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PRESENTER FULL NAME: Pawel Kiper

ORGANIZATION: IRCCS SAN CAMILLO HOSPITAL

WORKSHOP NAME: Workshop #1-Digital and Smart Health

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REPUBLIC OF TÜRKİYE
MINISTRY OF INDUSTRY
AND TECHNOLOGY

#NATIONAL
TECHNOLOGY
INITIATIVE

COMPETITIVE
SECTORS
PROGRAMME

TÜBİTAK

Description of the Organisation

The San Camillo Hospital in Venice - Lido is a single-specialty health facility with 115 beds.
Since 2005 it has been recognized by the Italian Ministry of Health as a **Scientific Institute of Hospitalization and Care** specialized in **Motor, Communication and Behavior Neurorehabilitation**

IRCCS carries out translational, biomedical and pre-clinical research in order to obtain results that can be transferred to clinical practice

Line 1. Diagnostic and Prognostic Biomarkers
Line 2. Neural Bases of Behavior
Line 3. Innovative Technologies and Methods in Neurorehabilitation
Line 4. Neuro-oncological Rehabilitation

Your Teams' Expertise

HEALTHCARE INNOVATION TECHNOLOGY LAB

Evaluation, development and implementation of neurorehabilitation paradigms aimed at improving motor and cognitive performance in patients with neurological disorders

- ✓ Promotion, conceptualization, development and clinical testing of **VR-based** technological devices and **robotic systems**;

- ✓ Study of the electrophysiological correlates of **recovery**;

- ✓ Study of **motor control and learning**;

- ✓ Development and application of **telerehabilitation** systems;

- ✓ Identification of i**nstrumental biomarkers** of clinical characteristics and recovery in patients with neurological diseases.

- ✓ Development and application of **multi-domain** treatment and combined rehabilitation;

Your Research Fields

Study of the application of **Technological devices** (e.g., Virtual Reality or Robotics) for rehabilitation of neurological disorders

Development, testing and use of **telerehabilitation** solutions for multi-domain treatment of neurological disorders

Study of epigenetics in relation to combined treatments

Study of **prognostic factors** for post-stroke recovery and other neurological diseases

Your On-going Projects

- 1.   Research project – Principal Investigator for Unit i.e., IRCCS San Camillo Hospital (ClinicalTrials.gov NCT04413240) within the project "Clinical Efficacy and Cost-effectiveness of Telerehabilitation for Post-stroke Patients", funded by Italian Ministry of Health (Grant No. RF-2016-02363044).
- Participants - IRCCS San Camillo Hospital, Venice, Italy; University of Verona, Italy; Istituto Superiore Sanità, Rome, Italy

- 2.   Research project - Principal Investigator for Unit i.e., IRCCS San Camillo Hospital (ClinicalTrials.gov NCT03443700) within the project "Randomized Controlled Trial on Robotic Exoskeleton in Spinal Cord Injury: Clinical Outcomes and Cortical Plasticity", funded by Italian Ministry of Health (Grant No. GR-2018-12367485)
- Participants - IRCCS San Camillo Hospital, Venice, Italy; IRCCS Fondazione Santa Lucia, Rome, Italy; Istituto delle Scienze Neurologiche, Bologna, Italy

- 3.   International Research Project: Internal Responsible at San Camillo IRCCS for the project activities related to the European project HoSmartAI (No 101016834).
- Participants - 24 Institutes - https://www.hosmartai.eu/

Project Idea

Call Topic: HORIZON-HLTH-2025-01-DISEASE-06: Implementation research addressing strategies to strengthen health systems for equitable high-quality care and health outcomes in the context of non-communicable diseases (GACD)
Deadline Dates: 29 April 2025

❑ **Objectives:**
- To quantitatively assess the vibrotactile feedback (VTF) discrimination threshold (DT) on stroke subjects, by means of the psychophysical methods of the constant stimuli.
- To compare the personalized VTF with acoustic and visual feedbacks in virtual environment for depth estimation and position error in stroke patients.
- To evaluate whether the personalized VTF for depth estimation in virtual environment can be beneficial for recovery of stroke patients.

- **Expected Results:**
- Establish a personalized VTF protocol for stroke rehabilitation.
- Provide evidence on how different feedback modalities influence motor behavior.
- Develop a clinically validated VR rehabilitation program integrating VTF.
- Uncover neural mechanisms driving recovery, contributing to future biomarker research.

Consortium – required partners

No	Expertise	Type	Country	Role in the project
01	Clinical - Neurorehabilitation	Hospital	JTC-associated countries	Patient enrolment, baseline health and pain assessment, administration of VR rehabilitation protocols, and clinical outcome evaluations
02	Biomedical Engineering	Academic or non-academic	JTC-associated countries	Development of advanced VR systems, sensory feedback technologies, and human-computer interaction
03	Data Science	Academic or non-academic	JTC-associated countries	Analyzing neuroimaging data to identify neural correlates of recovery, developing predictive models for treatment outcomes, and establishing functional connectivity biomarkers

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COUNTRY: Italy