

Fast facts about neural tube defects



One of the most common congenital anomalies, affecting >300,000 neonates annually worldwide



Due to improper neural tube closure during the 4th week of pregnancy



Associate with fetal growth restriction, preterm birth, & poor growth & development postnatally



Folic acid fortification & supplementation prevent ~50% of cases of NTDs... yet:



The challenge

Neural tube defects & their comorbidities persist because we have an incomplete understanding of their causes.

Contributing factors include:



Nutritional deficiencies, including vitamins B9 (folate) & B12

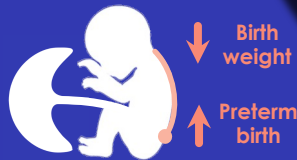
Genetics, immune dysregulation, diabetes & medications

The opportunity

The placenta may provide a window to understand neural tube defects & their comorbidities:



Environments permissive of NTDs may also influence early placental development



Placental phenotypes may provide insights into the causes of NTDs & their comorbidities

The impact

Understanding placental (mal)development in pregnancies with fetal neural tube defects is critical for:



Determining how to improve infant survival & developmental trajectories



Identifying new target candidates to explore for neural tube defect prevention