

CLINICAL POPULATIONS



Characterize the functional differences between ASD and TD populations

- Human genetics
- MRI, EEG
- Behavioral characterization

Advantages: Highly relevant to pathology

Disadvantages: Difficult to manipulate system

NON-HUMAN PRIMATE MODELS



Electrically and/or pharmacologically disturb system to recreate ASD symptomatology

- Pharmacological manipulation
- Environmental manipulation
- MRI, single neuron recording

Advantages: Good correlation with many human behavioral paradigms; ability to manipulate system directly

Disadvantages: Genetic manipulation difficult; Cannot model all aspects of ASD symptomatology

MOUSE MODELS



Genetically and/or pharmacologically disturb system to recreate ASD symptomatology

- Knock ins, knock outs
- Environmental manipulation
- Optogenetics

Advantages: Highly amenable to mechanistic manipulation; rapid development

Disadvantages: Limited homology between human and mouse brain and behavior