

# EarlyFOOD: “Long-term impact of gestational and early-life dietary habits on infant gut immunity and disease risk”



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## ▪ Consortium:

To fulfil the project we have created a consortium of 5 interdisciplinary partners from public organizations (hospital, university and Inserm) in 4 countries. The consortium has highly complementary expertise in the fields of pediatrics, epidemiology, metabolism, toxicology, neurology, microbiology, immunology, bioinformatics, biostatistics and data management technology.

## ▪ Introduction:

Humans are born virtually sterile and are immediately colonized by microbes vertically transmitted from their mother. Microbial colonization occurs throughout the length of the human gastro-intestinal (GI) tract from the oral cavity to the rectum. The density and composition of gut microbial communities depend markedly on dietary habits, host secretions, environmental conditions, substrate availability, and the organization of the gut wall. Both gestational and early-life dietary habits for mother and child have pivotal impact on infant health, including gut colonization and metabolism as well as immunity. From birth it is evident that diet has an important impact on the development of the microbial communities in the gastrointestinal tract.

## ▪ Goal:

The proposed program aims to exhaustively analyze the long-term health impact on children exposed to antibodies, metabolites and toxins found in breast milk and dietary products.

## ▪ Expected impact:

- ✓ Identification of high-risk dietary profiles and environmental factors, such as pollutants and life style, may impact on food safety and quality.
- ✓ prognostic and diagnostic tools based on an individual’s metabolomics, immune-microbial and exposome profiles associated with dietary habits.
- ✓ Guidance in future health care campaigns in Europe and beyond, and may direct gut and vaginal microbiota therapy (prebiotics, probiotics and transplantation) in the perspective of preventing metabolic and allergic diseases as well as neurobehavioral pathology.
- ✓ Benefits on individual health and quality of life, but also the socio-economics of public health care systems.

