

doi:10.1093/eurheartj/ehaa386

# The ESC Working Group on Coronary Pathophysiology and Microcirculation



The **15 Working Groups of the ESC** are the scientific backbone of the ESC and have been created to provide their extensive expertise to specific areas of cardiovascular medicine. Together, they contribute to the mission of the ESC: *to reduce the burden of cardiovascular disease*. This year, the Working Groups represent more than 7,100 ESC members, with a growing community of younger members (2,200) under 40 years of age. Education & research are two of the main focus areas of the Working Groups, with the delivery of high-quality educational courses, annual meetings and webinars. As the European references in their fields of expertise, the Working Groups regularly publish papers, consensus documents, handbooks, and journals.

They are, without question, a driving force within the ESC.

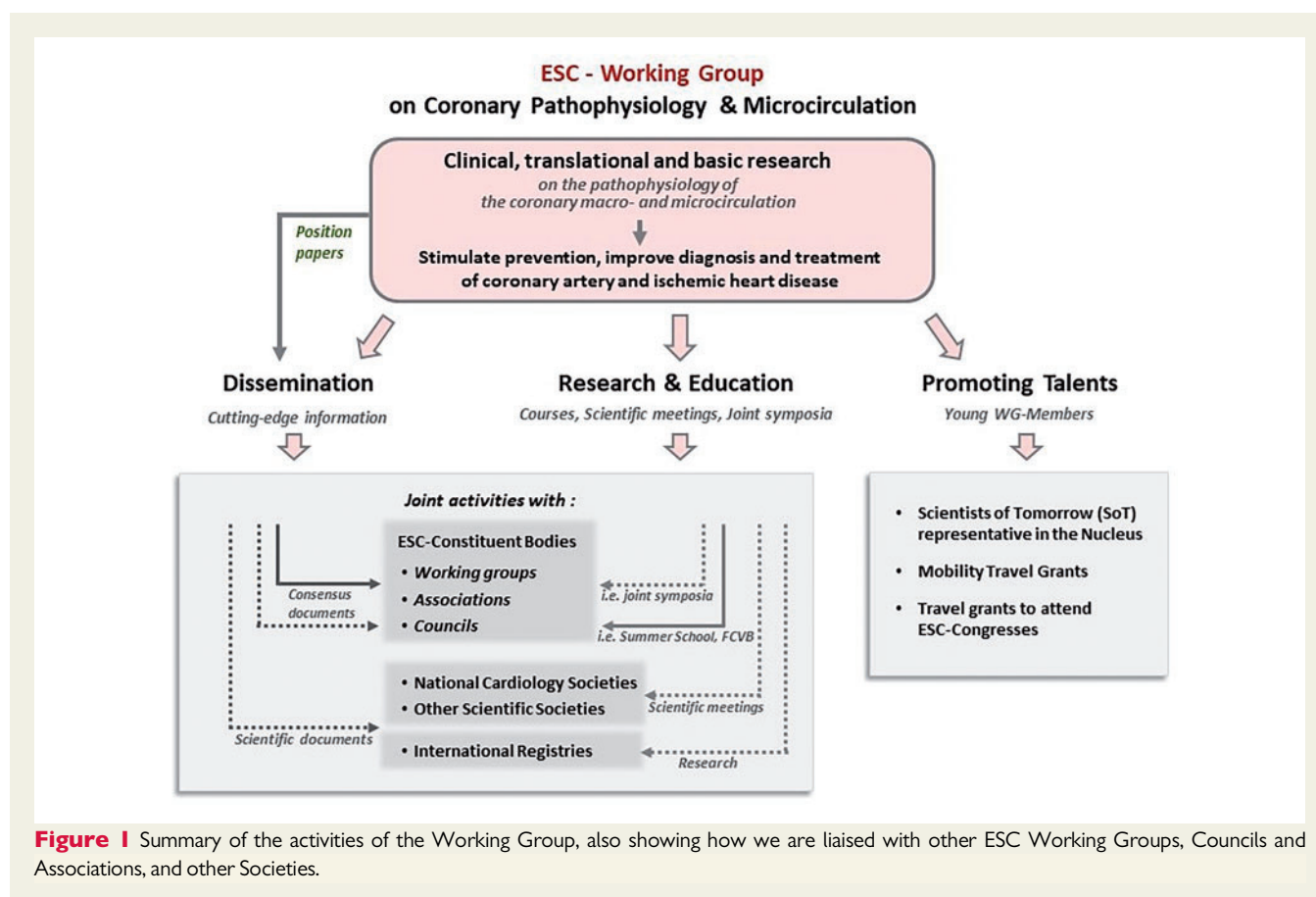
Prof. Cecilia Linde, ESC Vice-President for Working Groups.

Find out more at <https://www.escardio.org/Working-groups> online here.

The Working Group was originally founded in 1993 with an initial focus on the microcirculation. The first annual meeting—bringing together clinicians and basic scientists—was subsequently held in Berlin in 1997, followed by regular meetings and international symposia organized mainly in conjunction with annual meetings of various national cardiac societies.

During the early period the Working Group was led by several chairpersons, including Stig Haunsø (Copenhagen, Denmark), Juan Carlos

Kaski (London, UK), Giuseppe Ambrosio (Perugia, Italy), Axel Pries (Berlin, Germany), Augusto Gallino (Bellinzona, Switzerland), and Filippo Crea (Rome, Italy). In 2004, the Working Group merged with the Working Group on Coronary Pathophysiology creating the *Working Group on Coronary Pathophysiology and Microcirculation*, as we know it today. Michael Weiss (Munich, Germany), Mario Marzilli (Pisa, Italy), Raffaele Bugiardini (Bologna, Italy), Cor de Wit (Lübeck, Germany), Lina Badimon (Barcelona, Spain), Akos Koller (Pecs, Hungary), Maria



**Figure 1** Summary of the activities of the Working Group, also showing how we are liaised with other ESC Working Groups, Councils and Associations, and other Societies.

Dorobantu (Bucharest, Romania), and Dirk Duncker (Rotterdam, The Netherlands) served as chairpersons during this period.

The ESC Working Group on Coronary Pathophysiology and Microcirculation focuses on clinical, translational, and basic research in the field of coronary pathophysiology from the large epicardial coronary arteries down to the resistance and exchange vessels (Figure 1). Our mission is to integrate and promote insight into pathophysiology, to stimulate prevention and improve diagnosis and treatment of impaired coronary perfusion. For this purpose, particular emphasis is given to the fundamental interaction between basic scientists and clinicians. This tradition has also been respected with regard to the composition of the nucleus which includes a balanced membership of scientists with a background in basic science and clinical research.

To fulfil its mission, the Working Group aims to advance an integrative understanding of the physiology and pathophysiology of the coronary circulation. It promotes and supports investigations of coronary vascular physiology and biology in health and disease, with the ultimate goal of improving prevention as well as diagnosis and treatment of coronary and ischaemic heart disease. Moreover, the Working Group promotes and coordinates pre-clinical and clinical studies and international registries, and disseminates cutting-edge information related to the fields of coronary pathophysiology, microcirculation, and myocardial ischaemia. Finally, the Working Group promotes participation of young and talented Working Group members in the scientific activities of the Working Group.

To achieve these goals, the Working Group on Coronary Pathophysiology and Microcirculation has developed a wide span of activities (see Figure 1 for details). We have initiated joint activities with other ESC working groups, councils, and associations, as well as other organizations, including the European Society of Microcirculation and the Microcirculatory Society, that share our interest in coronary pathophysiology and microcirculation. Several members of these other ESC entities or outside organizations have liaised with our Working Group as Affiliated Nucleus Members.

The range of activities of the Working Group includes dissemination of scientific updates and late-breaking scientific information by contributing to the organization and preparation of the annual ESC congress as well as the Biennial Frontiers in Cardiovascular Biomedicine (FCVB) Meeting organized by the Council on Basic Cardiovascular Science (CBCS). In addition, the Working Group organizes joint symposia during annual meetings of other Working Groups, such as the Working Group on Thrombosis (2018), as well as during annual meetings of National Cardiac Societies, including the Italian (2014), Spanish (2015), Croatian (2016), Hellenic (2016), Hungarian (2017), Romanian (2016 and 2018), and North-Macedonian (2019) Societies of Cardiology. In 2017, our former Chair, Maria Dorobantu, organized the *First European Meeting on Coronary Microcirculation and Hypertension*, in collaboration with the ESC Council on Hypertension and the Romanian Society of Hypertension, which brought together over 300 clinical, translational, and basic scientists in Sinaia, Romania.<sup>1</sup> Subsequently, in December 2018, we organized a scientific meeting *Coronary Pathophysiology and Microcirculation in Acute Coronary Syndrome and Heart Failure* in collaboration with the German Center for Cardiovascular Research (DZHK, partner site Berlin).<sup>2</sup>

A major research activity of the Working Group is the scientific support of an international registry that explores in-hospital death from myocardial infarction in Eastern Europe: *International Registry of Acute*

*Coronary Syndromes in Transitional Countries (ISACS-TC)*. Initiated and coordinated by former Working Group Chairs Raffaele Bugiardini and Lina Badimon, the registry is a great success that is reflected by a number of scientific articles in international peer-reviewed journals.<sup>3,4</sup>

Other scientific activities of our Working Group involve the publication of Position Papers and Consensus Documents in the ESC journal family, addressing relevant issues and identifying knowledge gaps that we feel should be topic of future research efforts. In the past 5 years, the Working Group has published Position Papers on coronary vascular regulation, remodelling and collateralization,<sup>5</sup> obesity and heart disease,<sup>6</sup> coronary microvascular dysfunction in cardiovascular disease,<sup>7</sup> depression and coronary heart disease,<sup>8</sup> and contributes to consensus documents in collaboration with other ESC working groups.<sup>9</sup> In addition, we publish Recommended Readings on our webpage, and every 2 months one of our Nucleus Members discusses a recently published article, that is deemed to be of great interest to our readership, on our webpage as 'Commented Article'.

Importantly, in all of our activities we actively involve young talented basic and clinical scientists. For example, we have connected with Scientists of Tomorrow (Judith Cubedo and Edina Cenko), to create a sustained involvement of young cardiovascular scientists in our Working Group's activities. Furthermore, we offer an annual Mobility Travel Grant for young basic or clinical researchers in the field, to enable them to work on their own projects in a cardiovascular research institution in a European Country.

The Working Group is home to approximately 600 members, including basic, translational, and clinical scientists that all share a passion for the coronary circulation in health and disease. If you are an MD or a PhD with a profound interest in the coronary circulation, this is your home!

Dirk J. Duncker<sup>1</sup>, Teresa Padro<sup>2</sup>, Maria Dorobantu<sup>3</sup>, Dimitris Tousoulis<sup>4</sup>, and Cor de Wit<sup>5</sup>

<sup>1</sup>Division of Experimental Cardiology, Department of Cardiology, Thoraxcenter, Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands <sup>2</sup>Cardiovascular Program-ICCC, Research Institute Hospital Santa Creu i Sant Pau; CiberCV-Institute Carlos III, Barcelona, Spain <sup>3</sup>Department of Cardiology of Clinic Emergency Hospital of Bucharest, University of Medicine and Pharmacy Carol Davila of Bucharest <sup>4</sup>1st Department of Cardiology, Athens Medical School, National and Kapodistrian University of Athens, Greece <sup>5</sup>Institut für Physiologie, Universität zu Lübeck, Lübeck, Germany and DZHK (German Center for Cardiovascular Research), partner site Hamburg/Kiel/Lübeck

**Conflict of interest:** none declared.

## References

References are available as [supplementary material](#) at *European Heart Journal* online.

