# Objective Monitoring of the Obesogenic Behaviour and the Role of the Local Environment. New methods for collecting evidence.

Dr. Anastasios N. Delopoulos

*Aristotle University of Thessaloniki, Greece*

**Abstract**

The way we eat and what we eat, the way we move and the way we sleep significantly impact the risk of becoming obese. These three aspects of behaviour decompose into a long list of personal behavioural elements including our food choices, eating place preferences, transportation choices, sleeping periods and duration etc. Most of these elements are highly correlated in a causal way with the conditions of our local urban, social, regulatory and economic environment. In this presentation we will examine technological solutions that have been developed in order to (a) objectively monitor a matrix of obesogenic behavioural elements, (b) acquire information related to the local environment conditions. The first rely mostly on signals captured by very simple wearable devices (accelerometers, gyroscopes, GPS) embedded in smart phones and smart watches while the latter resort to public sources, like maps, and to the data of statistical authorities. Based on this infrastructure, we are ready to link the obesogenic behaviours with the local environment; this creates a wealth of evidence for medical experts, epidemiologists, urban designers, obesity experts and public health authorities. Apart of the acquisition technologies that will be presented, we will investigate (i) The scalability of population engagement approaches that rely on the citizen scientist concept in order to collect behavioural and use of urban resources data in an efficient and still accurate and representative way. (ii) How these data (in raw and processed form) can be standardized and be communicated to interested scientist (statisticians, epidemiologists, urban designers, etc) and community stakeholders without breaching privacy. (iii) How sensory data and their derivatives can be converted and/or combined with non aggregated microdata; benefits and constraints of this approach.