



FOREWORD AND CNIC MISSION

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The Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC) is a leading biomedical research center supported through a pioneering public-private partnership between the Spanish Government and the Pro CNIC Foundation, which comprises eleven Spanish companies outside the biomedical sector. Recognized as a Severo Ochoa Center of Excellence by Spain's Ministry of Science and Innovation since 2011, the CNIC also benefits from the strategic oversight of its international Scientific Advisory Board, which provides guidance on research priorities and recruitment and regularly evaluates institutional and programmatic performance.

Cardiovascular disease (CVD) remains the leading cause of death worldwide. The escalating costs of managing CVD in its symptomatic stages place a growing burden on patients, families, and healthcare systems. In response, the CNIC has defined three overarching goals: to advance understanding of cardiovascular health, improve disease prevention and health promotion, and drive therapeutic innovation for prevalent forms of CVD. Achieving these goals requires mechanistic studies to uncover the molecular and cellular basis of disease, alongside clinical research to translate discoveries into improved strategies for health promotion, diagnosis, and care.

To meet these challenges, the CNIC operates on four pillars: excellence in basic and clinical research, advanced technology, collaborative networking, and training. Scientific activity is structured across two interlinked departments—Basic Research and Clinical Research—and seven integrated research programs: (1) novel mechanisms of atherosclerosis; (2) myocardial homeostasis and cardiac injury; (3) cardiovascular regeneration; (4) novel arrhythmogenic mechanisms; (5) cardiovascular risk factors and brain health; (6) cardiovascular health promotion; and (7) technology development. These programs span the full translational spectrum—from discovery science to large-scale clinical trials—and leverage the CNIC's strengths in cutting-edge technologies, animal and cellular models, imaging, and data science.

In 2024, CNIC welcomed two new Group Leaders: Dr. Fátima Sánchez Cabo (Computational Systems Biomedicine) within the atherosclerosis program, and Dr. Ana Devesa (Cardiometabolic Disease and Advanced Imaging) within the myocardial homeostasis program.

The CNIC's research has directly shaped clinical practice: six of its major studies (SECURE, PESA, TAN-SNIP, FOCUS, AWHS, and Reboot) contributed twelve key recommendations to the European Society of Cardiology's 2024 clinical guidelines in hypertension, acute coronary syndromes, and peripheral and aortic arterial disease. As of 2024, the CNIC leads 23 clinical studies and trials involving 14,883 adults and 50,000 children.

A major highlight of 2024 was the launch of REACT, an ambitious international precision medicine initiative co-led by CNIC and Denmark's Rigshospitalet and funded by the Novo Nordisk Foundation. Building on insights from the PESA CNIC-Santander study, REACT will analyze 16,000 individuals (8,000 in Spain) to advance personalized atherosclerosis prevention. The study is designed in two phases over eight years, with €23 million secured for the first 2.5-year phase. Through REACT, CNIC is driving a new era in cardiovascular prevention and reinforcing its leadership in translational research.

In 2024, the CNIC secured €3.5 million through two national Artificial Intelligence R&D excellence projects awarded by the Ministry for Digital Transformation and Public Administration. It also received €3.9 million in funding from RED.ES for the CardiotrAlning initiative, supporting 15 contracts to promote AI and Big Data training in cardiovascular health. An additional €2 million was awarded by the Ministry of Science, Innovation and Universities for scientific equipment acquisition.

Internationally, the CNIC participated in 18 consortia funded through Horizon 2020 and Horizon Europe, coordinating six. The center also contributed to five ERA4Health CARDINNOV initiatives and maintained active collaborations with major global organizations including the Leducq Foundation, NIH, and British Heart Foundation.

Another key milestone was CNIC's role in the EU4HEALTH Joint Action JACARDI, a €53 million initiative spanning 21 European countries to address major public health challenges.

Further, CNIC received €1.7 million from the European Commission for the MSCA COFUND program Cure Heart and Brain, implemented in collaboration with 24 international partners. In 2024, the program supported the incorporation of three postdoctoral researchers, with nine more to follow in 2025.

The CNIC's most impactful innovation to date is the cardiovascular polypill, developed in collaboration with Ferrer laboratories. This once-daily medication for post-myocardial infarction patients—now included in the WHO List of Essential Medicines and marketed in 29 countries—has been shown to reduce cardiovascular events by 24% and cardiovascular mortality by 33%. The polypill exemplifies CNIC's commitment to research with direct patient benefit.

Further achievements from 2024 are detailed throughout this report. As we look ahead, CNIC remains committed to excellence, innovation, and collaboration across disciplines. By integrating basic and clinical research, the center will continue to generate impactful discoveries and train the next generation of scientists working to reduce the global burden of cardiovascular disease.