

# NEWSLETTER

CONNECT COST ACTION CA19127: COGNITIVE DECLINE IN NEPHRO-NEUROLOGY: EUROPEAN COOPERATIVE TARGET



## CREATING A COLLABORATION ACROSS EUROPE

### MESSAGE FROM THE CHAIR OF THE ACTION

I feel particularly honored to write these introductory notes to the first issue of the CONNECT newsletter. When we launched the Cognitive Impairment in Kidney Patients Program in October 2020, we were determined to address a quite novel, complicated topic with major scientific and clinical implications. In addition, we were aware that we had to put all our resources and strengths to reach the targets as defined in the CONNECT memorandum of understanding (MoU).

The first step focused on promoting close interactions between nephrologists and neurologists, because the cross-talk between these two specialties is the *primum movens* of the entire process. The second objective was to establish the state of art of our knowledge in the field, an indispensable premise for promoting research related to the pathogenesis, diagnosis and therapy of mental dysfunction in kidney patients. Furthermore, we encouraged the involvement of new generations of doctors to study this issue in their training course, as these young specialists constitute the fundamental for the future vision of CONNECT.

### IN THIS ISSUE

## MESSAGE FROM THE CHAIR OF THE ACTION

## CREATING A COLLABORATION ACROSS EUROPE

## A LOOK BACK AT FIRST YEAR

## UPCOMING EVENTS IN CONNECT

I believe that these first targets have been largely achieved. CONNECT, after an obvious initial period of slow growth, has really expanded and today we have members from most of the European countries plus the USA. These include not only nephrologists and clinical neurologists, but also neuroscientists and kidney physiologists, as well as other professionals such as geriatricians, biochemists, pharmacologists etc. In other words, we are a truly interdisciplinary heterogeneous group, ideal for tackling an innovative program. With respect to the second point, we have published a special issue of Nephrology Dialysis Transplantation where, in six manuscripts, we have summarized and clarified our current knowledge in this field. We believe that these publications will represent the starting point for those who want to be interested in this topic.

Finally, twelve short term fellowships were activated which allowed many young colleagues to visit European centers involved in the studies on kidney-brain interaction. These scholarships could have been even more if there had not been the problems due to Covid-19.

This is just the beginning because in the second year, we have other initiatives in progress in the pipeline that will be promptly illustrated in this newsletter. All this vast program was made possible thanks to the team spirit that existed among all the components of CONNECT. My deepest thanks go to them, including WG5 members and in particular Gaye Hafez who takes care of many initiatives in CONNECT such as this newsletter.



Prof. Giovambattista Capasso MD PhD FERA  
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Biology and Genetics  
Full Professor of Nephrology  
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## A LOOK BACK AT FIRST YEAR

### KICK-OFF MEETING

The official kick-off meeting European COST (European Cooperation in Science and Technology) Action CA19127 CONNECT-Cognitive decline in Nephro-Neurology: European Cooperative Target was held online according to pandemic conditions on 12-13 October 2020.



This meeting was the official start date of four-year-period action to create a scientific network across Europe. CONNECT aims to coordinate research on cognitive impairment in chronic kidney disease (CKD).

This requires exchanging clinical information between nephrologists and neurologists, and between neuroscientists and kidney physiologists, guided by big data analysts. As of now, we have more than 85 members with the participation of 25 COST countries and United States as COST international partner country.

In the first year, we carried out many activities in line with the strategic objectives specified in the [MoU](#). We carried out collaborative studies both to strengthen the scientific network and in accordance with the purpose of the action.

## DISSEMINATION AND COMMUNICATION

With the start of the action, [Five working groups](#) were established as stated in the MoU. A logo was designed by the working group-5 to increase the visibility of the Action, and a [web page](#) was created to announce relevant events to all stakeholders.

[A dissemination and communication plan](#) has been prepared for the activities that should be carried out between 2020-2024 to ensure the communication of the Action with scientific society and the general public.

# WORKING GROUPS

What are the goals of each WG?

## WG1-Preclinical research

*Carsten Wagner-Ziad Massy*

Kidney disease affects 10-12 % of the population worldwide and is associated with severe consequences such as increased cardiovascular morbidity and mortality, bone disease, and impaired cognitive functions. The latter has long been neglected but is now receiving increased clinical attention with improved diagnosis. However, the underlying mechanisms leading to cognitive dysfunction are poorly understood hampering the development of efficient preventive and therapeutic strategies. The WG1 will explore also the consequences of cognitive and neurological disorders on renal function by using animal models of neurological disorders.

## WG2-Clinical research and clinical trials

*Christoph Wanner-Annette Bruchfeld*

The main objective of WG2 is to disseminate knowledge on clinical research and clinical trials on cognitive impairment in CKD. Thereby, more, and more successful clinical trials can be conducted on the prevalence, risk factors, and best treatments of mild cognitive impairment-chronic kidney disease (MCI-CKD).

## WG3-Clinical practice

*Marion Pepin-Andrzej Wiecek*

The main objective of WG3 is to strengthen collaborations between nephrologists and neurologists to ensure they speak a common language. When their knowledge is up to date on MCI-CKD, clinicians will be able to cross-diagnose beyond their own expertise and refer patients to neurologists or nephrologists for further diagnosis and treatment when appropriate.

## WG4-Data management and bioinformatics

*Dorothea Nitsch-Ivo Fridolin*

The main objective of WG4 is to exchange knowledge on big data management and bioinformatics among researchers for omics, imaging, and epidemiology.

## WG5-Inclusiveness and dissemination

*Gaye Hafez-Maria José Soler Romeo*

The main objective of WG5 is to involve diverse stakeholders and disseminate CONNECT Action knowledge to the research and clinical communities.

The main aim is to build the CONNECT Action network among already existing research groups to leverage currently funded research. The Action has identified research coordinating objectives for each working group.

# CONNECTing the kidney to brain

The most important achievement of the first year has been related to a collaborative work on a special issue which has been published in a high-impact journal Nephrology Dialysis Transplantation (NDT). In this issue there are six reviews on current topics linking brain and kidney by CONNECT researchers from different fields.



## Publications as a result of collaborative work

In accordance with COST rules, all reviews are open access and available online. Volume 37, Issue Supplement\_2, January 2022  
CONNECTing the kidney to brain dysfunction: from animal models to clinical practice

- Present and future of CONNECT: a new and compelling project of modern medicine
- Acidosis, cognitive dysfunction and motor impairments in patients with kidney disease
- Neuropeptide Y as a risk factor for cardiorenal disease and cognitive dysfunction in chronic kidney disease: translational opportunities and challenges
- Cognitive disorders in patients with chronic kidney disease: specificities of clinical assessment
- Chronic kidney disease and neurological disorders: are uraemic toxins the missing piece of the puzzle?
- Brain dysfunction in tubular and tubulointerstitial kidney diseases
- Albuminuria as a risk factor for mild cognitive impairment and dementia—what is the evidence?



## SHORT TERM SCIENTIFIC MISSIONS (STSM)

STSM COORDINATOR: PROF EWOUT HOORN

Short Term Scientific Missions (STSM) are institutional visits aimed at supporting individual mobility, fostering collaboration between individuals. An STSM should specifically contribute to the scientific objectives of the COST Action “Cognitive decline in Nephro-Neurology: European Cooperative Target (CONNECT)”, while enabling those partaking in the missions to establish new partnerships, learn new techniques, gain access to specific data, instruments and/or methods not available in their own institutions/organisations.

In the first grant period, 12 STSMs were held with participants from different countries. All submitted STSM applications were decided upon on a first-come-first-serve basis depending on available funds. These participants were mostly young researchers from different backgrounds.

After the STSM, the investigators submitted a scientific report to the STSM Host and STSM coordinator. The topics of STSM carried out in host institutes determined as Italy, Spain and Switzerland were as follows:

- Application of super resolution microscopy for kidney-brain interaction
- Tools to understand cognitive mechanisms in CKD patients
- Understanding the brain-kidney interaction through laboratory techniques, animal models and neuropsychological testing of CKD patients

- Effects of CKD on brain gene expression
- Importance of confocal microscopy in nephro-neurology
- The application of two-photon and expansion microscopy in brain-kidney interconnection research
- Vascular damage and cognitive impairment, a study on brain-kidney dysfunction
- Application of 2P microscopy and expansion in brain-tubular defects interaction
- Effect of Alzheimer in the kidney
- CKD animal models useful for kidney-brain study



**science,  
network  
& fun.**

BY STSM PARTICIPANTS



## UPCOMING EVENTS

### 59th ERA CONGRESS PARIS&VIRTUAL

Date: 19-22 MAY 2022

<https://www.era-online.org/en/paris2022/registrations/>

Scientific programme is [available](#).

At the 59th congress of ERA, our main stakeholder, there is a symposium reserved to CONNECT.

### MANAGEMENT COMMITTEE MEETING

Date: September 2022

Location: Ariano Irpino, Naples, Italy

### ITC CONFERENCE CALL

The first ITC Call was announced in October 2021. It is still [available](#), contact us.

## DELPHI SURVEY

We aim to conduct a survey titled as "Clinical Practices for the Management of Neurological Complications in CKD Patients in Europe: A Delphi Study" to create a common language between nephrologists, neurologists and geriatricians. Details and study design will be shared via our website. All the contributions from CONNECT members are welcome. Corresponding: [Boris Bikbov](#), [Dorothea Nitsch](#), [Marion Pepin](#), [Gaye Hafez](#)

## FIRST TRAINING SCHOOL

Date: September 2022

Location: Ariano Irpino, Naples, Italy

[BIOGEM Research Center](#)

Details will be shared via website and social media accounts.



## SUBSCRIBE NEWSLETTER

Enter your e-mail address in the NEWSLETTER tab you see below on our [website](#). Published newsletters will automatically arrive in your inbox.

Please let us know about your publications, congresses and events related to the CONNECT action. Send us the details and we may announce them on our website and social media accounts, and let's prepare the next newsletter together for dissemination, communication and inclusiveness activities.



CONNECT COST Action Working Group ...

These animations aim to increase awareness of general public about the...



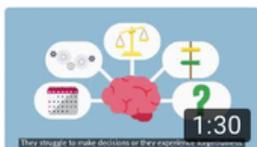
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## ANIMATIONS

### BETTER COMMUNICATION, HIGHER IMPACT

To reach wider audience, we prepared six videos. Each video explains the aim of CONNECT and responsibilities of the working groups specified in the MoU.

Working group leaders and co-leaders contributed to scripting the videos, while WG5 coordinated the work. Thanks to [Riva Illustrations](#) and [Darvideo Animation Studio](#) for their creativity. Please visit our [website](#) or [YouTube channel](#) to watch these animations. We also would like to thank [Boutik Studio](#) for our website design.

## CONTACT

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