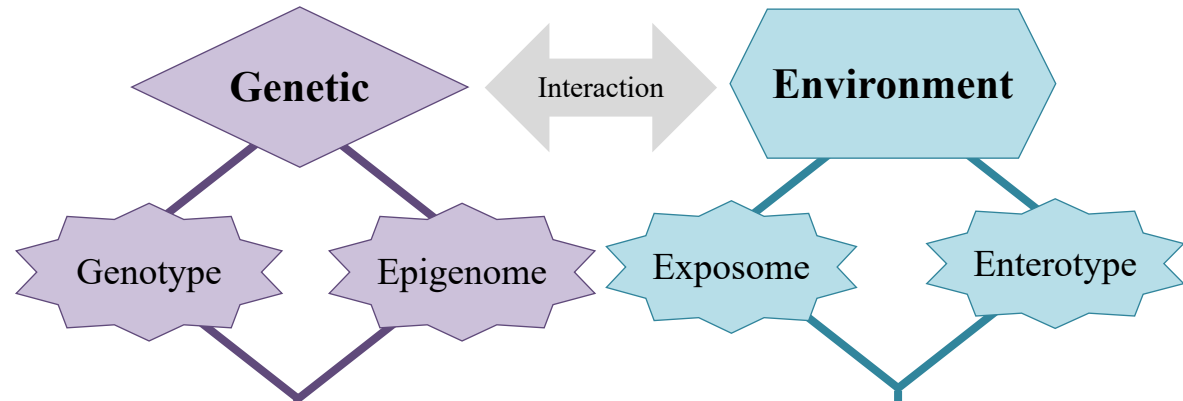


Molecular phenotyping and data integration

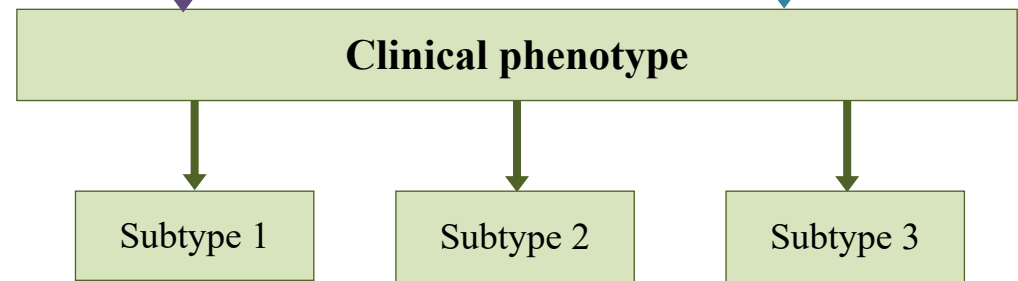
Molly McCue

Risk factor-based disease sub-classification

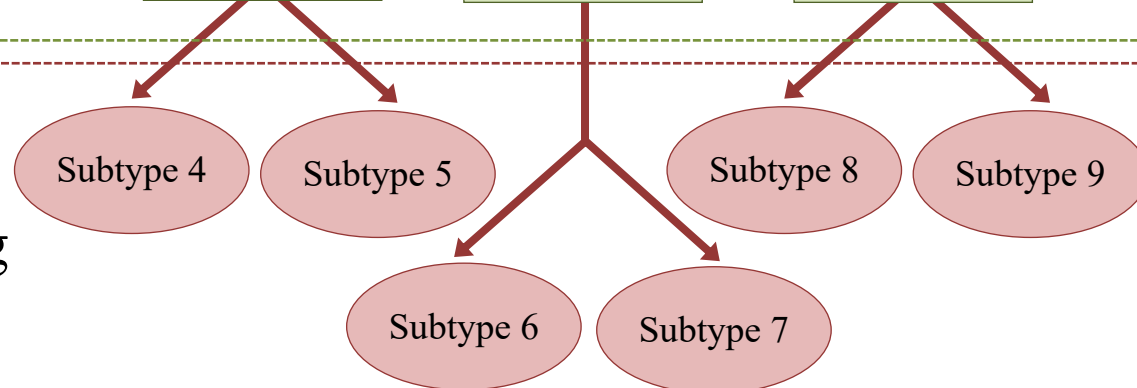


Phenotype-based disease sub-classification

Clinical phenotyping



Molecular phenotyping



Environments

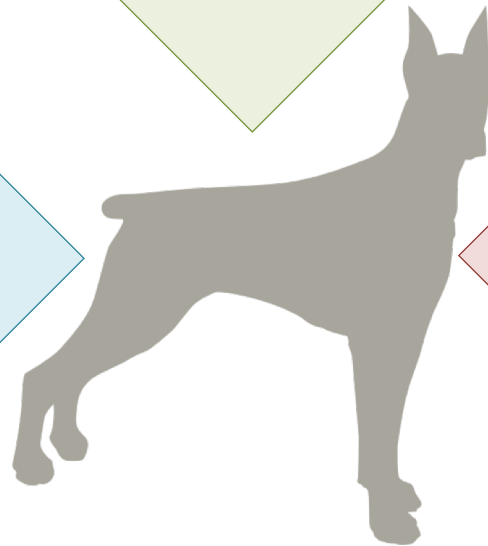


General External

Shared infectious disease exposure, air pollution, weather, climate change

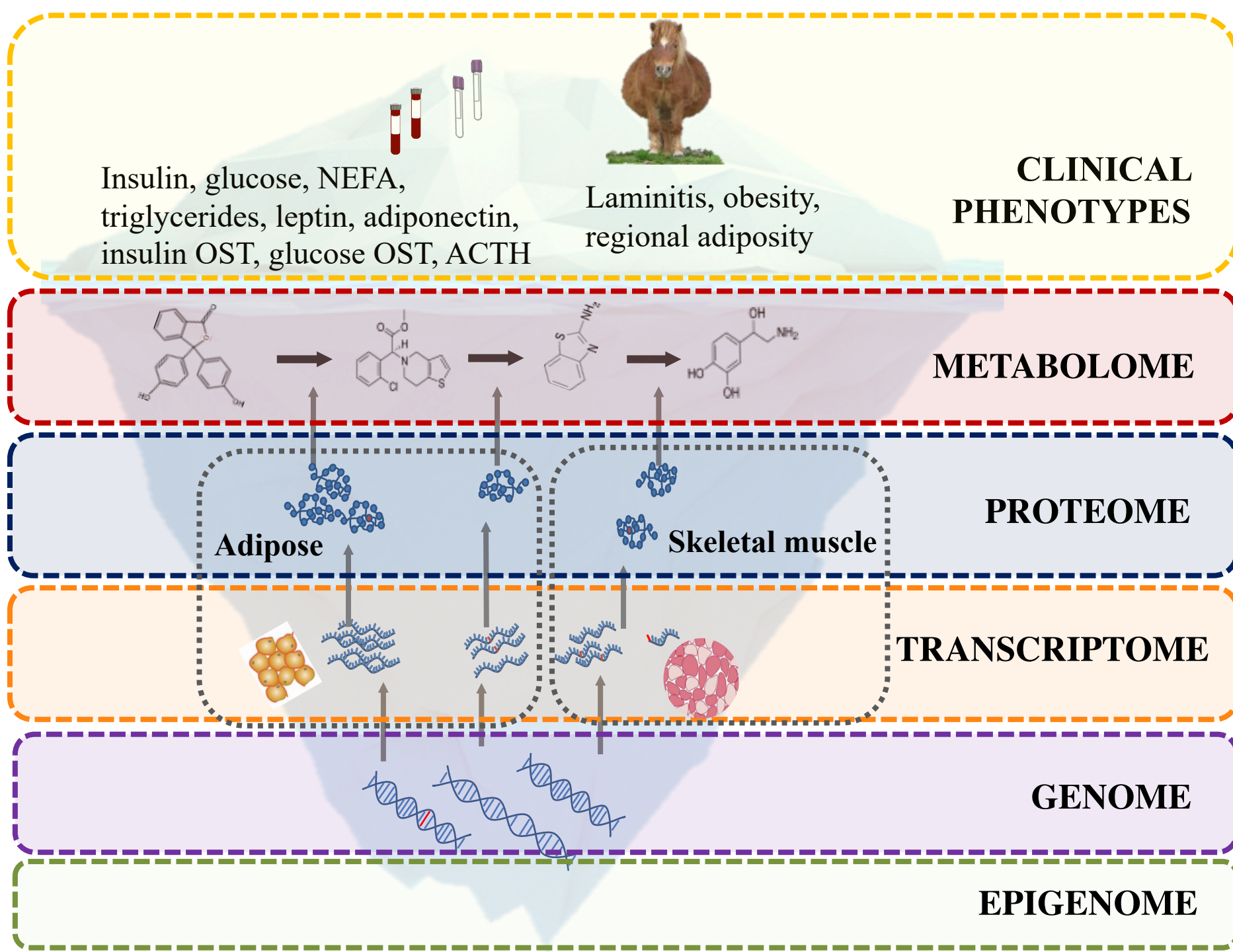
Internal

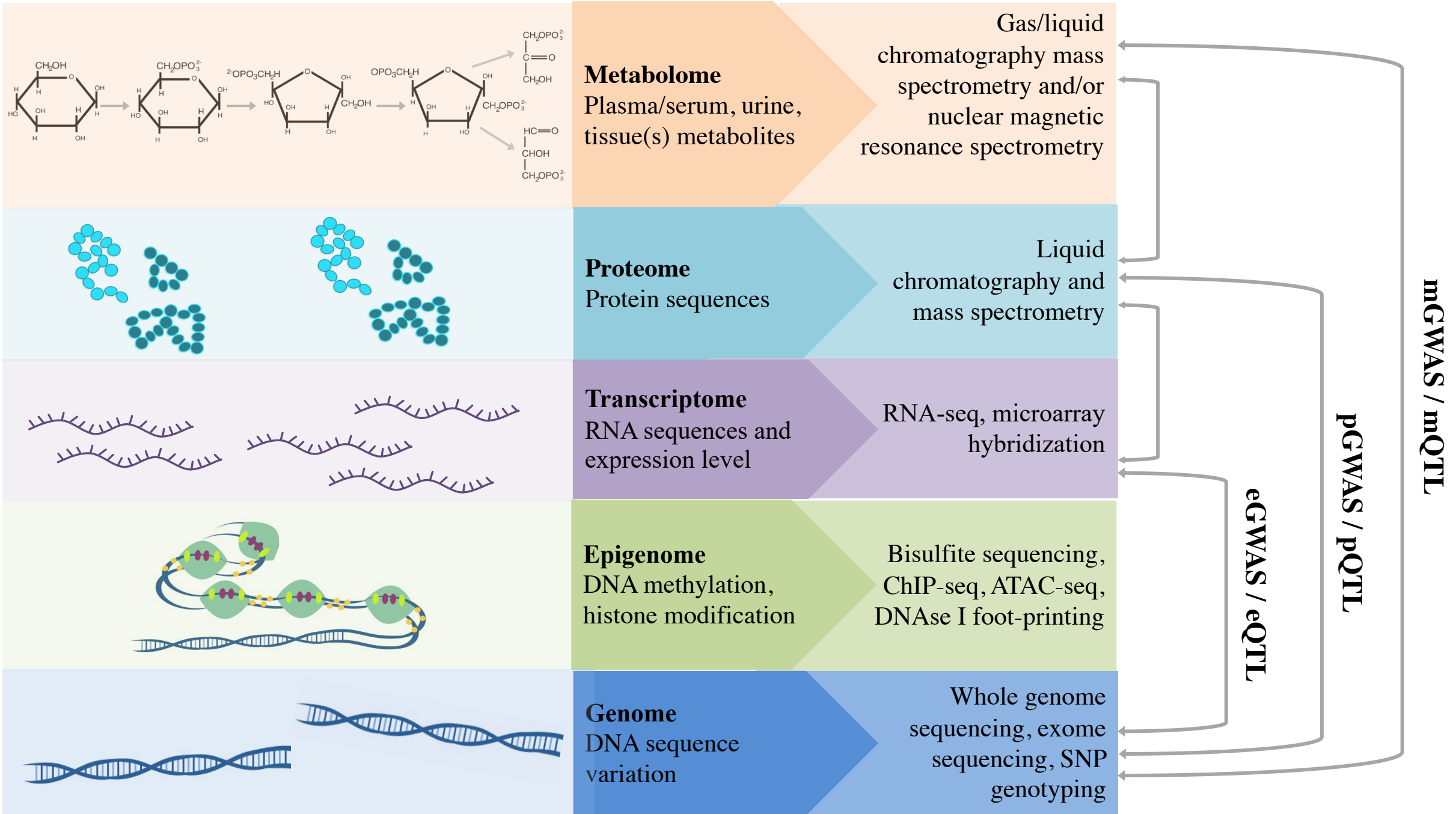
physical activity, metabolism, inflammation, oxidative stress, body morphology, aging, endogenous hormones, microflora (i.e. microbiome, virome, fungome)



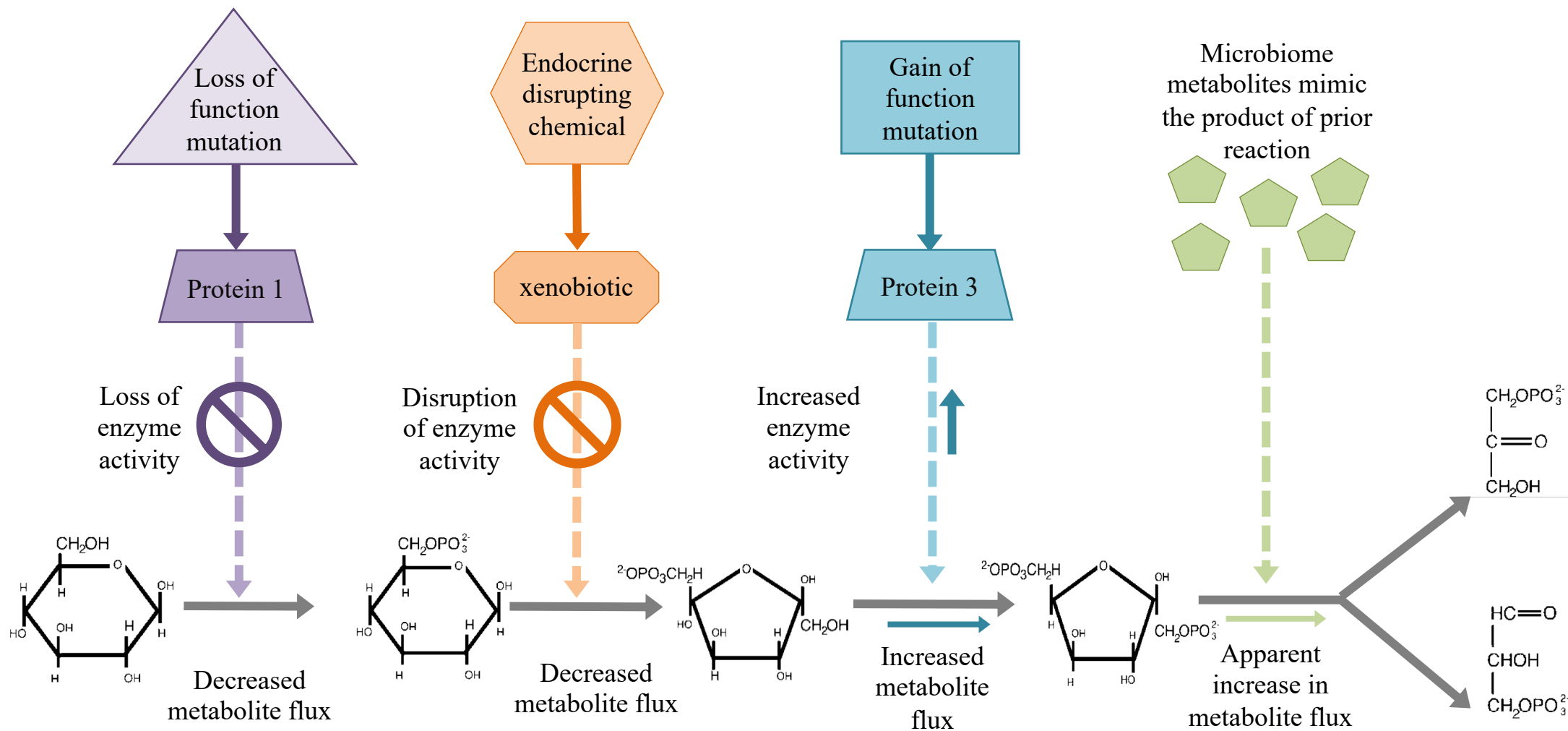
Specific External

Infectious agents, chemical contaminants in food, water are proximate environment, occupation (e.g., pet, working animal, feedlot animal etc.), medication exposures

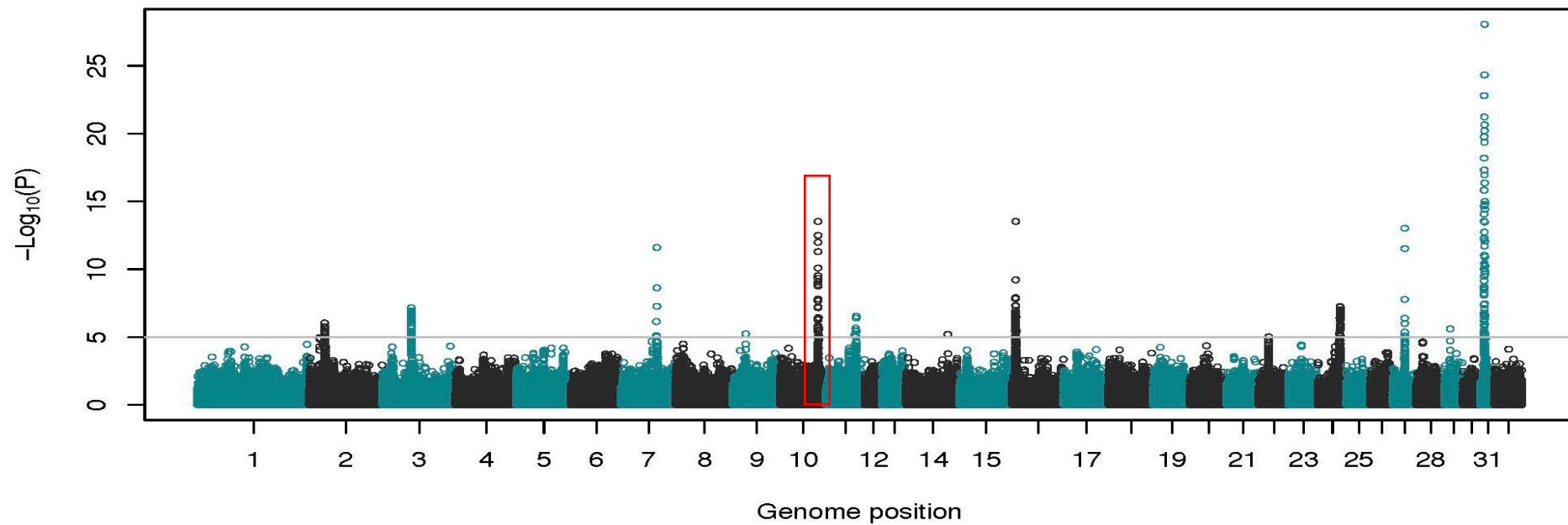




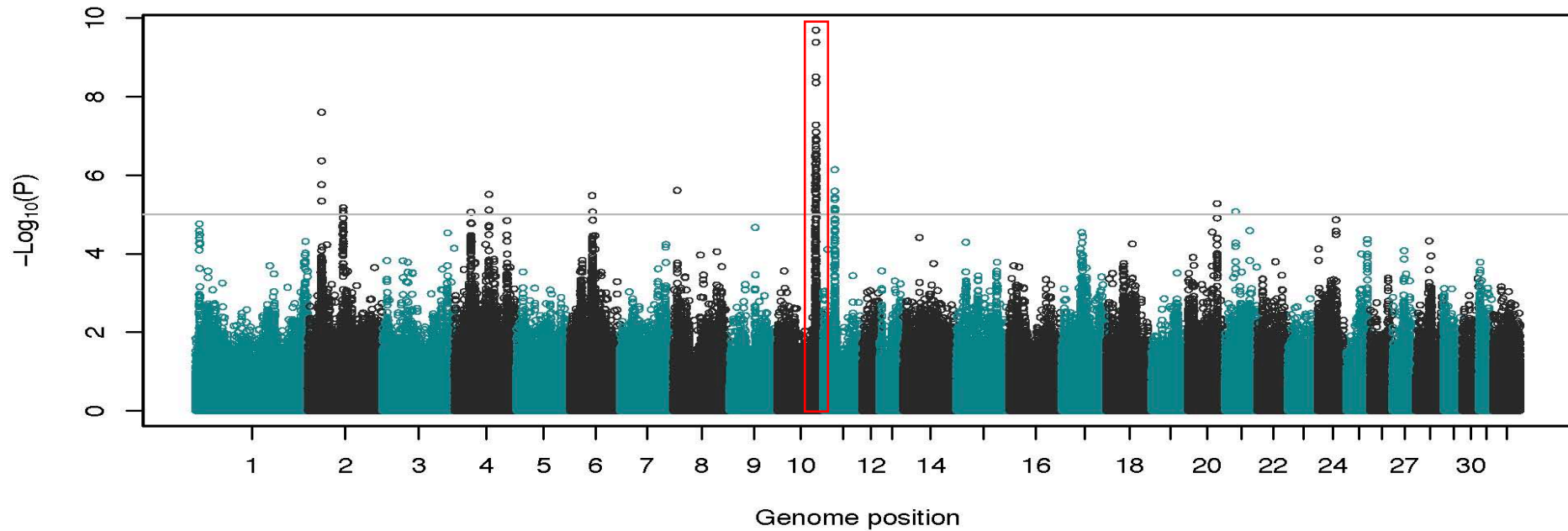
Metabolomics



metabolite V83



**insulin post oral
sugar test**



Co-analysis of molecular components

