



Neurodevelopmental Disorders

Defining Terms and Understanding Basic Concepts

How do all these terms interrelate?

Intellectual Disability
 Autism
 Neurodevelopmental Disorder
 Neuromotor Impairment
 Down syndrome
 Developmental Disabilities
 Seizure Disorder
 Mental Retardation
 Cerebral Palsy



What is a neurodevelopmental disorder?

It is a medical disorder affecting (damaging) the neurological system (primarily the brain) during the period of a person's life in which they are experiencing rapid neurological development - from the point of conception to early adulthood.

American Academy of Developmental Medicine and Dentistry 2002



Four Most Common Neurodevelopmental Disorders

- Cerebral Palsy 1 / 455
- Down Syndrome 1 / 700
- Fetal Alcohol Syndrome 1 / 1150
- Fragile X Syndrome 1 / 5000

Centers for Disease Control- 2015

Neurodevelopmental Disorders Feature Complications

Six Primary Complications

- Intellectual disability
- Neuromotor dysfunction
- Seizure
- Behavioral disturbances
- Sensory impairment
- Impaired Communication

Philip B. May, MD – Lee Specialty Clinic



Not Every Individual will Present with All 6 Complications

- Many patients with Cerebral Palsy have severe neuromotor impairment and seizure disorders, but no intellectual disability.
- Many patients with Down syndrome present with intellectual disability and sensory impairment no behavioral complications.



Syndrome-Specific Conditions: Examples

The underdeveloped mid-face and resulting Class III malocclusion (underbite) in the individual with Down syndrome



Syndrome-Specific Conditions: Examples

- The funnel chest seen in some patients with Fragile X
- The joint laxity also seen in Fragile X and other syndromes
- The thin upper lip and elongated philtrum in Fetal Alcohol



Remember This about Intellectual Disability:

- Intellectual disability is not a medical diagnosis.
- Intellectual disability is a primary complication associated with multiple neurodevelopmental disorders.



In Summary . . .

- The better we understand the origins of the challenges faced by those we serve, the better, and more efficiently we can serve them.
- The more efficiently we serve them, the more easily we can both improve their quality of life, and drive down the costs associated with providing the services they need.

