

RESEARCH LETTER

HyperChildNET: A European Network Moving Forward in the Field of Pediatric Hypertension

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Considerable advances have been made over the past few decades on the concept of childhood origin of adult diseases, including hypertension. Abnormal blood pressure (BP) in youth continues to rise and leads to hypertension in early adulthood. Furthermore, there is evidence to relate adult hypertension and organ damage to several abnormalities in youth.¹ However, even though it has become clear that high BP is a life course problem that can become evident in early life, little attention has been paid to the problem of high BP in youth. A commitment to reduce the gap of knowledge in the prevention, diagnosis, and treatment of high BP in children and adolescents should guide timely concerted actions.

The need for an urgent pan-European action, focusing on high BP in the youth, has been recognized by the European Commission, which has approved and funded the European Cooperation in Science and Technology (COST) Action HyperChildNET (Network for BP Research in Children and Adolescents, COST Action 19115), starting in October 2020 with a duration of 4 years. COST, founded in 1971, is the longest running European intergovernmental funding programme supporting transnational cooperation among researchers. HyperChildNET has established a European sustainable, multidisciplinary and interdisciplinary network that can count on the participation of 25 European countries and the inclusion of >100 active members distributed in 5 working groups. These 5 working groups allow the exchange of knowledge and expertise on specific core topics (BP measurement devices, BP reference values, epidemiology, impact and prevention of hypertension, as well as dissemination of the available knowledge) with an interdisciplinary approach that includes clinicians, health economists, educational institutions, nutritional and

pharmaceutical companies, medical device manufacturers, and other experts of the complex basic diagnostic and clinic aspects of the high BP condition. The aim of the action is to make progress in the field by creating new long-lasting partnerships, defining the best methodological approach for acquiring a holistic understanding of the factors affecting high BP in youth, and to implement corrective and preventive actions both globally and locally across Europe (Figure).

HyperChildNET supports key activities for the promotion of networking projects based on Core Action, Research, Training, and Dissemination:

A working plan with details on concrete tasks and deadlines is agreed among the participating organizations in the management committee at the beginning of every grant period. This working plan includes the role of all working groups, researchers, and stakeholders involved in the COST Action year by year.

Programs of mobility through short-term scientific mission, are performed by grants that allow the presence of professionals in research and clinical facilities in other countries that fulfill the eligibility and rules set by COST for sending and hosting countries.

Virtual mobility grants, a new successful tool established during the pandemic, support the implementation of research-related activities that do not necessarily require in-person presence.

A special approach has been adopted during the first 2 years in terms of 8 short-term scientific missions and 14 virtual mobility grants to help young researchers to broaden their scope and knowledge beyond their own scientific discipline and to acquire transferrable and transversal skills. Attention is given to the Inclusiveness Target Countries with

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Nonstandard Abbreviations and Acronyms

BP	blood pressure
COST	European Cooperation in Science and Technology

less research capacity and the promotion of gender balance at all levels of the network with women in leading positions. Promoted by HyperChildNET, the Early Prevention of Obesity Project (reference number 101080219) has already been funded under the Horizon Europe

Programme. To generate new networks, HyperChildNET is expanding the already existing cohorts and team members, setting up a new network association and creating a platform for network-based input to public policies. HyperChildNET is currently preparing a web-based electronic data capture system to be used for high-quality clinical research data management, according to the International Council for Harmonisation of Technical Requirements for Pharmaceuticals for Human Use (ICH) guideline for clinical practice. Data will be registered anonymously and handled confidentially. To promote and disseminate the research objectives, HyperChildNET has organized regular conferences

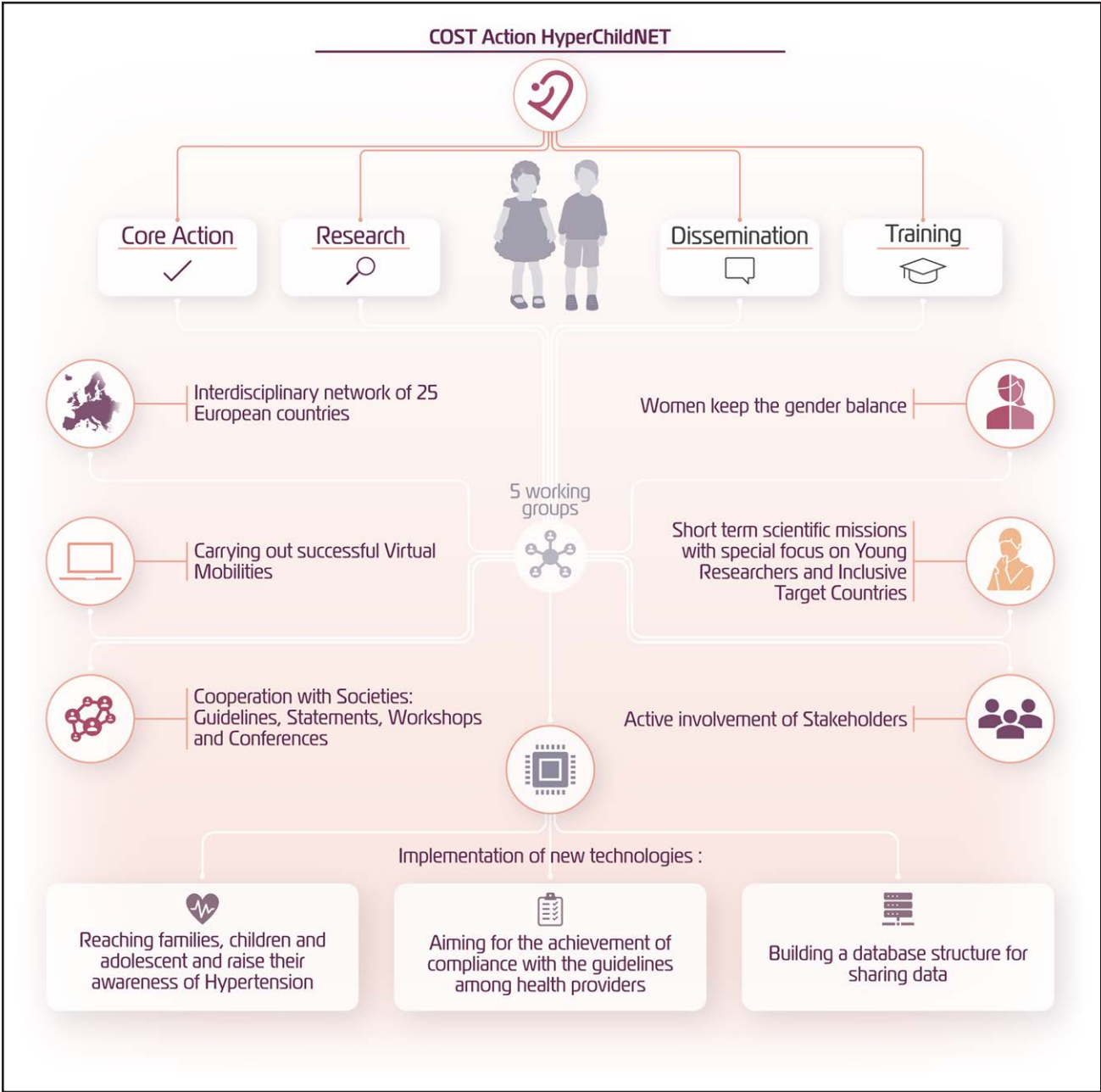


Figure. HyperChildNET: objective, structure, and tools. COST indicates European Cooperation in Science and Technology.

(Valencia, Istanbul, and Krakow) and training schools (Vilnius). It has also produced reports, guides, strategy documents, and action plans. Eleven scientific papers have been published in peer-reviewed journals (<https://hyperchildnet.eu>). Special issues in *Frontiers in Cardiovascular Medicine* and *Nutrients* have been led by HyperChildNET with a wide collaboration of its members.^{2–5}

HyperChildNET is not only actively collaborating with renowned Societies but is also working together with the industry allowing transfer from science to leading global manufacturers and the food industry.

An official website has been created to raise awareness about the importance of BP in youth among health care professionals and to disseminate healthy lifestyles in the young component of the general population (<https://hyperchildnet.eu>). The website displays the related fundamental information, as well as the upcoming actions and events, highlighting the way to collaborate with the consortium. The main objective is to empower families, children, and adolescents in improving their quality of life by providing an online observatory with valuable and easily accessible information, also directed to target groups and stakeholders worldwide. To reach named groups, the European HyperChildNET week reports yearly its activity in coincidence with the World Children's Day in November, the observatory serving as a repository for publications and generated tools. To make the diagnosis of hypertension easier for physicians, free online calculators have been developed for office, ambulatory, and home BP based on the European Society of Hypertension guidelines.¹

In line with its scope, HyperChildNET is building interdisciplinary, transnational, and intergovernmental networks that allow to move forward in the field of pediatric hypertension. The main structure of the project and its achievements during the first 2 years are providing an impetus for research advances that may have a favorable reflection for clinical practice and the general society.

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Disclosures

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