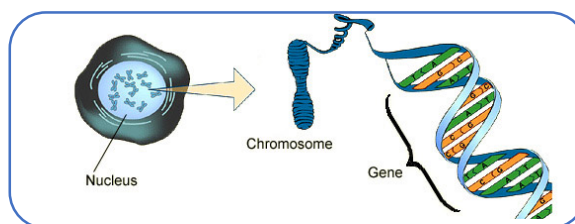


## BASIS Genome Study

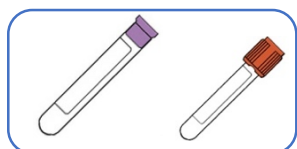
**Which are the genetic risk factors associated with neurodevelopmental disorders?** To what extent can they be transmitted? Are they also responsible for typical variations in behavioral traits, such as social perception abilities, attention and impulsiveness, social responsiveness, stress and anxiety? The worldwide scientific community is trying to address these complex questions not only to improve our knowledge of the genetics of psychiatric diseases but also to identify their biological causes. We are proud to claim that **the BASIS team, its collaborators and the families participating in our projects are also contributing to this ambitious objective!**

The **BASIS – Genome Study**, also called **gBASIS**, is a large project aiming to understand which is the link between genetics, brain development and autism. The valuable contribution of the families who participated in previous phases of the British Autism Study of Infant Siblings will allow us to investigate the extent to which genetic features associated with Autism Spectrum Disorders explain the range of individual differences in behavioral characteristics, measured in family members who did or did not develop the disorder. We are also going to link genetic features to early neural signs of developmental disorders, measured at the Birkbeck Babylab when the children were younger. This will help to understand the causality link between genetic variations and neurodevelopment!



*Genes carry information that determines our traits, which are features or characteristics that are inherited by parents. Genes are composed by DNA, which is contained within the nucleus of our cells.*

For this study, we are asking for permission to collect blood and saliva samples from all the family members of the infant siblings who participated in BASIS Phase 1 and 2. **Blood and saliva samples can be used to study DNA**, the genetic code containing specific instructions, telling the cells in our body



*Tubes for blood sample collection, used to study DNA (lavender lid) and RNA (red lid).*



*Tubes for saliva sample collection, used to study DNA.*

how to grow and what job to do. A blood sample contains many different elements (DNA, RNA, proteins and metabolites involved in biochemical reactions...) which can be studied to determine if there are any hallmarks of developmental disorder. A saliva sample can be used to identify common and rare variations in the DNA sequence; by looking at the frequency of these variations in subjects with autistic traits we expect to identify which genetic signatures are involved in typical and atypical neurodevelopment.

So far, families from all over the UK displayed their interest in participating in the study. A member of the Birkbeck team and an experienced phlebotomist **recently started visiting the families at home** to collect DNA samples. To associate the genetic data with other psychological and social characteristics, we are also sending out, via post, **questionnaires on various behavioral traits**, to be completed by parents referring to themselves and also to each of their children. Together with the questionnaires, all the family members will be invited to complete a validated **online test on social perception skills**. We aim to complete the data collection for gBASIS by the end of the year, and to be able to update you soon on our –we believe- exciting findings!