Health can be seen as a dynamic state in which the ability to adapt can be an indicator of health status. In daily life, people cope continuously and subconsciously with changes in their environment, including the intake of suboptimal foods or levels of physical exercise. Their ability to adapt can act as an indicator for maintenance or improvement of physiological function. The term ‘phenotypic flexibility’ expresses the cumulative ability of overarching physiological processes (e.g. metabolism, inflammation, oxidation) to return to homeostatic levels after short term perturbations.

This presentation will outline research, focused on quantifying health from the perspective of phenotypic flexibility as methodology to assess health effects from food and nutrition. Our research started with phenotypic flexibility evaluations on group level, towards the differentiation between responders and non-responders based on baseline phenotypic flexibility status, towards personalised nutrition from the perspectives of phenotypic flexibility.