

THE HUMAN MICROBIOTA & BRAIN DISEASES | 4th Edition

THERAPEUTIC TARGETS

7 May 2021
Online Event

PROGRAM & REGISTRATION

www.microbiote-geneva.org

CONTEXT

The past two years have seen an exponential increase of lay and scientific publications on the effects of the trillions small guests that each of us more or less willingly hosts in the most secluded and intimate folds and holes of our body. High time, given that the power house of eukaryotic cells, mitochondria, are but ancient bacteria.

Reports have been published on the association of some bacterial strains in the guts (gut bacteria being by far the most represented microbial community) on human physiology (infant growth....) and somatic diseases (obesity, alcoholism, irritable bowel syndrome and rheumatoid arthritis) and brain diseases (depression, autism, multiple sclerosis, Parkinson's disease, Alzheimer's disease).

Reports have multiplied of animal experiments showing that some natural features (resistance to infections and carcinogenic exposures) can be transferred from one animal to another by gut bacteria transfer. Not only, but it is increasingly clear that a number of environmental events can affect the bacterial composition of gut flora (diet, physical exercise, exposure to cold), that the animals with the modified version of the gut flora acquire specific physical and behavioral features (weight changes, sociability, motor impairments), and that such features can be transferred to non-exposed animals by gut bacteria transfer.

How much of these results is journalism hype and how much is sound science? How close (or how far for that matter) are we from gut flora manipulations in humans to protect from dreaded brain diseases?

The 4th edition of this conference, which previously attracted 500 participants from Europe, will try and give an answer thanks to a panel of renowned national and international experts on the microbiota and the brain.

AIMS

To update physicians and scientists on the latest discoveries on the role of the GMB in neuropsychiatric and neurodegenerative diseases.

To identify leads for microbiota-based interventions for brain diseases.

PUBLIC

Physicians, neuroscientists, biologists.

PRESENTATION FORMAT

Fully online. Registered videoconference.

PROGRAM

8.00 Welcome Address

Giovanni B. Frisoni

NEURODEGENERATIVE DISEASES AND MICROBIOTA

Moderator: A. Cattaneo

8.15 Understanding relationships between the microbiome and cognition: opportunities for cognitive enhancement

Con Stough, Australia

8.30 Potential Role of Gut Microbiota in ALS Pathogenesis and Possible Novel Therapeutic Strategies

Letizia Mazzini, Italy

8.45 Gut microbiome composition and function in persons with Parkinson's disease

Rejko Kruger, Luxemburg

9.00 Gut microorganisms act together to exacerbate inflammation in spinal cords

Hiroshi Ohno, Japan

9.15 Q&A

MAIN LECTURE | PERSONALISED MEDICINE AND MICROBIOTA

Moderator: J. Schrenzel

9.35 Host Micro Biome Interactions in Health and Disease

Eran Elinav, Israel

10.05 Q&A

10.15 Break

TECHNOLOGICAL BREAKTHROUGH

Moderator: J. Schrenzel

10.30 An innovative organ-on-a-chip platform to study the microbiota–gut–brain axis in neurodegeneration

Carmen Giordano, Italy

- 10.45 Engineered phages as personalized precision antimicrobials
Samuel Kilcher, ETH Zurich

****END OF MORNING SESSION****

MAIN LECTURE | MICROBIOTA AND REURODEVELOPMENT

Moderator: *M. Marizzoni*

- 16.30 The maternal microbiome modulates fetal neurodevelopment
in mice
Helen Vuong, California
- 17.00 Q&A

INSIGHT OF BRAIN DISEASES | MICROBIOTA MECHANISTIC INTERACTION WITH ANIMAL MODEL AND CLINICAL STUDIES

Moderator: *G. B. Frisoni*

- 17.10 Pathways underlying the transfer of autistic behavior from
humans to mice
Sarkis K. Mazmanian, California
- 17.40 The gut microbiota modulates central and peripheral innate
immunity in Alzheimer's disease
Laura Cox, Massachusetts
- 17.55 The bidirectional link between CNS and gut microbiota in
epilepsy and other neuropsychiatric diseases
Pasquale Striano, Italy
- 18.10 Microbiota transfer therapy as potential treatment for children
with autism spectrum disorder?
Rosa Krajmalnik-Brown, Arizona
- 18.40 Q&A

CONCLUSION

Giovanni B. Frisoni

ORGANIZERS



GIOVANNI B. FRISONI (Faculty of Medicine & University Hospitals of Geneva)

GBF is a clinical neurologist. His recent interests encompass the use of Alzheimer's imaging and CSF diagnostic biomarkers in the clinic and the role of the gut microbiota in the pathogenesis of Alzheimer's disease. (<https://www.unige.ch/medecine/migrg/fr/groupes-de-recherche/935frisoni/>)



JACQUES SCHRENZEL (Faculty of Medicine & University Hospitals of Geneva)

JS is Head of the Bacteriology and of the Genomic Research Laboratories (www.genomic.ch). He is recognized for his work to translate molecular technologies to clinical microbiology.



ANNAMARIA CATTANEO (IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli)

AC is the Head of the Laboratory of Biological Psychiatry, at the IRCCS San Giovanni di Dio- Fatebenefratelli, and Assistant Professor at the University of Milan. She is coordinating -omics and bioinformatics analyses to identify biomarkers associated with illness and treatment response in psychiatric disorders and Alzheimer's Disease. She is leading several national and international projects focused on i) the role of stress or exposure to adversities on the future vulnerability later in life;

ii) on the identification of biomarkers of treatment response and iii) on the role of the gut microbiome on central functions.)"

SCIENTIFIC BOARD

Moira Marizzoni, Claire Chevalier, Benjamin Tournier.

POST GRAD CME

CME credits will be requested to: Association des médecins du canton de Genève, FAMH Medical Laboratories of Switzerland, Swiss Neurological Society, Swiss Professional Society of Geriatrics, Swiss Society of Gastroenterology, Swiss Society of General Internal Medicine, Swiss Society of Psychiatry and Psychotherapy and Association Suisse des Neuropsychologues.

INFORMATION

Registration: microbiote-geneva.org