

Statistical analysis of multivariate (multi-center and/or longitudinal) genetic association data

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The project aims at harmonizing the quality control and statistical analysis of a joint Nordic control database for genetic association studies, and contributing to making this resource accessible online and compatible with other NCoEDG infrastructures. This database will pool together NCoEDG multi-center control data from various case-control studies with genome-wide SNP scans readily available on all the controls. These data will be a unique resource on the Nordic scale, also available for further linkage to other resources in various populations. Methodological issues regarding the use of heterogeneous populations and biomaterial will be addressed.

The second goal is to set up a statistical scheme for studying joint effects of genes and environmental factors using the Mendelian randomization for elucidating causal pathways, with asthma genetics (NCoDG phenotype) serving as the empirical model. Modeling of pathways and causal effects of modifiable lifestyle factors is one of the burning methodological issues in genetic association studies, and will be further considered in this project.