WTDTP Projects for September 2022

Project Reference: T23/36

Project Title: **Predicting disease risk in African populations**

Theme(s): Cross-Theme Project - Themes 2 and 3

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Project Summary: It is becoming increasingly feasible to use a person’s DNA sequence to predict their risk of developing diseases such as diabetes and heart disease. However most research to date has been conducted in European ancestry populations, and studies in other populations, particularly those of African ancestry, have been less encouraging. In order to address this discrepancy, it is necessary to both increase the amount of research data available from African populations, and to understand and address the fundamental reasons why results from European ancestry do not translate well to the African setting.

This project will use newly collected data from thousands of people in several African countries including Uganda, Malawi, South Africa and Nigeria. We will evaluate risk predictors developed in European ancestries across different African populations to understand the factors driving their accuracy, with a focus on cardiovascular traits and kidney disease. We will explore the use of predictors developed from African diaspora, especially African Americans, and compare their usefulness between different African populations. We will develop and apply methods to combine information across multiple ancestries to obtain prediction models with global relevance. In so doing we will establish prospects and guidelines for achieving equitable applications of genetic risk prediction.