Project Title:
Non-Communicable diseases Stratification and Integration: a clinical to basic science approach.

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Summary: (1000 characters)

Today the epidemically spreading Non-Communicable Diseases (NCDs), also known as chronic diseases, are considered a priority by the WHO 2008 Action Plan, the EU 2010 Council and the 2030 Agenda for Sustainable Development adopted in 2015 by the United Nations which recognizes NCDs as a major challenge for sustainable development.

The aetiology of NCDs from which the MEtabolic DIseases Research (MEDIR) group focus on metabolic diseases (i; ii) is complex and implicates several organs, at both early and late stages of the disease, involving different sets of co-morbidities in subpopulations. Strengthening Systems Medicine approaches in this field is an important step towards the identification of questions to be target by basic science. This project aims at using System Medicine methodology to analyse large population datasets at National and International level based on deep phenotyping to determine criteria for disease stratification that can be useful in real world clinical settings of precise medicine (iii). The project will focus on a multiparametric approach to dissect pathophysiological patterns of the Obesity/Diabetes complex by addressing the interconnections in the gut-brain-liver axis.

Bibliographic references:

i. Insulin resistance induced by sucrose feeding in rats is due to an impairment of the hepatic parasympathetic nerves. Diabetologia, 2005. 48(5): p. 976-83.

ii. Mechanisms by which the thiazolidinedione troglitazone protects against sucrose-induced hepatic fat accumulation and hyperinsulinaemia. Br J Pharmacol, 2016. 173(2): p. 267-78.

iii. New insights into functional regulation in MS-based drug profiling. Sci Rep, 2016. 6: p. 18826.