

Applicant

Dr. Pirro Hysi, King's College

E-mail Address

pirro.hysi@kcl.ac.uk

Project Title

A multiomics approach to understanding primary open angle glaucoma

Project Summary

Glaucoma is a common age-related disease caused by a combination of adverse external factors and inherited genetic susceptibility. Genetic association studies discover only immutable risk factors, which only indirectly can be targeted by novel therapies. Much of the risk is caused by non-heritable, or "environmental" factors whose effects accumulate in the body and in the eye and result in disease. These factors can switch on and off parts of the genome at different times and in different tissues via chemical modifications of DNA (known as epigenetics), which often result in synchronized metabolic alterations. This project will track the complex physiopathological processes that lead to glaucoma (or closely related clinical proxies such as intraocular pressure) by statistically evaluating how specific inheritable genetic risk profiles interact with markers of ageing and environmental exposures (DNA methylation).

Keywords

Glaucoma, Ocular disease, Epidemiology, Genomics, Epigenomics, Metabolomics