Partnership e progetti di ricerca industriale

Nel corso degli anni, Auxologico ha sviluppato e partecipato a numerosi progetti di ricerca industriale e innovazione, finanziati attraverso programmi regionali, nazionali ed europei, in collaborazione con imprese, startup, università e altri enti di ricerca.

Di seguito una selezione delle principali progettualità sviluppate negli ultimi anni.

Acronimo	*Area di sviluppo*	*Titolo*
SENIOR 2.0	**NEUROLOGY**	**An Innovative AI-Based Solution for Cognitive, Physical, and Social Stimulation in Older Adults with Cognitive Decline**
Absract: SENIOR 2.0 is an innovative research project aimed at promoting healthy ageing through an AI-based digital solution designed for older adults with mild cognitive decline who remain functionally independent. Building on the results of the previous SENIOR project, the initiative integrates personalized cognitive stimulation, physical activity encouragement, and behavioral "nudge" strategies delivered through a smartwatch and smartphone platform. The project includes pilot testing and a randomized controlled clinical trial at IRCCS Istituto Auxologico Italiano to evaluate the effectiveness of the intervention in real-world geriatric rehabilitation settings. SENIOR 2.0 aims to provide an accessible, scalable, and cost-effective solution for healthcare and community care organizations supporting older adults.		

SENIOR	**NEUROLOGY**	**SENIOR - SystEm of Nudge theory based ICT applications for OldeR citizens**
Absract: SENIOR (SystEm of Nudge Theory-based ICT Applications for OldeR Citizens) is an innovative research project focused on supporting older adults with Mild Cognitive Impairment (MCI) through an AI-enabled virtual coaching platform. By combining wearable technologies, mobile applications, and intelligent algorithms, the system delivers personalized recommendations to promote cognitive stimulation, physical activity, healthy lifestyles, and social engagement based on a non-invasive "nudge" approach. The platform continuously adapts to users' needs through machine learning, aiming to preserve independence, improve quality of life, and delay cognitive decline while providing healthcare professionals with tools for personalized monitoring and support.		

HSMONITOR	**CARDIOLOGY - PULMONOLOGY**	**Pre-commercial Procurement of innovative ICT-enabled monitoring to improve health status and optimise hypertension care**
Absract: HSMonitor is a European innovation project aimed at developing and validating ICT-enabled solutions for the monitoring and management of hypertension. Through a person-centred approach based on the Chronic Care Model, the project supports self-management, personalized treatment, and data-driven clinical decision-making. Innovative digital solutions are co-designed and evaluated through a phased procurement process, culminating in large-scale clinical validation with patients and healthcare professionals. HSMonitor aims to improve hypertension care, enhance health outcomes, and promote the adoption of integrated digital health solutions across European healthcare systems.		

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MIND FoodS Hub	ENDOCRINOLOGY	Development of an innovative Digital Food System Hub at the Milan Innovation District (MIND) to advance sustainable agricultural production and promote nutrition strategies that support health and healthy ageing.
Absract: **MiND FoodS Hub** is a multidisciplinary research and innovation project aimed at creating a world-class hub for sustainable food systems within the Milan Innovation District (MIND). The project brings together leading research institutions and industrial partners to develop innovative plant-based food products with enhanced nutritional, functional, and environmental value. By combining advanced agronomic practices, smart sensing technologies, AI-driven data analysis, metabolomics, and clinical validation, MiND FoodS Hub supports the development of healthier and more sustainable food solutions. The initiative fosters collaboration across the entire food innovation ecosystem, strengthening scientific excellence, technology transfer, and industrial competitiveness while promoting public health and environmental sustainability.		

ArtiDe	AUTOIMMUNE DISEASES - IMMUNOLOGY	Development of a Diagnostic Assay for the Early Detection of Seronegative Chronic Inflammatory Arthritis
Absract: **ArtiDe** project aims to improve the diagnosis and management of chronic inflammatory arthritis by identifying novel protein and genetic biomarkers, particularly for patients with seronegative disease, where current diagnostic markers are insufficient. Using advanced technologies including protein arrays, antibody arrays, and next-generation sequencing (NGS), the project seeks to develop and validate a non-invasive in vitro diagnostic (IVD) assay capable of supporting earlier diagnosis, disease stratification, and prognosis. By enabling more timely and personalized treatment, the project has the potential to improve patient outcomes while reducing healthcare costs and advancing innovation in autoimmune disease diagnostics.		

ReHome	NEUROLOGY	ICT Solutions for the Tele-Rehabilitation of Cognitive and Motor Impairments Associated with Neurological Disorders
Absract: **ReHome** is an innovative digital rehabilitation project designed to support people with neurological disorders, including stroke, Parkinson's disease, and mild cognitive impairment, through an integrated home-based care platform. The project combines telemedicine, telerehabilitation, virtual reality, wearable sensors, and AI-enabled monitoring to deliver personalized cognitive and motor rehabilitation pathways. By integrating immersive exergames, remote clinical monitoring, and natural user interfaces, ReHome aims to improve functional recovery, enhance continuity of care, promote patient autonomy, and reduce the long-term burden on healthcare systems through scalable and cost-effective digital rehabilitation solutions.		

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RecoverAI	**NEUROLOGY**	**AI-Enabled Digital Platform for Remote Monitoring and Hospital-to-Home Care**
Absract: RecoverAI aims to develop and validate an innovative AI-powered digital platform to support patients during the transition from hospital to home care, addressing one of the most critical phases of the healthcare pathway. By combining remote patient monitoring, large language models (LLMs), Symbiotic Artificial Intelligence, and advanced digital health technologies, the platform provides continuous, personalized support through virtual healthcare assistants capable of interacting with patients and caregivers via messaging, voice, and digital avatars. Healthcare professionals remain at the center of the decision-making process, while AI enhances clinical workflows, reduces routine workload, and improves continuity of care. The platform also integrates psychological support, digital engagement tools, light therapy, and lifestyle promotion to improve treatment adherence, recovery, and patient well-being. Clinical validation in two regional IRCCSs will assess the platform's effectiveness in enabling earlier and safer hospital discharge, improving healthcare efficiency, and supporting more sustainable, patient-centred models of care.		

MULTIDEM	**NEUROREHABILITATION - NEUROLOGY**	**Development of an Evidence-Based Multisensory Telerehabilitation Platform for Cognitive Ageing**
Absract: MULTIDEM project aims to develop and validate an evidence-based multisensory telerehabilitation protocol to support healthy ageing and slow cognitive decline in older adults with Mild Cognitive Impairment (MCI) or early-stage dementia. Building on advances in multisensory integration neuroscience, the intervention combines audiovisual stimulation delivered through the AVDESK digital platform with standardized neuropsychological assessment to enhance cognitive function, mood, and daily living autonomy. The project evaluates the effectiveness of personalized multisensory training in improving multisensory processing, preserving cognitive performance, and promoting functional independence in both healthy older adults and patients with cognitive impairment. By integrating neuroscience, digital health, and remote rehabilitation technologies, the project seeks to establish an innovative, scalable, and home-based approach for the prevention and management of age-related cognitive decline.		

TRIALS	**REHABILITATION**	**Telerehabilitation for Post-COVID Patients: The Italy–Switzerland Experience**
Absract: TRIALS project aims to develop and validate a home-based telerehabilitation program for patients recovering from COVID-19, addressing the growing need for accessible rehabilitation services during and beyond the pandemic. The solution combines personalized respiratory and motor rehabilitation exercises with a digital platform that enables patients to continue therapy safely at home under the remote supervision of healthcare professionals. Through tablet-based applications, patients receive individualized rehabilitation plans while maintaining direct communication with physicians and physiotherapists. By improving continuity of care after hospital discharge, the project supports functional recovery, reduces barriers to rehabilitation, and expands access to high-quality care for older adults, people with disabilities, and individuals living in underserved or remote areas. Beyond the COVID-19 emergency, the project establishes a scalable digital rehabilitation model that strengthens healthcare resilience and promotes the integration of innovative telehealth solutions into routine clinical practice.		

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iStim_Project	**NEUROLOGY**	**Wearable interoceptive technologies. Non-invasive neuromodulation for stress reduction, artificial heart rate variability enhancement, and emotion recognition augmentation.**
Absract: iStim_Project project aims to develop a non-invasive wearable device for the neuromodulation of interoception, the perception of the body's internal physiological state. Building on the first iStim prototype, the technology stimulates C-tactile skin afferents to reduce stress and anxiety, enhance emotion recognition and regulation, and promote psychological and physiological wellbeing. The new wearable system will integrate sensors to monitor users' psychophysiological responses and personalize stimulation in real time. Its effectiveness will be evaluated in healthy participants through mood assessments, heart rate variability, and biological stress markers. The project seeks to deliver an accessible, non-pharmacological solution with potential applications in clinical, subclinical, and everyday settings.		

TouchStim	**NEUROLOGY**	**The power of touch. Randomized, double-blind, sham-controlled crossover trial of interoceptive non-invasive tactile stimulation for the treatment of osteoarthritis chronic associated pain.**
Absract: TouchStim project investigates a novel, non-pharmacological approach for the management of chronic pain associated with osteoarthritis (OA) through non-invasive interoceptive tactile stimulation. Based on the emerging role of interoception in pain modulation, the study will evaluate the long-term clinical efficacy of a wearable neuromodulation technology capable of stimulating C-tactile afferents to reduce pain and inflammation. In a randomized, double-blind, sham-controlled clinical trial, patients with moderate-to-severe OA pain will receive personalized interoceptive stimulation while clinical outcomes, inflammatory biomarkers, autonomic function, and analgesic medication use are monitored. The project aims to validate an innovative digital therapeutic solution that improves pain management, enhances physical function and quality of life, and reduces reliance on pharmacological treatments, paving the way for scalable, patient-centred interventions in musculoskeletal care.		

JA PRISM	**ENDOCRINOLOGY**	**Prevention oriented RIghts-based approach to Support Mental health in vulnerable population groups**
Absract: JA PRISM is a European Joint Action dedicated to strengthening mental health prevention and promoting equitable, rights-based access to mental health services across EU Member States and Associated Countries. The project supports the transfer, adaptation, and large-scale implementation of evidence-based best practices targeting some of the most pressing public health challenges, including suicide prevention, loneliness among older adults, and the promotion of emotional wellbeing in children and adolescents. Particular attention is given to vulnerable populations, such as older people, migrants, individuals with substance use disorders, and people living with mental health conditions. Through coordinated implementation across multiple European healthcare systems, JA PRISM aims to improve mental health literacy, enhance resilience and social inclusion, empower vulnerable communities, and support the adoption of prevention-oriented, person-centred models of care. By fostering collaboration between healthcare providers, policymakers, and public health authorities, the project contributes to the development of more accessible, sustainable, and human rights-based mental health services throughout Europe.		