 Clinical measures validation

 Medical devices testing

 Usability and feasibility

 Single subject design

 Cross cultural adaptation

 Robot- and sensor-derived measures validation

 Case series

Research focus

- Innovating and improving rehabilitation **assessment and treatment protocols**
- Comparing treatment effectiveness
- Supporting technological development through **co-creation with stakeholders**
- Medical devices testing
- Exposures affecting patients' outcomes
- Co-developing outcome **prediction models**

PUBLICATIONS
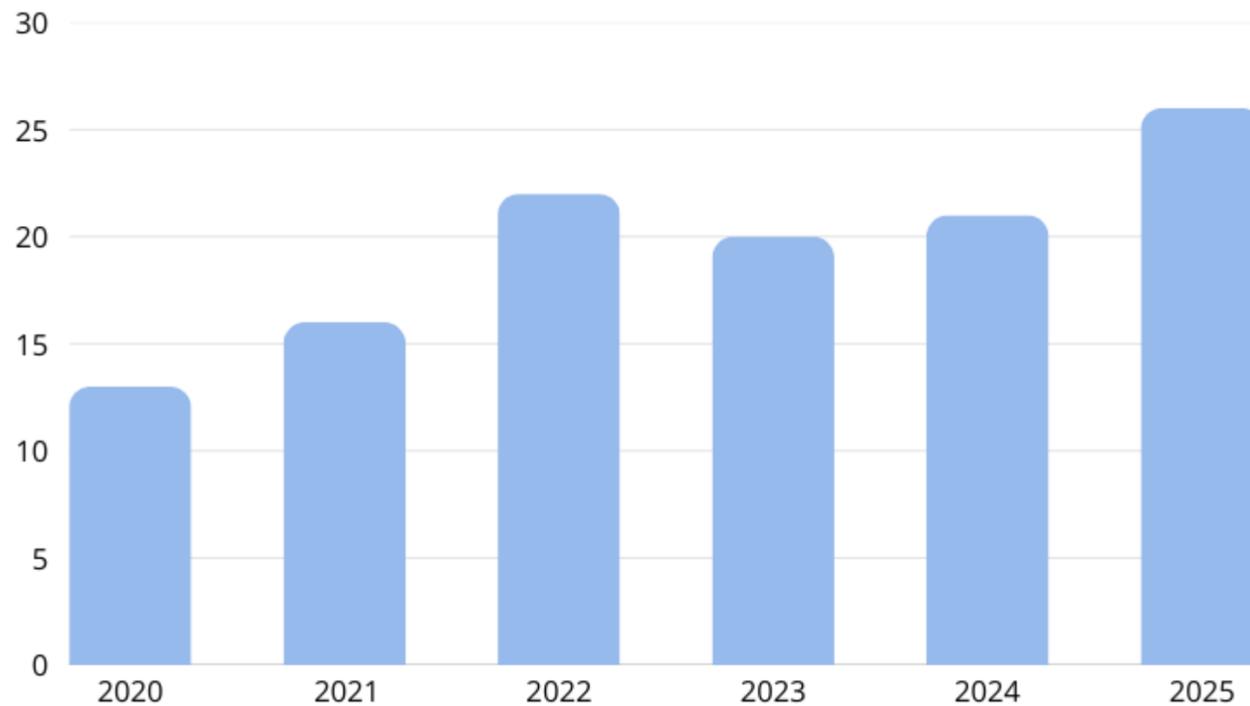
CITATIONS
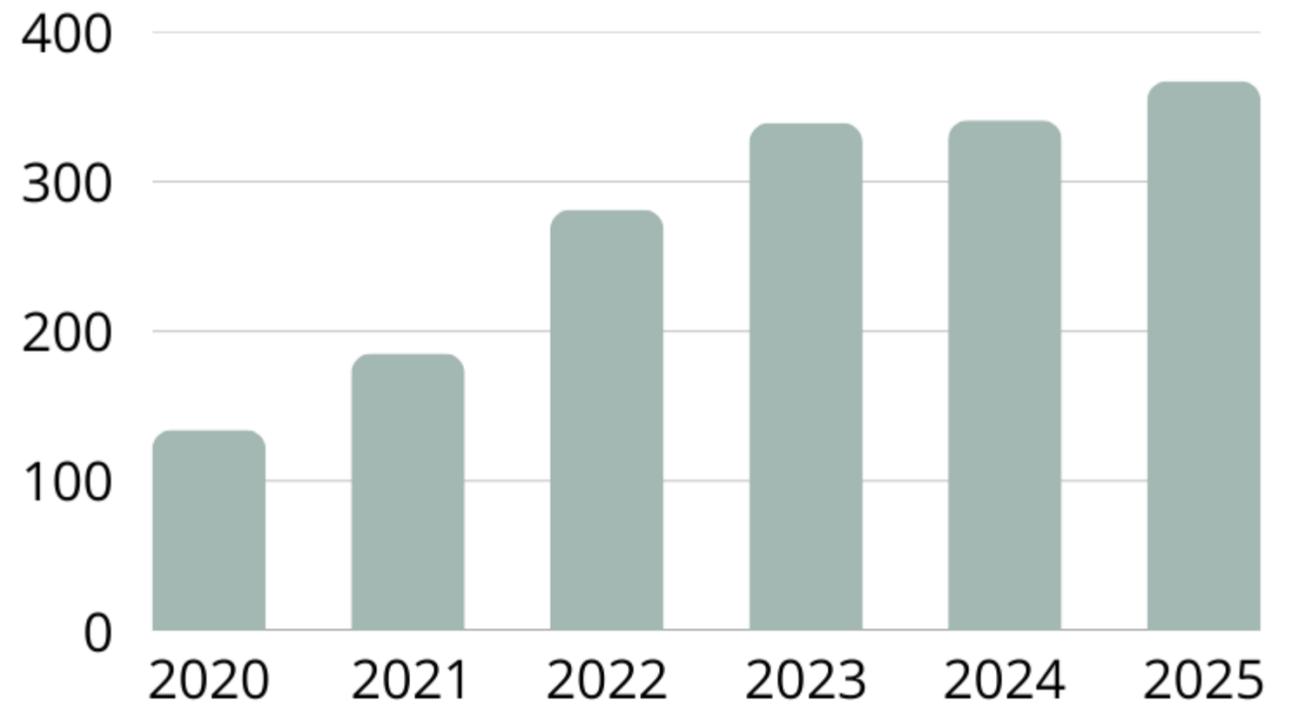
End-to-End technologies for rehabilitation

Gloreha IDROGENET s.r.l.

MOTORE – Humanware

C-mill - Motek

Walker view - TecnoBody

Tyrosolution - Tyromotion

D-Wall - TecnoBody

Optogait - Microgate

Virtual Reality, Neurophysiology, Neuromodulation - IRCCS FDG Florence Facility

2 5-channel Electromyography and **Evoked Potentials Equipment**

1 Be-PLUs 64-Channel Electroencephalograph

Repetitive Magnetic Stimulator for Neuromodulation (r-100 Magventure

Khymeia Home Kit

Star-Stim **tDCs**2 systems for EMS tDCs1

ONGOING RESEARCH

ACTIVE AGEING

Age-IT - A novel public-private alliance to GEnerate socioeconomic, biomedical and technological solutions for an inclusive ITalian ageing society

INFORMA - pIattaforma iNnovativa Funzionale e adattiva per prOmuoveRe un invecchiaMento sAno e attivo

STROKE

STRATEGY - Design and national implementation of a registry of post-stroke rehabilitation patients for systematic evaluation of processes and outcomes and development of data-driven prediction models

BIG-MENTI – National Database of the Virtual Institute of CErebrovascular Diseases - a multicentric observational study (PI P. Calabresi, IRCCS Gemelli Rome)

PESO - Parametrare Esiti Stroke Ospedalieri - Outcomes of patients with acute cerebrovascular event - a prospective longitudinal observational study
(PI P. Palumbo, USLToscana Centro)

REDIRECT - A RandomizED controlled trial on the effects Induced by Robot-assistED rehabIlitation versus occupational therapy on the functional recovery of the upper limb in chronic post-strokE subjeCTs

SCORES – Sensory and Cognitive Outcomes of Robotic Exercises in Stroke - a multicentric RCT (PI M. Germanotta, FdG Rome)

BE-TOP - Biomarcatori Elettroencefalografici per l'ottimazione e personalizzazione della Terapia di Osservazione dell'azione in Pazienti con esiti di ictus in fase cronica- New strategies to maximize the effectiveness of functional rehabilitation of the upper limb - a multicentric clinical trial (PI F. Infarinato,
IRCCS San Raffaele Rome)

ONGOING RESEARCH

NEURODEGENERATIVE DISEASES

SANDY-POC - An Innovative method in SAliva samples for the early differential diagnosis of high-impact NeuroDegenerative diseases through Raman
spectroscopY - a multicentric prospective observational study
MINERVA - Nuovo metodo per la diagnosi delle malattie neurodegenerative basato sulla profilazione biochimica della saliva - a multicentric prospective observational study (PI P. Arcuri, FdG Milan)
INERTIAL - DefINizionE di ReliabiliTy e valIdity delle misure derivate da sensore in persone con mALattia di Parkinson - Clinical investigation with a pre-market medical device.

REHABILITATION TECHNOLOGIES

THE - Tuscany Health Ecosystem; SPOKE 3: Advanced technologies, methods and materials for human health and well-being (spoke leader UNIFI;
partner affiliati UNIPI, UNISI, CNR, SSSA, IMT, Esaote, Museo Galileo), PNRR SPOKE 3

European Projects - PROMISE@LAB Leading Partner: THCS ROOMMATE

ROOMMATE

A cohort multiple Randomized Clinical Trial - AggRegated system Of sensOrs and Multimedia Monitors:

technology for innovAtion and personalizaTion of rEhabilitation care.

The ROOMMATE Consortium aims are to:
- identify and develop innovative technological solutions aimed at relieving the pressure on health and care facilities;
- overcome current barriers to the implementation of technological solutions in the continuum of rehabilitation, addressing the issues of accessibility, sustainability, and equity of care for all;
- foster a shift of current procedures toward digitization of evaluation, treatment, monitoring and rehabilitation, and adopting sustainable and user friendly technologies to promote equity and accessibility of the developed system;
- support patients, as well as researchers and healthcare providers, to improve quality of care, and support caregivers to care for their close ones

European Projects - PROMISE@LAB Leading Partner: THCS INTEGRA

INTEGRA

**Co-creation of an INnovative TR Ecosystem accessible on a GRAnd scale
to persons with disabilities living in the community**

The INTEGRA Consortium aims to:

- **co-create a scalable and adaptable telerehabilitation (TR) ecosystem** integrated into primary and community care, tailored to different European healthcare contexts;
- **improve functioning, participation and quality of life** of persons with disabilities living in the community through personalized, home-based TR services;
- **overcome barriers to TR adoption** (regulatory, technological, organizational and socio-cultural), promoting equity, accessibility and digital inclusion;
- **develop a multidimensional EU knowledge base** to benchmark best practices and support evidence-based redesign of TR services across Europe;
- **support patients, caregivers and healthcare professionals** through co-creation, e-health coaching and sustainable service models, strengthening continuity of care.

European Projects - PROMISE@LAB Leading Partner: EP PerMed Education Call 2025

PRISM

Personalised Rehabilitation: the InterdiSciplinary Management of non-specific Low Back Pain

The **PRISM** project aims to:

- develop a scalable and reusable asynchronous training programme to support the implementation of **Personalised Interdisciplinary Rehabilitation (PIR)** for non-specific low back pain across European healthcare and educational contexts;
- enhance healthcare professionals' competences in **multidimensional assessment**, clinical reasoning, and personalisation of rehabilitation interventions based on best evidence and real clinical cases;
- promote **interdisciplinary collaboration**, shared decision-making, and patient engagement as core components of personalised rehabilitation pathways;
- address cultural, educational, and organisational barriers that currently limit the adoption of biopsychosocial and personalised approaches in low back pain management;
- contribute to the sustainability of European healthcare systems by improving **Personalised Medicine literacy**, enabling knowledge translation into clinical practice, and supporting long-term reuse of training contents in academic and professional education.

Fondazione Don Carlo Gnocchi

université Lumière Lyon 2

dISP Laboratoire Décision et Information Pour les Systèmes de Production
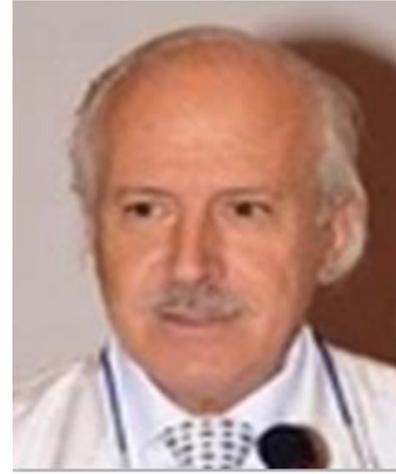
Scientific Board

Francesca Cecchi, AP
Scientific Director

MD, Physiatrist, Geriatrician
DMSC-FDG
publications

Marco Baccini, AdP
Scientfic Co-Director

PT, MCs
DMSC-FDG
publication

Claudio Macchi, FP

Geriatrician, Cardiologist
FDG
publications

Bahia Hakiki, AP

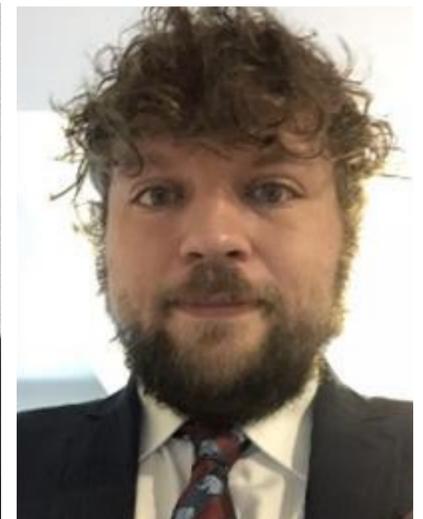MD, PhD, Neurologist, AP
DMSC-FDG
publications

Group Coordinators

Stefano Doronzio

PT, Msc, PhD
DMSC-FDG

publications

Giulio Cherubini

PT, Msc, PhDs
DMSC

publications

Diego Longo

PT, Msc, PhD
DMSC

publications

LAB Coordinators

Donata Bardi

PSY, Msc -FDG
Project Manager
publications

Chiara Castagnoli

PT, MSc -FDG
bedside and benchside
Research Coordinator
publications

Stefano G. Doronzio PT, MSc, PhDs: Robotics group coordinator
Giulio Cherubini, PT, MSc, PhDs: Parkinson's Disease group coordinator
Diego Longo, PT, Msc, PhD: Healthy Aging group coordinator

Donata Bardi, PSY, MSc; Project Manager
Chiara Castagnoli, PT, MSc: bedside and benchside Research Coordinator

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TEAM

UNIVERSITÀ DEGLI STUDI FIRENZE

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Maria Angela Bagni

FP Physiology; publications

Mario De Marco

PT, MSc; publications

Marta Massei

PSY, MSc

Diego Longo

PT, MSc, PhD; publications

Giulio Cherubini

PT, MSc; publications

Michele Piazzini

PT, MSc; publications

Virginia Ambrogi
PSY, MSc
Monica Bernabè
PT
Tommaso Ciapetti
PT, MScs; publications
Agnese De Nisco
ST; publications
Maria Luigia Del Vicario
PT, MScs; publications
Francesca Draghi
ST; publications
Alessio Faralli
PSY, MSc, PhD; publications

Stefano Doronzio
PT, MSC, PhD; publications
Julieta Giacani
OT; publications
Sara Marignani
ST; publications
Ilaria Pellegrini
ST, MSc; publications
Chiara Pedrini
PSY, MSc; publications
Angela M. Politi
PT; publications
Olimpia Salvini
PSY, MSc
Alessandro Sodero
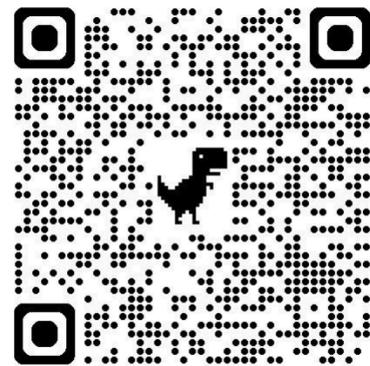MD, Neurologist, PhDs;
publications

THANK YOU!

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Contact us

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