

**CANDY**

# Comorbid Analysis of Neurodevelopmental Disorders and epilepsy

General presentation of the project



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 847818. The views expressed here are the responsibility of the authors only. The EU Commission takes no responsibility for any use made of the information set out.



# Research project investigating the underlying mechanisms of co-existing neurodevelopmental conditions\* and epilepsy

\*such as autism, attention-deficit-hyperactivity disorder (ADHD) and intellectual disability (ID)

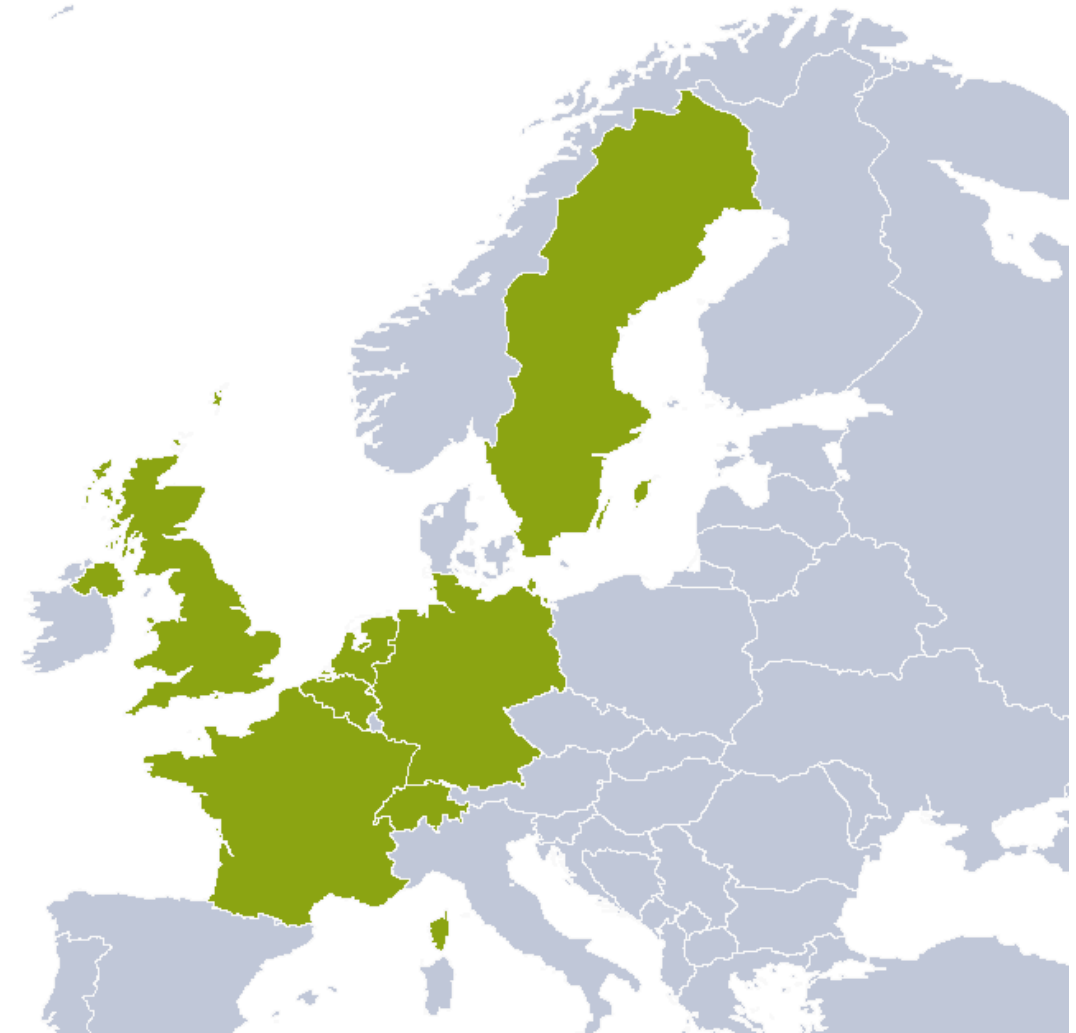


# Facts & figures

- 16 partners in 7 European countries
  - 12 academic and other public services
  - 2 patient organisations
  - 1 SME, 1 project management provider
- Lead: Prof. Jan Buitelaar, Radboudumc Nijmegen
- Funding: 6 Million € - from the European Union (Horizon 2020)
  - GA no. 847818
- Duration: 5 years
  - From January 2020 to December 2024



# The CANDY Consortium – 16 Partners

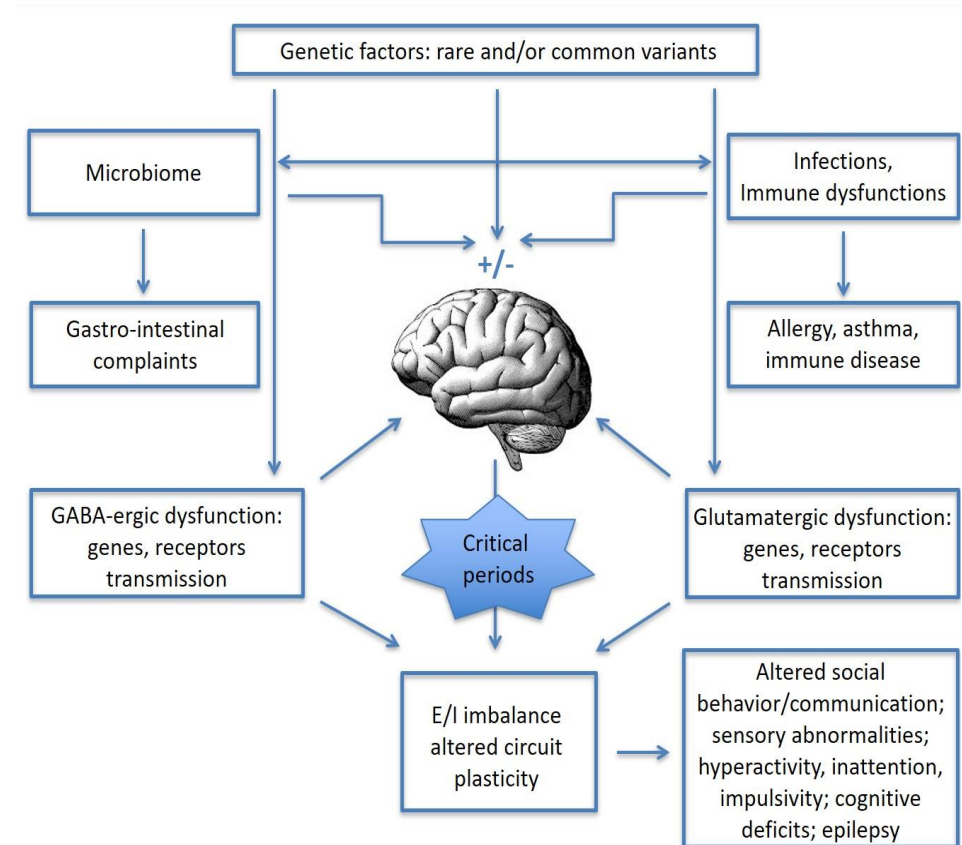




# Overall goal & Objectives

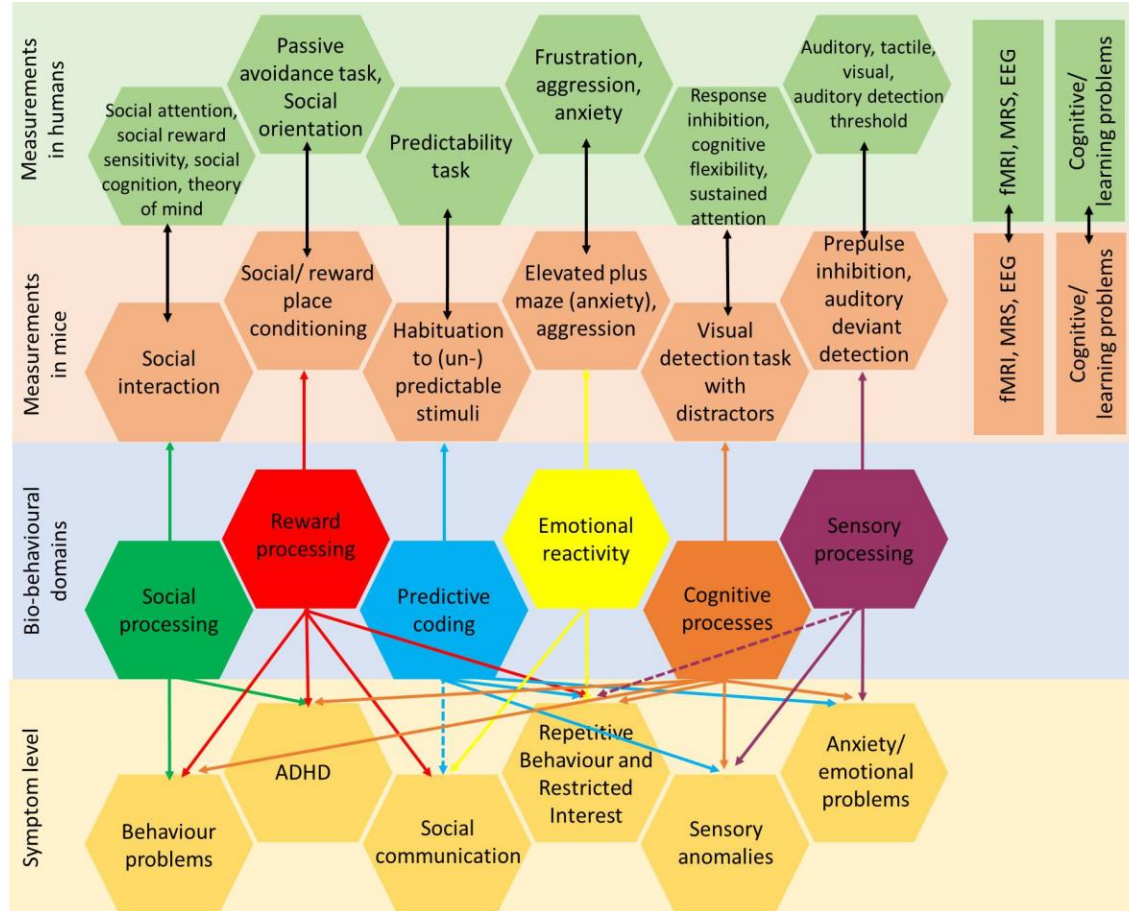
Improve the understanding of the crosstalk between **genetics**, **immune activation/ inflammation**, and **microbiome**

- Elucidate the causal mechanisms that underlie autism, ADHD, ID and epilepsy
- Deliver novel biomarkers to guide early diagnosis and prevention, stratification and treatment monitoring
- Develop new strategies for prevention and treatment of autism, ADHD, ID, and epilepsy
- Open-up new avenues for research in autism, ADHD, ID, and epilepsy.





# Methodology



## Genome-wide sequencing

- ○ Existing cohorts
  - Preschool cohort with ID, ADHD and/or epilepsy
  - Multiplex family cohort
- ○ SHANK3 knockout mice
  - NRXN1 knockout mice
  - PTC1D1 knockout mice

- Inflammatory factors
- Microbiome



# Our impact

## Societal and economic impact:

- Health promotion and decrease of costs by developing, testing and implementing new effective and personalised treatments based on the underlying pathophysiology
- Prevention of newly developing comorbidities, by targeting 'sensitive periods'

## Clinical impact:

- Improving the clinical care of comorbidities through patient stratification and psychoeducation

## Scientific impact:

- Better understanding of disease pathways and causal mechanisms common to neurodevelopmental disorders, epilepsy and other comorbidities

## Economic impact:

- Growth of European diagnostics and pharmaceutical SMEs and industry (creation of jobs, increased services and products, and revenues)



# CANDY

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