

Controlling more than just your thoughts, your brain is involved in functions that seem simple, such as eating and breathing, as well as functions that are complex like your interactions with the wider world, processing emotions, and learning new information. While many people think about genes contributing to our physical features, such as eye color or height, some genes influence how our brain develops and continues to function during your lifetime. These genes can influence how your brain is shaped, how you develop, how you process and interact with the world around you, and how your brain communicates with your body. These genes help control the internal mechanics that build all of the tissues in our brain and then how the brain communicates through neurons and the internal network.

Genetic conditions that affect the brain may do so in a variety of ways. These conditions may impact the overall development, structure, or size of the brain to whether the brain is able to produce or utilize important proteins to function and communicate to the many interactions with the other factors to form complex conditions like dementia and Autism spectrum disorder to much more that we are still uncovering.

As researchers continue to delve into the mysteries of genetics and your brain, here are different categories and examples of some genetic brain conditions:

- Neurodevelopmental
  - [Autism spectrum disorder](#)
  - [Intellectual disability](#)
  - [Fragile X syndrome](#)
- [Epilepsy](#)
- [Neurometabolic](#) (e.g. phenylketonuria, PKU)
- [Neurodegenerative](#)
  - Huntington's disease (HD)
  - Amyotrophic Lateral Sclerosis (ALS)
  - Frontotemporal dementia (FTD)
  - [Alzheimer's disease](#)
  - Parkinson's disease
  - [Leukodystrophies](#)
- Psychiatric
- Structural brain disorders (e.g. agenesis of the corpus callosum, holoprosencephaly, lissencephaly, microcephaly, schizencephaly)

Click [here](#) to learn more about scheduling a genetic counseling appointment for questions about pediatric or adult genetic conditions.

**Additional Resources**

[National Institute of Neurological Disorders and Stroke](#)

[US National Library of Medicine: Brain Malformations](#)

[US National Library of Medicine: Genetic Brain Disorders](#)