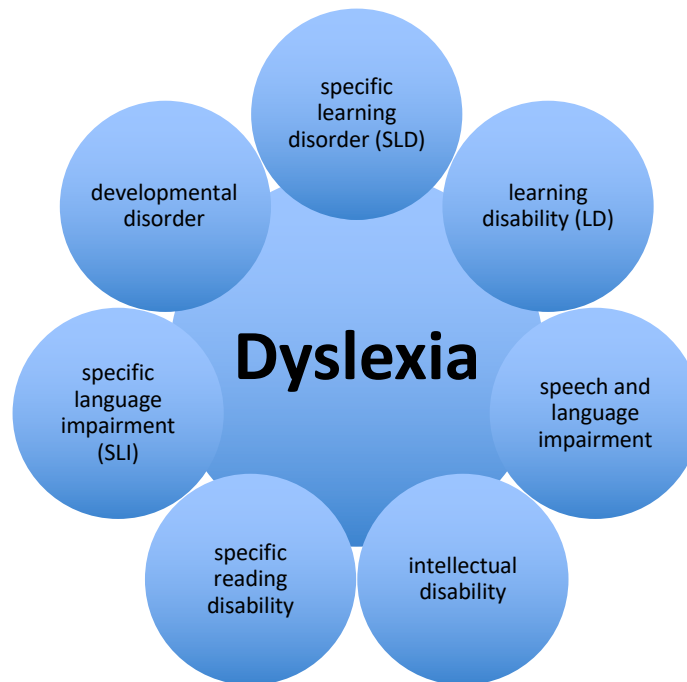


Neurodevelopmental Disorders



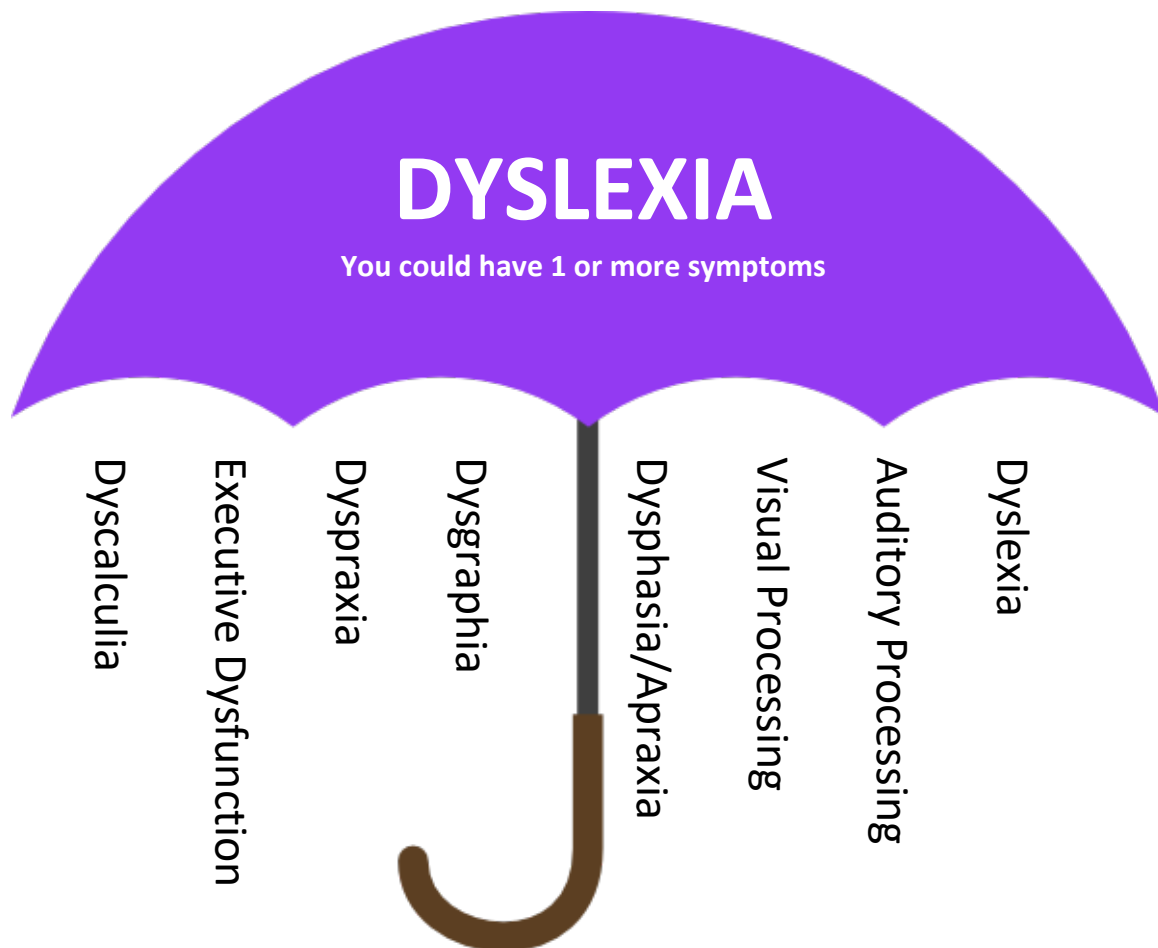
What is Dyslexia or Specific Learning Disorder (SLD)?

- Dyslexia is a neurodevelopmental disorder, or condition that affects brain function and manifests early in development. It causes delays in academic, social, personal, and occupational performance.
- Dyslexia affects 20% of American population.
- Dyslexia is hereditary. Family history can help determine risk factors.
- An educational diagnostician or psychologist diagnoses dyslexia.
- Dyslexia has a narrow and broad definition:
 - Narrow definition = “Dyslexia” refers to a pattern of learning difficulties characterized by problems with accurate or fluent word recognition, poor decoding, and poor spelling abilities.

- Broad definition = Dyslexia is a Specific Learning Disorder (SLD) encompassing 8 subtypes of learning difficulties:
 1. dyslexia as phonological processing disorder
 2. auditory processing problems
 3. visual processing problems
 4. dysphasia/apraxia
 5. dysgraphia
 6. dyspraxia
 7. executive dysfunction
 8. dyscalculia
- People with SLD can have 1, some, or all of the symptoms listed.
- Severity levels range from mild to moderate to severe.
- There are discrepancies between potential and achievement. SLD is an equal opportunity disability, affecting people of all intelligence levels and economic backgrounds.

Dyslexia Umbrella

Adapted from Liz Dunoon

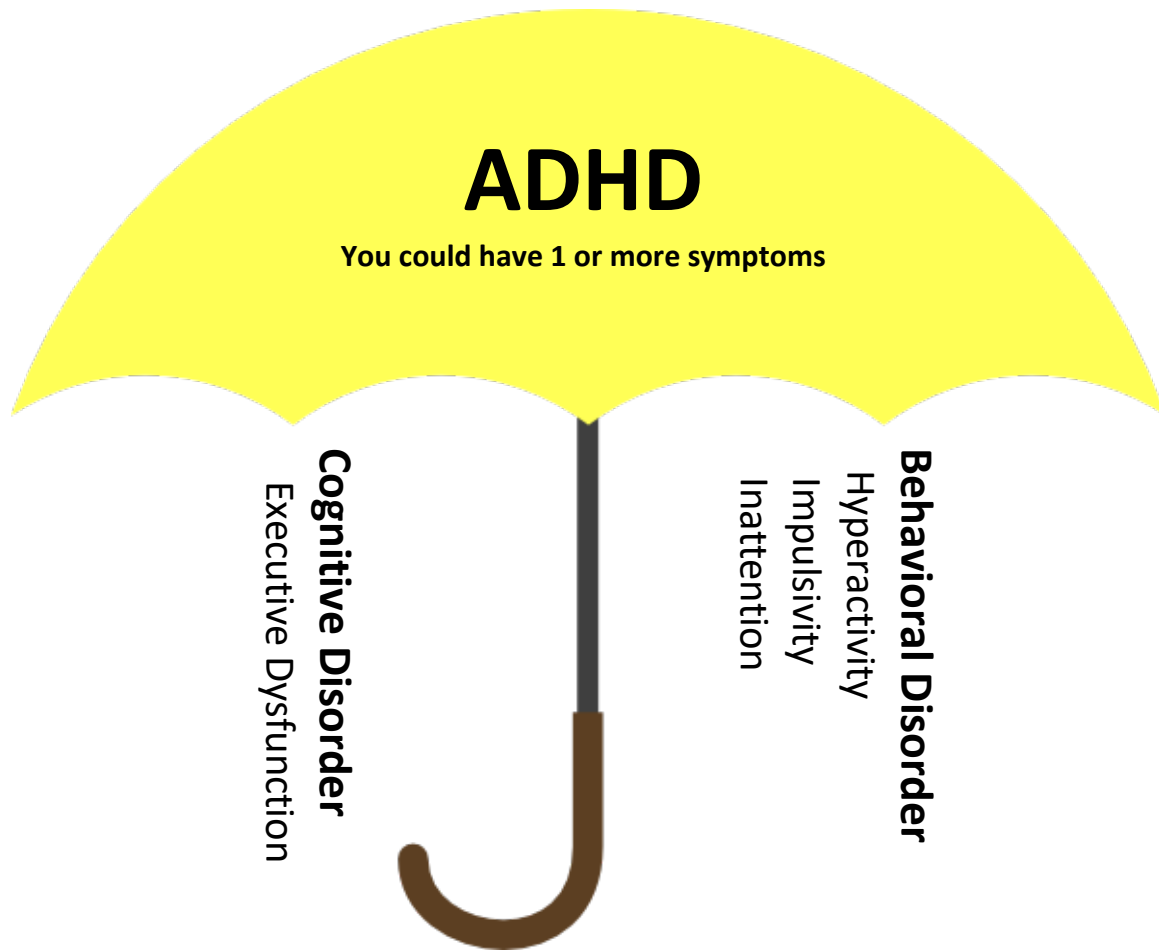


1. **dyslexia** = phonological processing disorder meaning difficulties with reading and spelling despite intelligence
2. **auditory processing** = difficulty with listening and understanding spoken instructions, rhyme, and rhythm
3. **visual processing** = difficulty with orientation, spatial relationships, and direction
4. **dysphasia/apraxia** = difficulty translating thoughts into words
5. **dysgraphia** = untidy handwriting, awkward pencil grip
6. **dyspraxia**, or developmental coordination disorder (DCD) = difficulty with motor coordination
7. **executive dysfunction** = difficulty with sequencing, time, ordering of events, attention, memory, recall, planning, thoughts
8. **dyscalculia** = difficulty with numbers, math symbols, terms, and concepts

What is Attention-Deficit/Hyperactivity Disorder (ADHD)?

- ADHD is a neurodevelopmental disorder.
- ADHD affects up to 13% of American population.
- ADHD is hereditary. Family history can help determine risk factors.
- A psychiatrist or medical doctor diagnoses ADHD.
- ADHD is an umbrella term, encompassing behavioral and cognitive deficiencies:
 - Behavioral/social deficiencies include a pattern of inattention and/or hyperactivity-impulsivity that interferes with function or development.
 - Inattention affects the ability to stay focused on the task at hand, listen attentively, and organize thoughts and materials.
 - Hyperactivity-impulsivity involves the inability to be still, quiet, and wait patiently.
 - Cognitive deficiencies include poor executive functioning, or the ability to organize, schedule, analyze, remember, make decisions, and execute a plan.
- Medication is not a cure-all. It can improve some symptoms, but additional behavioral and cognitive remediation is important.
- ADHD is not a choice! It's a biological dysfunction. People with ADHD are not willfully defiant, rude, or purposefully distracted—their brains work differently.
- Students act 3 years younger than their actual age.

ADHD Umbrella



1. **behavioral disorder** (problems with behavior)

- hyperactivity = fidgeting, can't sit still
- impulsivity = uncontrollable desire to speak or act without thinking
- inattention = trouble paying attention

2. **cognitive disorder** (brain wiring differences)

- executive dysfunction = trouble organizing thoughts and materials

What is Autism Spectrum Disorder (ASD)?

- ASD is a neurodevelopmental disorder.
- ASD affects up to 2.25% of the population or 1 in 44 children.
- ASD is hereditary. Family history can help determine risk factors.
- A psychiatrist diagnoses ASD. A medical doctor can refer patients for diagnosis.
- ASD encompasses social and behavioral deficiencies:
 - social deficiencies include: social communication and social interaction, including social reciprocity, understanding body language, and relationship skills
 - behavioral deficiencies include: restricted, repetitive patterns of behavior, interests, or activities and issues with sensory input
- Severity levels range from mild to moderate to severe, and even profound.
- Symptoms present in childhood and cause impairment in social, occupational, and other important areas of daily functioning.
- Symptoms of ASD are not better explained by an intellectual disability.
- High rate of co-occurrence with other neurodevelopmental disorders:
 - 70% co-occurrence with one other disorder
 - 40% co-occurrence with two or more other disorders
 - 37-85% co-occurrence with ADHD