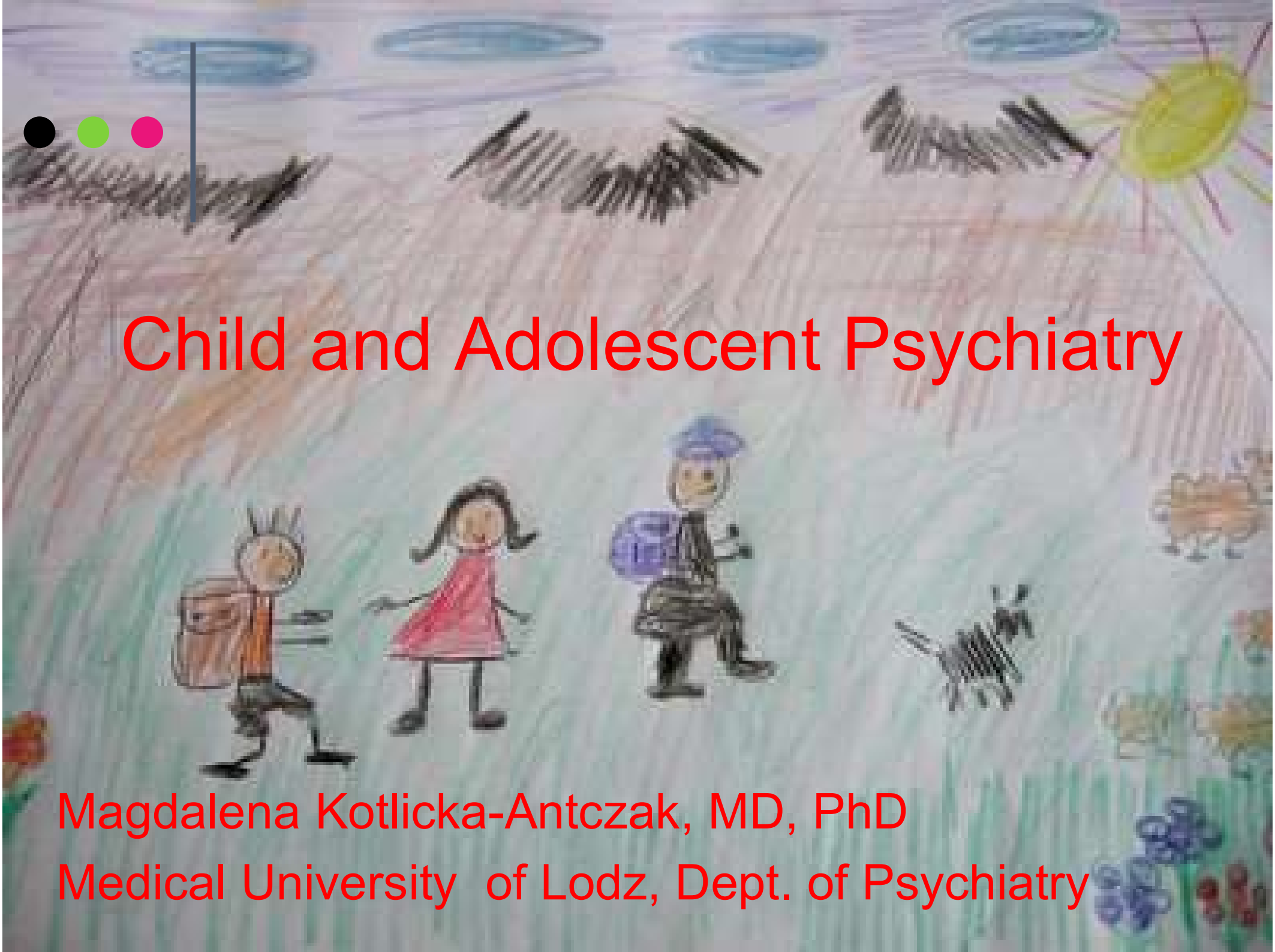


Child and Adolescent Psychiatry

Magdalena Kotlicka-Antczak, MD, PhD
Medical University of Lodz, Dept. of Psychiatry

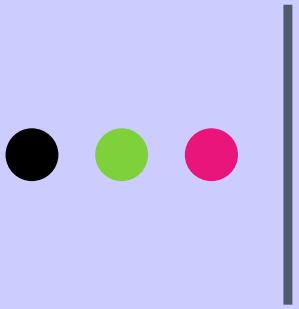
Child and Adolescent Psychiatry

Plan of the presentation

- Specificity of child and adolescent psychiatry
- Review of disorders relatively specific to children and adolescents
- Discussion on selected disorders

Child and Adolescent vs. Adult psychiatry

"Clinicians are likely to be asked "Is this child normal?" or "Is this behavior normal?"…



"Indeed, apart from dementias such as Alzheimer's disease, **there is probably no "adult" disorder from which children are exempt.** Furthermore, **childhood disorders** such as mental retardation or autism **may be diagnosed in adults.**"

Nancy C. Andreasen

Child and Adolescent vs. Adult Psychiatry

- Specificity of diagnoses (e.g. intellectual disability, autism spectrum disorder, ADHD, enuresis...)
- Specificity of the clinical manifestation of disorders that are often diagnosed in adults (mood disorders, anxiety disorders)

Child and Adolescent vs. Adult Psychiatry

Importance of developmental approach !

Growth and maturational processes

↓

Level of emotional, intellectual, social maturity

↓

Flexible norms and criteria


"With this I'm going to control your LIFE!"

Child and Adolescent vs. Adult Psychiatry

Importance of the family/primary care environment

-Structure and safeness of the environment (crime? , violence? , drug abuse?), ability to provide for child's basic physical and emotional needs

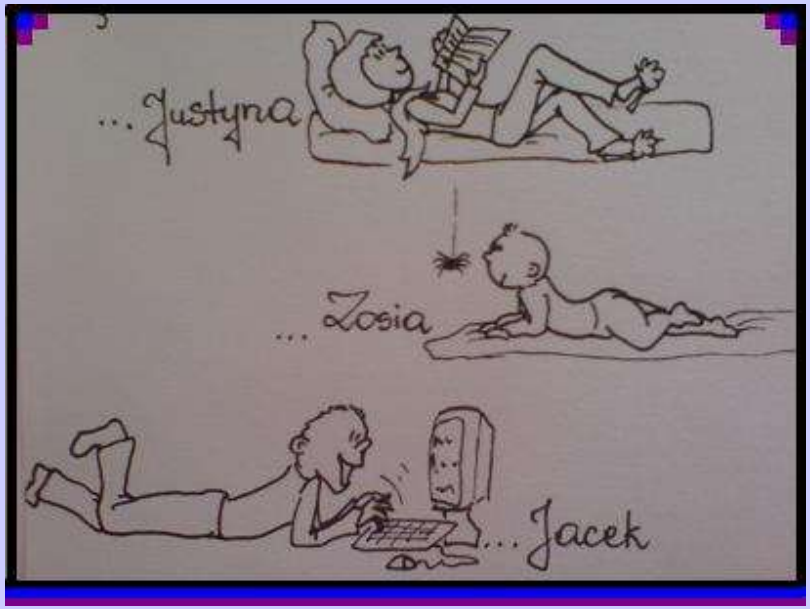
-Attachment to a primary caregiver

Child and Adolescent vs. Adult Psychiatry

Importance of the family/primary care environment

- Families' patterns of functioning, attitudes, norms, styles, interactions, "family games"

Flexible norms and criteria



Child and Adolescent vs. Adult Psychiatry

Importance of social environment

-Extended family with grandparents

-School system

-Other support systems

Child and Adolescent vs. Adult Psychiatry

Techniques of assessment

-Importance of non-verbal techniques (observation of behavior, play, drawings)

-Importance of psychological tests (e.g. projective tests)

Child and Adolescent vs. Adult Psychiatry

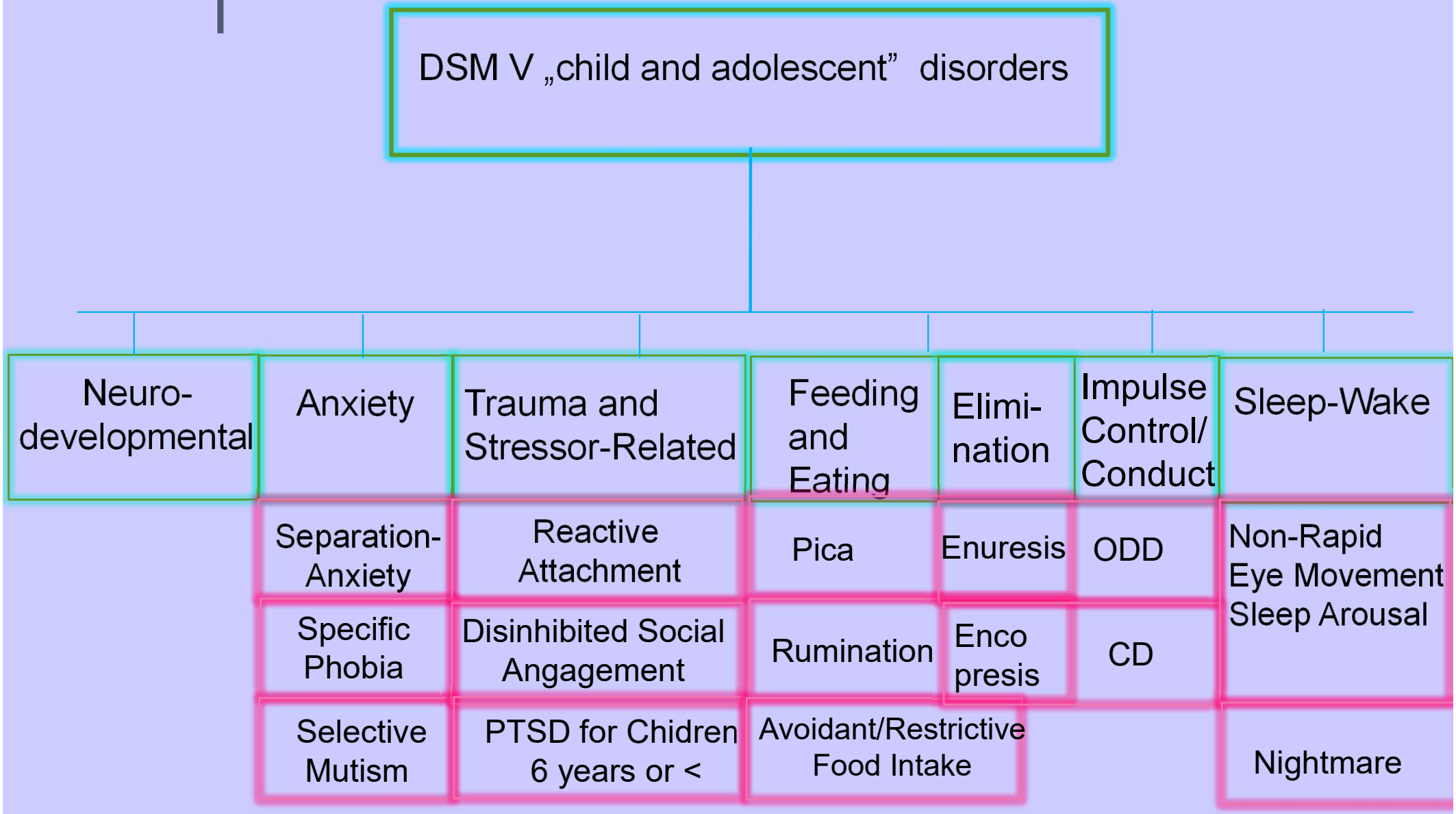
Clinical management

- Emphasis on assistance and support (intellectual disability, autism spectrum disorder)
- Emphasis on psychotherapy, including behavioral techniques
- Involvement of family and significant others
- Involvement on non-physicians in the Health Care Team

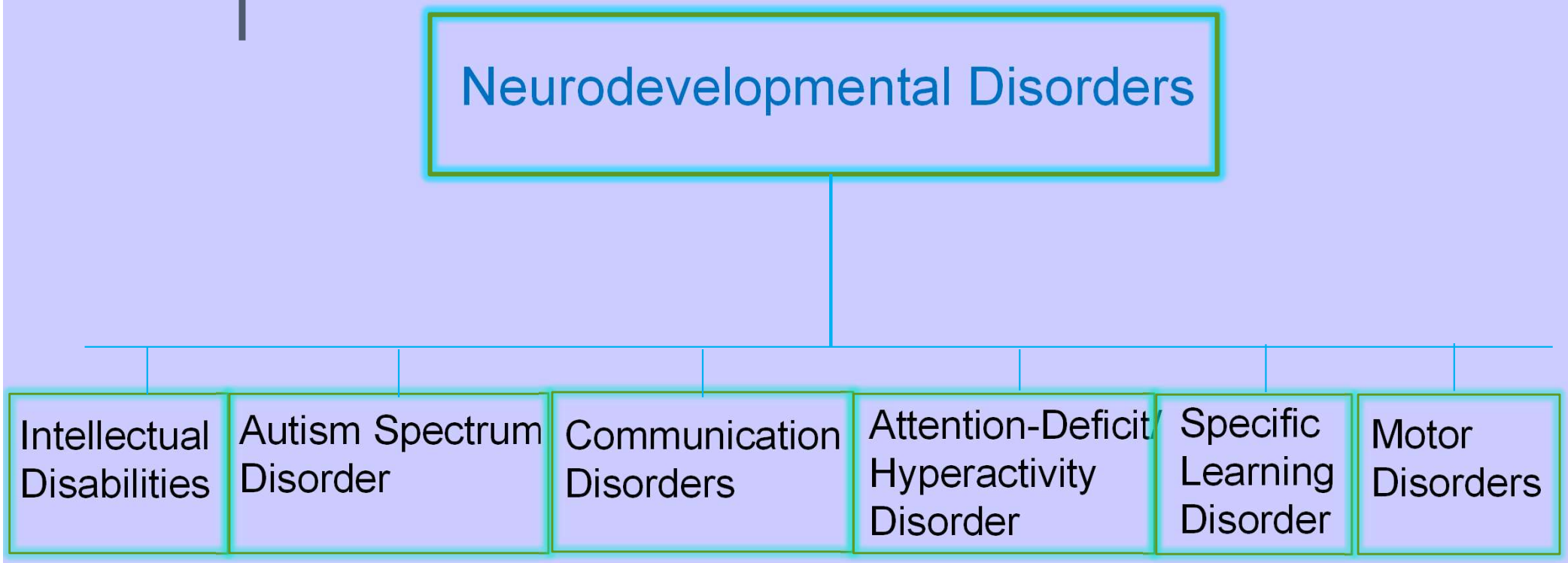
Child and Adolescent vs. Adult Psychiatry

Psychiatric comorbidity (multiple diagnoses)

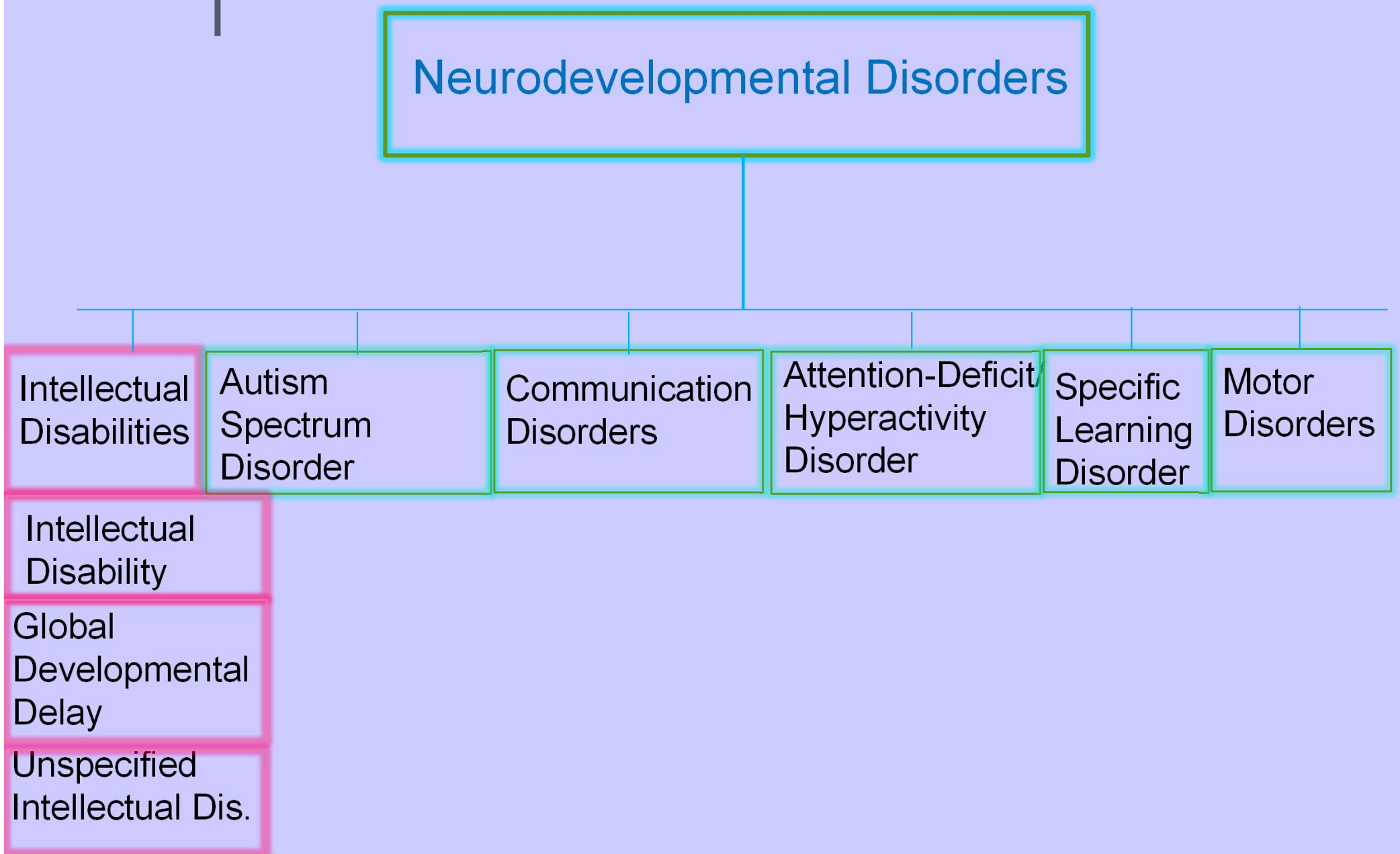
Psychiatric disorders of childhood and adolescence in DSM V



Psychiatric disorders of childhood and adolescence in DSM V



Psychiatric disorders of childhood and adolescnece in DSM V



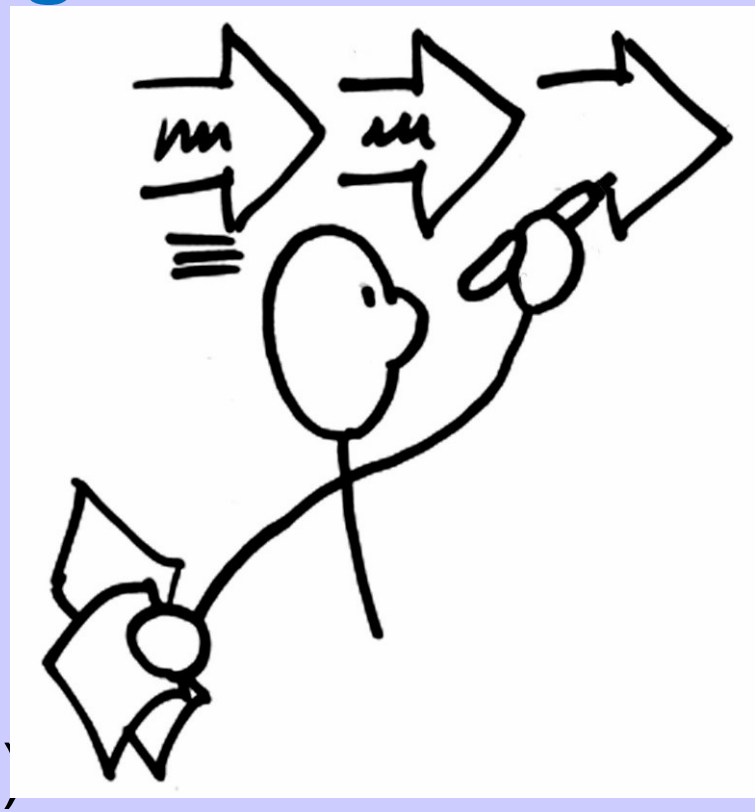
Intellectual Disability – ID = Intellectual Developmental Disorder

Definition and diagnostic criteria

- Disorder with onset during the developmental period

- Includes **both intellectual** and **adaptive functioning** deficits in
  - conceptual
  - social,
  - and practical domains

Intellectual functioning



- Reasoning
- Problem solving
- Planning
- Abstract thinking
- Judgment
- Academic learning (ability to learn in school via traditional teaching methods)
- Experiential learning (the ability to learn through experience, trial and error, and observation).

Intellectual functioning…

- …is measured with individually Administered and psychometrically valid, comprehensive, culturally appropriate, psychometrically sound tests of intelligence, (e.g. Wechsler Inteligence Scale for Children –Revised- WISC-R).

ID-definition and diagnostic criteria

IQ = (Mental age/ chronological age) x 100

ID-definition and diagnostic criteria

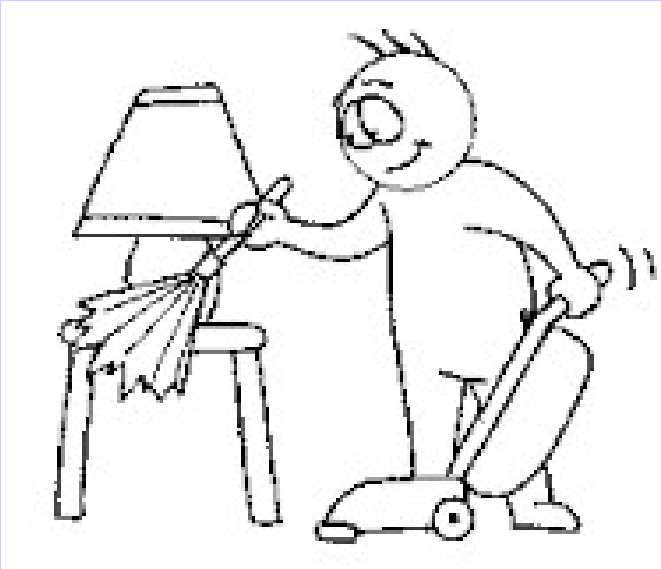
ID is considered to be approximately two standard deviations or more below the population mean, which equals an **IQ score** of about **70 or below**.

Including a margin of measurement error: (5 points)

65-75 **(70 ± 5)**

Adaptive functioning

- Communication
- Social skills (the ability to interact effectively with others ; the ability to understand and comply with social rules, customs, and standards of public behavior)
- Personal independence at home or in community settings (the ability to take care of yourself; the ability to safely complete day-to-day tasks without guidance)
- School or work functioning
- Recreation



Adaptive functioning…

- ...is assessed using **both clinical evaluation** and **standardized measures** (individualized, culturally appropriate, psychometrically sound).

- Standardized measures are used with **knowledgeable informants** (e.g.,parent or other family member, teacher, counselor, care provider) and the individual to the extent possible.

ID – DSM V criteria

A. Deficits in intellectual functions, such as reasoning, problem-solving, planning, abstract thinking, judgment, academic learning and learning from experience, confirmed by both clinical assessment and individualized, standardized intelligence testing.

B. Deficits in adaptive functioning that result in failure to meet developmental and sociocultural standards for personal independence and social responsibility. Without ongoing support, the adaptive deficits limit functioning in one or more activities of daily life, such as communication, social participation, and independent living, and across multiple environments, such as home,school, work, and community.

C. Onset of intellectual and adaptive deficits during the developmental period.

ID – DSM V severity levels

The levels of severity are defined on the basis of **adaptive functioning (!)**, and **not** IQ scores…

...because it is adaptive functioning that determines the level of support required.

ID – DSM V severity levels

- Mild
- Moderate
- Severe
- Profound

Mild ID , 85 % of cases

CONCEPTUAL DOMAIN

- For preschool children there may be no obvious differences
- For school children: difficulty in learning academic skills – support needed to meet age-related expectations
- In adults: Impairment in: abstract thinking, executive functions (planning, strategizing, priority setting), short-term memory, functional use of academic skills (e. g. money management). Concrete approach to problems and solutions compared to age-mates

SOCIAL DOMAIN

- Immaturity in social interactions
- Communication immature or more concrete than expected for age
- Difficulties regulating emotions and behaviour
- Limited understanding of risk in social situations
- A person is at risk of being manipulated by others

Mild ID , 85 % of cases

PRACTICAL DOMAIN

- The individual may function age-appropriately in personal care
- Some support required with complex daily living (grocery shopping, transportation, home and child-care organizing, banking and money management, recreation organizing)
- Competitive employment in jobs that do not require conceptual skills
- Support to make health-care and legal decisions needed
- Support to raise a family needed

Moderate ID , 10 % of cases

CONCEPTUAL DOMAIN

- Conceptual skills markedly behind those of peers.
- For preschool children: language and pre-academic skills develops slowly
- For school children: progress occurs slowly and is markedly limited
- In adults: academic skills at an elementary level
- Support required in use of academic skills

SOCIAL DOMAIN

- Marked differences from peers
- Spoken language is a primary tool for social communication. It is much less complex than that of peers
- May have successful friendship and sometimes romantic relations in adulthood, however may not perceive or interpret social cues accurately. Friendships with well developing peers may be affected by social limitations
- Significant support required in work

Moderate ID , 10% of cases

PRACTICAL DOMAIN

- The individual can care for personal needs(eating, hygiene etc) only after and extended period of teaching and training, reminders may be needed
- Participation in household tasks can be achieved by adulthood –extended period of teaching and ongoing support is required
- Independent employment in jobs that require limited conceptual skills with support from co-workers
- Support is needed to manage scheduling, transportation, health benefits, money management.
- Recreation skills can be developed -Additional support required
- Maladaptive behaviors present in minority

Severe ID , 3-4 % of cases

CONCEPTUAL DOMAIN

- Conceptual skills limited. Little understanding of written lang and concepts involving numbers, time and money
- Extensive support for problem solving throughout life needed

SOCIAL DOMAIN

- Spoken language limited in terms of vocabulary and grammar. Spoken language may be single words or phrases
- Communication focused on „here and now”.
- Individuals understand simple speech and gestures. Relationship with family members and familiar others are a source of pleasure

PRACTICAL DOMAIN

- The individual requires support for all activities of daily living
- Requires constant supervision
- Cannot make responsible decisions
- Skill acquisition in all domains involves long-term teaching and ongoing support
- Maladaptive behaviours (including self-injury) present in minority

Profound ID, 1 – 2 % of cases

CONCEPTUAL DOMAIN

- Conceptual skills involve the physical world rather than symbolic processes
- The individual may use objects in goal-directed fashion for self-care or work
- Co-occuring motor and sensory impairments may prevent functional use of objects

SOCIAL DOMAIN

- Limited understanding of symbolic communication in speech or gesture
- May understand simple instructions or gestures
- Expresses desires and emotions through nonverbal communication
- The individual enjoys relationships with well-known family members , caretakers and familiar others

PRACTICAL DOMAIN

- The individual is dependent on others for all aspects of daily physical care, health and safety, although may participate in some of these activities
- May assist with some daily work tasks at home
- Recreational activities may involve enjoyment in listening to music, watching movies, participating in water activities , all with the support of others.

ID- epidemiology

1- 2 % of population have ID

Mild ID more common in lower social classes

ID- Etiology

- 50% may have known organic causes
- Most mild ID-no clearly defined cause

ID- Etiology

Biological factors

- Genetic causes

-Chromosomal translocations (Down's syndrome - trisomy 21, 13 or 18)

-Other chromosome number abnormalities (Turner's syndrome- 45 X, Klinefelter's syndrome -47 XXY)

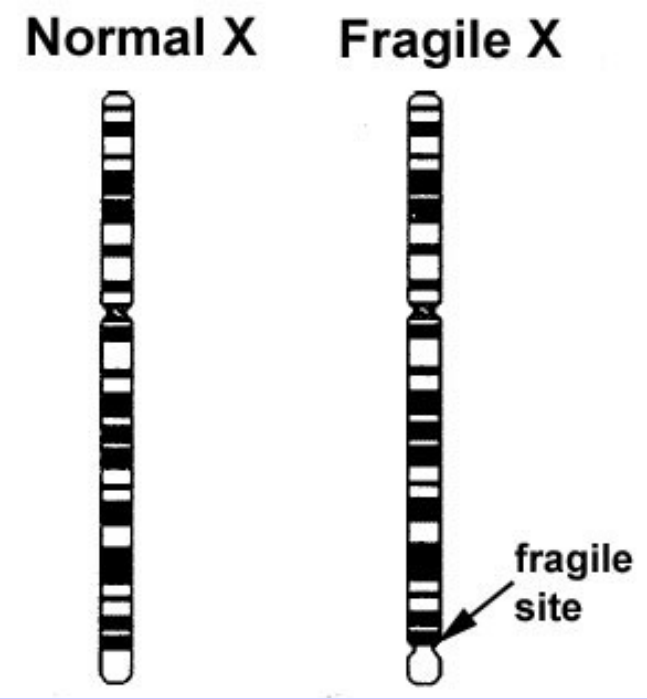
-Chromosomal aberrations (Fragile X syndrome, 5Q deletion)

Down syndrome

- 1/600; 1/100 for maternal age of 40
- Trisomy/translocation 21 (95%)
- Moderate-severe ID
- Slanted palpebral fissures, epicanthal folds
- Protruding tongue, flat facies
- Small stature, thick neck, small ears
- Single palmer transverse crease
- Hypotonia
- Congenital heart defects
- Higher risk of premature aging, Alzheimer's disease by 35

Fragile X syndrome

- Long arm of chromosome at Xq27 (fragile site)
- 1/1250 males vs 1/2500 females
- Males with ID (10-12%), X-linked ID (20-50%)
- Moderate-severe ID
- IQ declines through early ASDolescence
- Delayed language
- Large prominent jaw and ears
- Long face
- Hyperextensible joints
- Short stature
- Post-pubertal macroorchidism
- ASDHD, PDD, hand flapping, social anxiety



ID- Etiology

Biological factors

- Genetic causes

-Genetically transmitted metabolic errors: Phenylketonuria, Galactozemia, Glyogen storage disorders (Tay-Sachs disease)

-Genetically transmitted neurological disorders: Neurofibromatosis, Tuberous Sclerosis

FIGURA 1. Adenoma sebáceo de la piel.

ID- Etiology

Biological factors

Inborn developmental disorders of brain formation:

Anencephaly,hydrocephalus, microcephaly, spina bifida

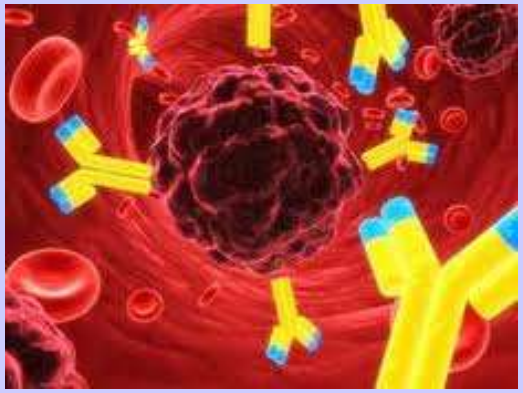
ID- Etiology

Biological factors

- **Environmental influences**

-Maternal malnutrition, hypoxia, placental insufficiency, gestational diabetes, in-utero alcohol and drug exposure

ID- Etiology



Biological factors

Infections (in utero or during infancy): Herpes simplex, HIV, Hemophilus influenza, Meningitis, Malaria, Measles, Rubella, Toxoplasmosis

ID- Etiology

Biological factors

Prematurity, traumatic delivery

ID- Etiology

Biological factors

Environmental influences

- Head traumas
- Poisoning (lead poisoning)

ID-Etiology

Psychosocial factors

- Deprivation of nurturance
- Deprivation of social, linguistic and other stimulation
- Severe mental disorders (e.g. Autism Spectrum Disorder)

ID- Associated psychiatric and behavioral disorders

- 25% of clinically referred persons may have psychiatric problems
- Lower rates (10-15%) in population-based studies
- Prevelance of comorbid mental disorders estimated to be 3-4 times greater than in general population

ID- Associated psychiatric and behavioral disorders

- ADHD
- Mood Disorders
- Stereotypic Movement Disorder
- Disruptive/Impulse-control/Conduct Disorders

ID- Management

- Appropriate support and assistance
- Appropriate educational services (individualized educational planning, language skills improvement)
- Structured, comprehensive programs
- Behavioral interventions
- Sheltered employment
- Pharmacological interventions if comorbid disorders or severe behavioral problems occur
- Social support for the family

ID - course and outcome

- Course and outcome variable
- Influenced by the course of underlying general medical condition- in some cases characterized by progressive deterioration
- In mild and moderate ID depends more on environmental factors (stimulation, educational opportunities)

ID is not necessarily a lifelong disorder!

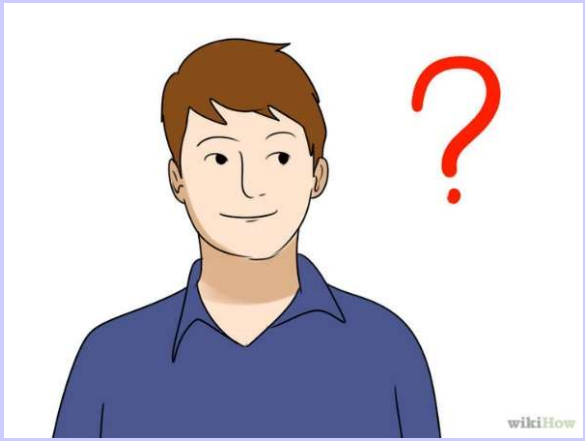
Global Developmental Delay

- Diagnosis for individuals **under** the age of **5** years when the clinical severity level cannot be reliably assessed

- An individual fails to meet expected developmental milestones in several areas of intellectual functioning

- The category requires reassessment after a period of time

Unspecified ID



- Diagnosis for individuals **over** the age of **5** years when the clinical severity level cannot be reliably assessed (eg due to physical imapairment, co-occuring mental disorder)

- An individual fails to meet expected developmental milestones in several areas of intellectual functioning

- The category should be used in exceptional circumstances
- Requires reassessment after a period of time

Specific Learning Disorders

A. A persistent difficulty learning academic skills for at least 6 months despite intervention targeting the area(s) of difficulty. The areas of documented academic skill difficulties include:

1. Word decoding and word reading fluency
2. Reading comprehension
3. Spelling
4. Writing difficulties such as grammar, punctuation, organization, and clarity
5. Number sense, fact and calculation
6. Mathematical reasoning

Specific Learning Disorders

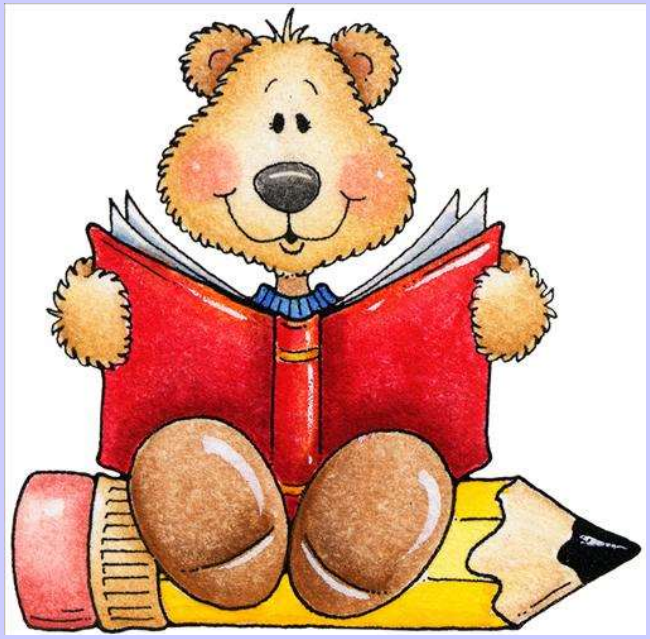
B. The affected academic skills are substantially below expectations given the individual's age and result in impaired functioning in school, at work and in activities of daily living.

C. LD is readily apparent in the early years, however it is not to be diagnosed until the onset of school years; in some individuals the disorder is not apparent until the onset of a demand for higher-level skills.

D. The academic and learning difficulties occur in the absence of:

1. Intellectual Disabilities
2. Visual or hearing impairments
3. Mental disorders (e.g. depression, anxiety, etc.)
4. Neurological disorders
5. Psycho-social difficulty
6. Language differences
7. Lack of access to adequate instruction

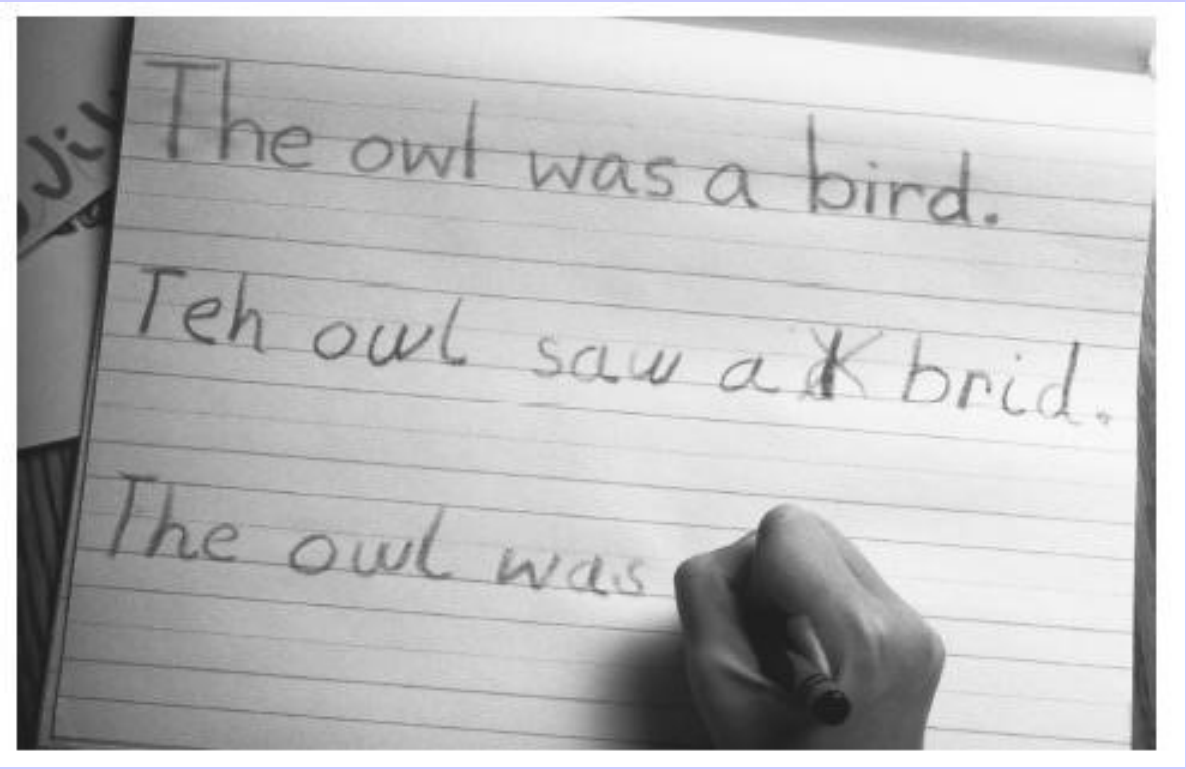
Specific Learning Disorders



With impairment in reading:

- Reading accuracy
- Reading rate or fluency
- Reading comprehension

Specific Learning Disorders



With impairment of Written Expression:

- Spelling accuracy
- Grammar and punctuation accuracy
- Clarity or organization of written expression

Specific Learning Disorders

With impairment in Mathematics:

- Number sense
- Memorization of arithmetic facts
- Accurate or fluent calculation
- Accurate math reasoning

Specific Learning Disorders – severity levels

Current severity should be specified as:

- Mild
- Moderate
- Severe

Specific Learning Disorders

~ 5 % of students in public schools in the USA are identified as having Specific Learning Disorder

Autism Spectrum Disorder

Autism Spectrum Disorder – DSM V diagnostic criteria

A. Persistent **deficits in social communication** and social interaction across multiple contexts, as manifested by the following, currently or by history (examples are illustrative, not exhaustive, see text):

1. Deficits in social-emotional reciprocity, ranging, for example, from abnormal social approach and failure of normal back-and-forth conversation; to reduced sharing of interests, emotions, or affect; to failure to initiate or respond to social interactions.

2. Deficits in nonverbal communicative behaviours used for social interaction, ranging, for example, from poorly integrated verbal and nonverbal communication; to abnormalities in eye contact and body language or deficits in understanding and use of gestures; to a total lack of facial expressions and nonverbal communication.

3. Deficits in developing, maintaining, and understanding relationships, ranging, for example, from difficulties adjusting behaviour to suit various social contexts; to difficulties in sharing imaginative play or in making friends; to absence of interest in peers.

Autism Spectrum Disorder – DSM V diagnostic criteria

B. **Restricted, repetitive patterns of behavior, interests, or activities,** as manifested by at least two of the following, currently or by history (examples are illustrative, not exhaustive; see text):

1. Stereotyped or repetitive motor movements, use of objects, or speech (e.g., simple motor stereotypies, lining up toys or flipping objects, echolalia, idiosyncratic phrases).
2. Insistence on sameness, inflexible adherence to routines, or ritualized patterns or verbal nonverbal behavior (e.g., extreme distress at small changes, difficulties with transitions, rigid thinking patterns, greeting rituals, need to take same route or eat food every day).
3. Highly restricted, fixated interests that are abnormal in intensity or focus (e.g, strong attachment to or preoccupation with unusual objects, excessively circumscribed or perseverative interest).
4. Hyper- or hyporeactivity to sensory input or unusual interests in sensory aspects of the environment (e.g., apparent indifference to pain/temperature, adverse response to specific sounds or textures, excessive smelling or touching of objects, visual fascination with lights or movement).

Autism Spectrum Disorder – DSM V diagnostic criteria

C. Symptoms must be present in the **early developmental period** (but may not become fully manifest until social demands exceed limited capacities, or may be masked by learned strategies in later life).

D. Symptoms cause clinically **significant impairment** in social, occupational, or other important areas of current functioning.

E. These disturbances are not better explained by intellectual disability (intellectual developmental disorder) or global developmental delay. Intellectual disability and autism spectrum disorder frequently co-occur; to make comorbid diagnoses of autism spectrum disorder and intellectual disability, social communication

Autism Spectrum Disorder – DSM V diagnostic criteria

- *Specify* if:

  With or without accompanying intellectual impairment

- With or without accompanying language impairment
- Associated with a known medical or genetic condition or environmental factor
- Associated with another neurodevelopmental, mental, or behavioral disorder
- With catatonia

Autistic children…

… do not follow caregivers with eyes

Autistic children…

… do not present „social smile”

Autistic children…

… do not show emotional reciprocity

Autistic children…

…resist against physical contact

Autistic children…

…do not point out objects

Autistic children…

…do not share emotions, interests

Autistic children…

…do not bubble

Autistic children…

…play alone

Autistic children…

…play in a bizzare way


IT DOESN'T HAVE TO
MAKE SENSE TO YOU...
RESPECT THAT IT
MAKES SENSE TO THEM.

…may be fascinated with a rotary motion

Autistic children…

are oversensitive to sensory stimuli

do not recognize danger

have tantrum outburts

ASD- associated behavioral symptoms

- Hyperactivity
- Impulsivity
- Short attention span
- Agressiveness
- Self injurious behaviors
- Temper tantrums
- Abnormalities in eating and sleeping
- Odd responses to sensory stimuli (e.g. oversensivity to sounds, light or odours, fascination with certain stimuli)

Autism Spectrum Disorder – Severity

Severity is based on social communication impairments and restricted, repetitive patterns of behavior

Autism Spectrum Disorder –Severity

Severity Level 1: Requiring support

Social communication

- Without support in place, deficits in social communication cause noticeable impairments.
- Difficulty initiating social interactions, and clear examples of atypical or unsuccessful response to social overtures of others.
- May appear to have decreased interest in social interactions.

For example, a person who is able to speak in full sentences and engages in communication but whose to- and-fro conversation with others fails, and whose attempts to make friends are odd and typically unsuccessful.

Restricted, repetitive behaviors

- Inflexibility of behavior causes significant interference with functioning in one or more contexts.
- Difficulty switching between activities.
- Problems of organization and planning hamper independence.

Autism Spectrum Disorder –Severity

Severity Level 2: Requiring substantial support

Social communication

- Marked deficits in verbal and nonverbal social communication skills
  Social impairments apparent even with supports in place
- Limited initiation of social interactions
- Reduced or abnormal responses to social overtures from others.

For example, a person who speaks simple sentences, whose interaction is limited to narrow special interests, and how has markedly odd nonverbal communication.

Restricted, repetitive behaviors

- Inflexibility of behavior, difficulty coping with change, or other
- Restricted/repetitive behaviors appear frequently enough to be obvious to the casual observer and interfere with functioning in a variety of contexts.
- Distress and/or difficulty changing focus or action.

Autism Spectrum Disorder –Severity

Severity Level 3: Requiring very substantial support

Social communication

- Severe deficits in verbal and nonverbal social communication skills cause severe impairments in functioning,
- very limited initiation of social interactions, and minimal response to social overtures from others.

For example, a person with few words of intelligible speech who rarely initiates interaction and, when he or she does, makes unusual approaches to meet needs only and responds to only very direct social approaches

Restricted, repetitive behaviors

- Inflexibility of behavior, extreme difficulty coping with change,
- Other restricted/repetitive behaviors markedly interfere with functioning in all spheres.
- Great distress/difficulty changing focus or action.

ASD – comorbidity

- Intellectual disability (70-75 %)
- Epilepsy (25%)
- OCD and other anxiety disorders
- Mood disorders

ASD and Intellectual Disability

- Associated diagnosis of ID in 70-75% of children with ASD
- IQ 35-50 (moderate range)
- Profile of cognitive functions usually uneven, sometimes with specific abilities (music, mathematics)

ASD- differential diagnosis

- Congenital deafness
- Congenital blindness
- Intellectual disability
- Selective mutism
- Communication Disorders

ASD- Prevelance

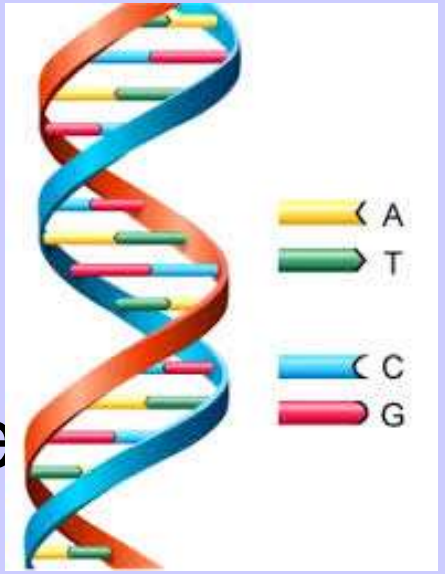
- 10-15 per 10,000 individuals
- Male to female ratio- 3:1 (4:1)

ASD- Etiology and pathophysiology

ASD- Etiology and Pathophysiology

Genetic factors

- The MZ/DZ Twin Ratio- 36:1
- Rate of ASD in siblings of autistic children -2% (vs. the population rate 0.01%).



ASD- Etiology and Pathophysiology

Genetic factors

- Major susceptibility loci proposed:

1q 21-22

3q 25-27

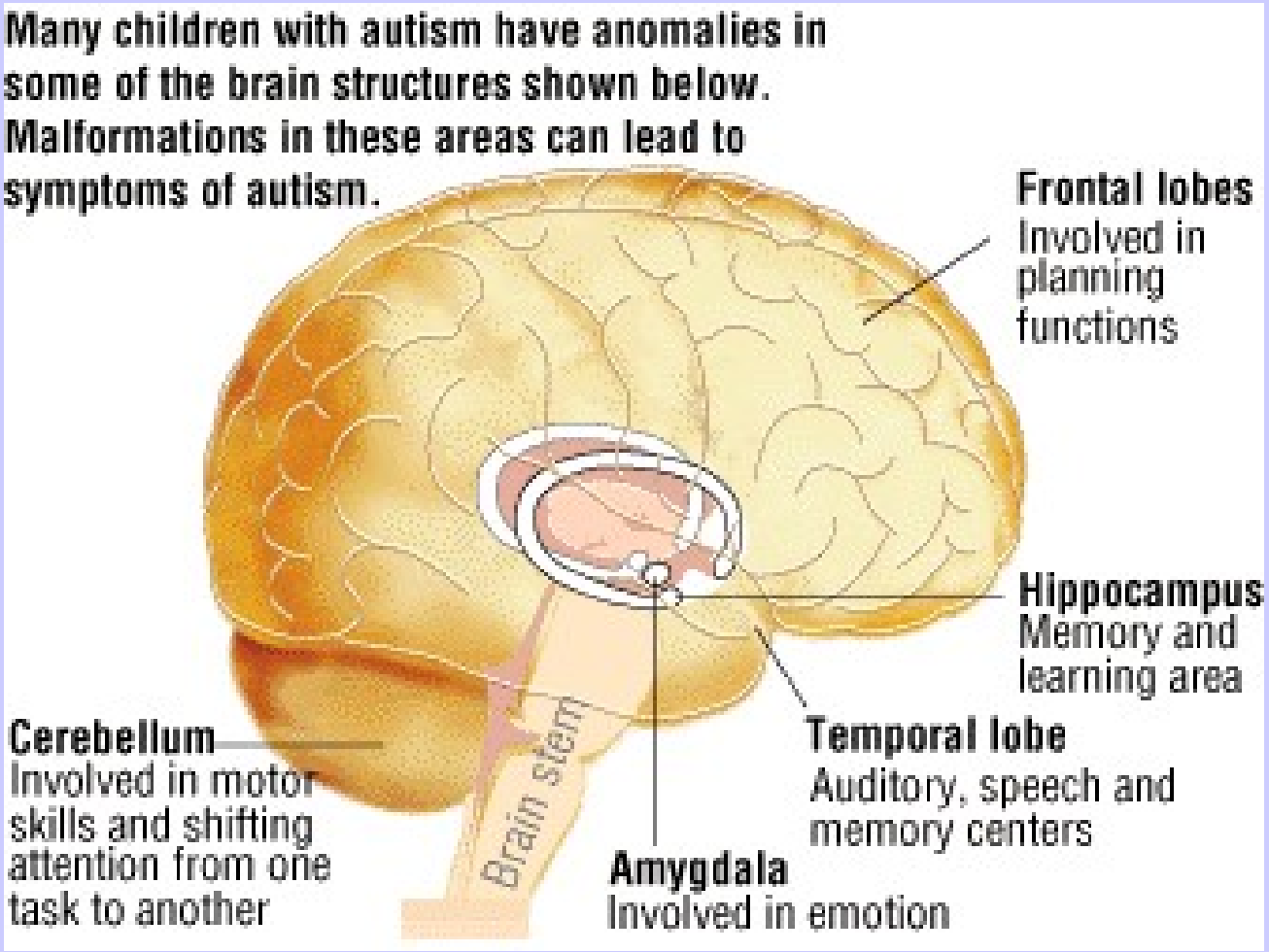
7q AUT S1

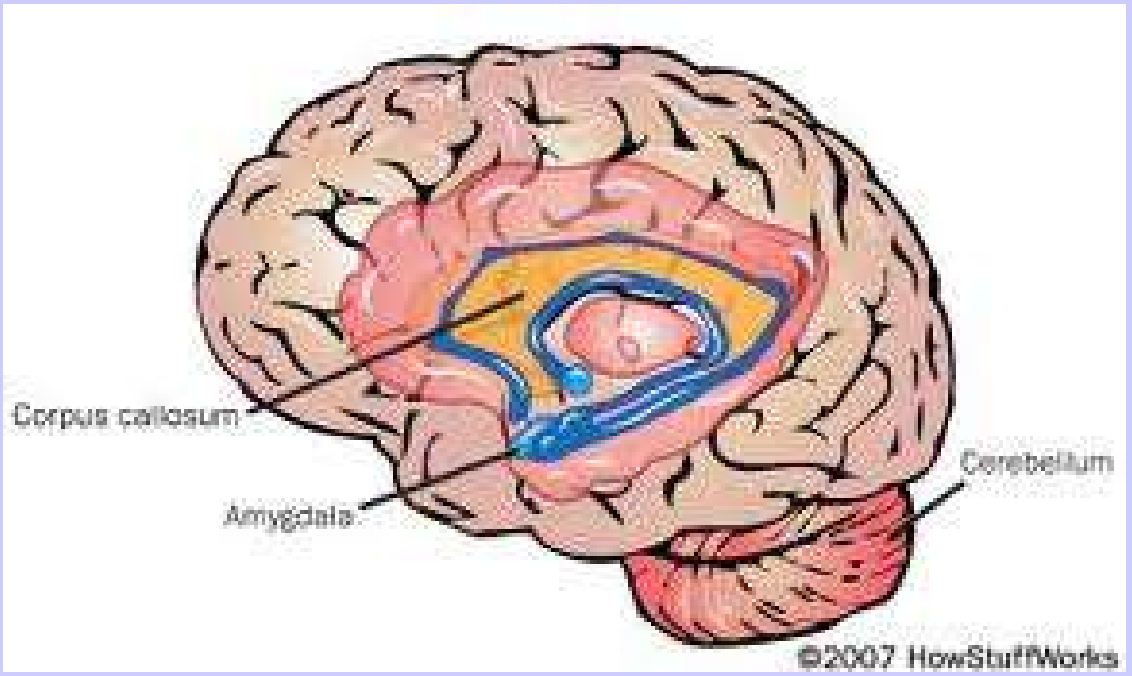
15q 11-13

ASD- Etiology and Pathophysiology

Neuroimaging studies

- Large brain size relatively to body size (failure in neuron elimination process)
- Ventricular enlargement
- Gyral malformations (polymicrogyria)
- Abnormalities in normal cerebral asymmetry
- Deacresed volume of cerebellum (vermis)
- Deacresed volume of temporal lobe structures (limbic system with hippocampal complex)
- Enlarged amygdala

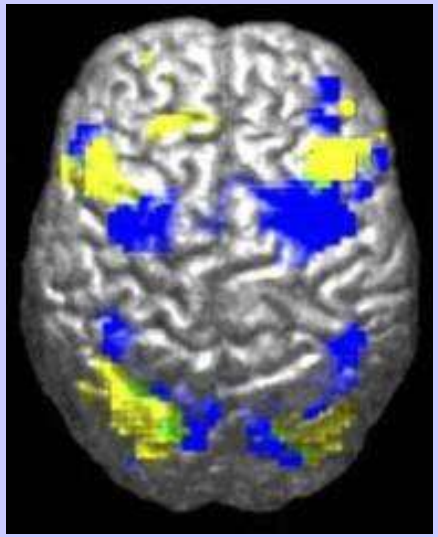

Many children with autism have anomalies in some of the brain structures shown below. Malformations in these areas can lead to symptoms of autism.
Frontal lobes
Involved in planning functions
Hippocampus
Memory and learning area
Temporal lobe
Auditory, speech and memory centers
Cerebellum
Involved in motor skills and shifting attention from one task to another
Brain stem
Amygdala
Involved in emotion


Corpus callosum
Amygdala
Cerebellum
©2007 HowStuffWorks

ASD- Etiology and Pathophysiology

Functional imaging studies

- Hypoperfusion and deacresed metabolic activity in temporal lobe and the anterior cyngulate gyrus

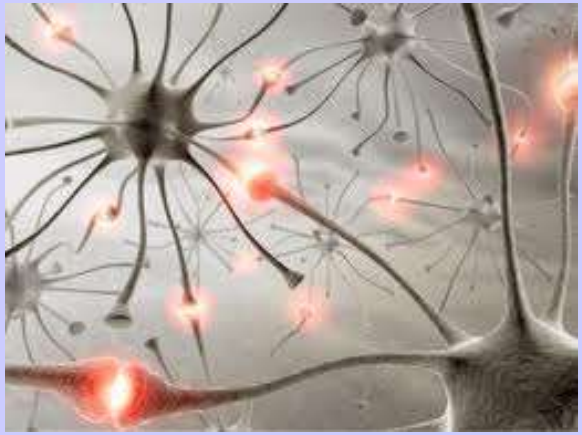


ASD- Etiology and Pathophysiology

Neurobiochemical factors

- Increased levels of DA, 5HT, GABA metabolits in serum and cerebral fluid
- Elevated levels of brain opioid peptides

ASD- Etiology and Pathophysiology



Neuropathological studies

Hypoplastic changes in limbic structures and cerebellum

ASD-Management

Goals

- Assistance and supporting of development
- Reduction of the rigid, stereotyped behaviors
- Reduction of the family's distress and suffering.

ASD-Management

- Education, counselling and social support for caregivers
- Special education for children
- Behavioral manegment (reducing the rigid sterotyped behaviors and improving social and cognitive skills)
- Speech therapy, occupational therapy

ASD-Management

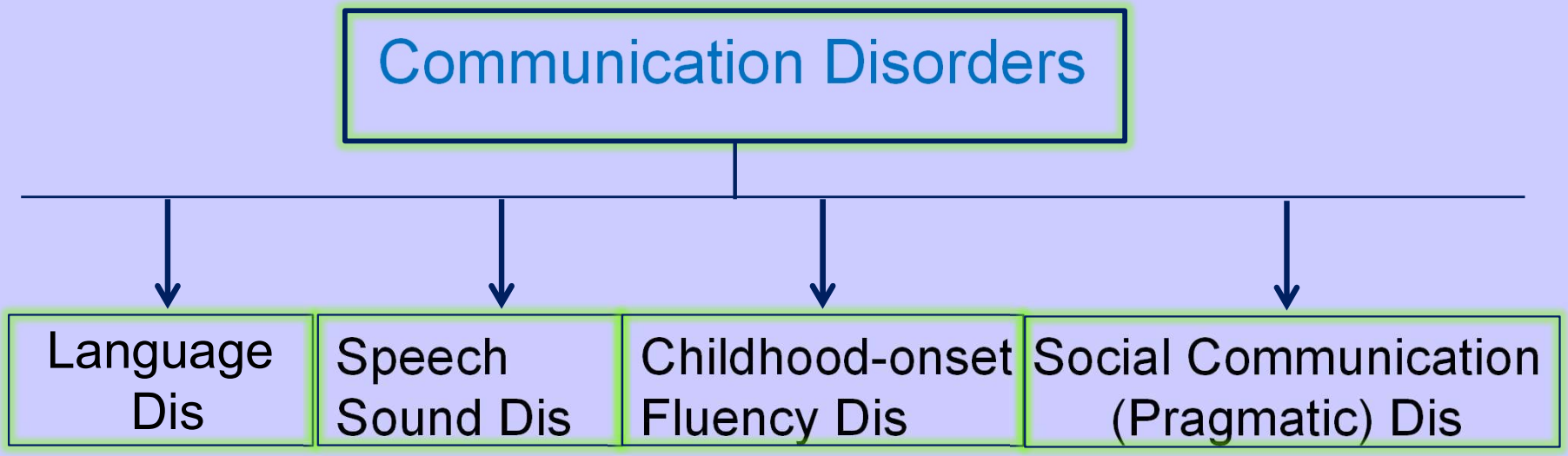
Pharmacological methods

- Atypical neuroleptics (risperidone)
- Conventional neuroleptics (haloperidol)
- Carbamazepine
- Valproic acid
- Naltrexone
- SSRIs (fluoxetine)

ASD-Course and outcome

- 2-3 % of autistic individuals progress normally through school and are able to live independently
- Good prognostic features: Higher IQ, „good” language and social skills

Communication Disorders



Social (Pragmatic) Communication Disorder

A. Persistent difficulties in the social use of verbal and nonverba communication as manifested by all of the following:

1. Deficits in using communication for social purposes, such as greeting and sharing information, in a manner that is appropriate for the social context.

2. Impairment of the ability to change communication to match context or the needs of the listener, such as speaking differently in a classroom than on the playground, talking differently to a child than to an adult, and avoiding use of overly formal language.

Social (Pragmatic) Communication Disorder

3. Difficulties following rules for conversation and storytelling, such as taking turns in conversation, rephrasing when misunderstood, and knowing how to use verbal and nonverbal signals to regulate interaction.

4. Difficulties understanding what is not explicitly stated (e.g., making inferences) and nonliteral or ambiguous meanings of language (e.g., idioms, humor, metaphors, multiple meanings that depend on the context for interpretation).

Social (Pragmatic) Communication Disorder

B. The deficits result in functional limitations in effective communication, social participation, social relationships, academic achievement, or occupational performance, individually or in combination.

C. The onset of the symptoms is in the early developmental period (but deficits may not become fully manifest until social communication demands exceed limited capacities).

D. The symptoms are not attributable to another medical or neurological condition or to low abilities in the domains or word structure and grammar, and are not better explained by autism spectrum disorder, intellectual disability (intellectual developmental disorder), global developmental delay, or another mental disorder.

Attention

Deficit

Hyperactivity

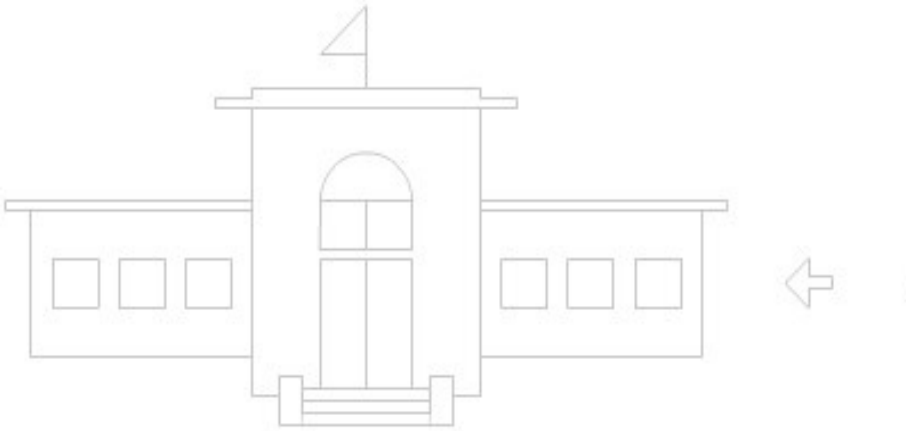
Disorder

ADHD-Epidemiology

ADHD is prevalent throughout the

American Psychiatric Association: DSM-IV-TR.2000.85-93.
Goldman LS, et al.*JAMA*.1998;279:1100-1107.

ADHD-Epidemiology

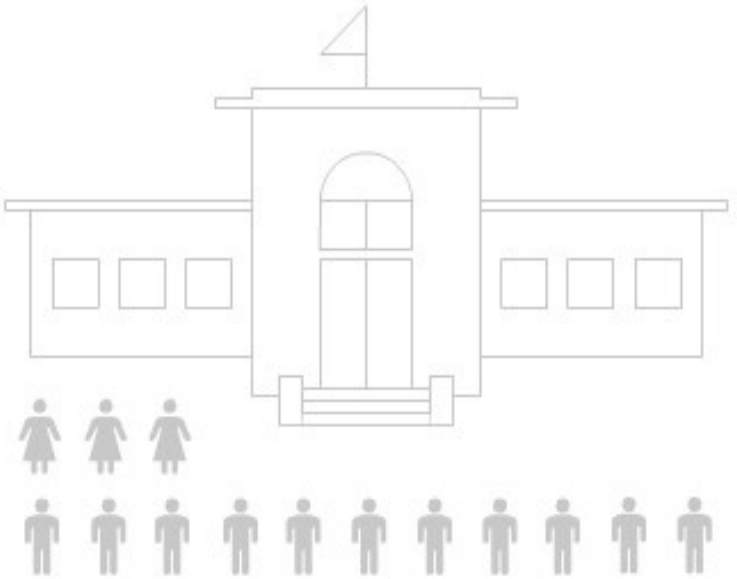


School with 200 students.

3-7% of school-aged children are affected by ADHD.

American Psychiatric Association: DSM-IV-TR.2000.85-93.

ADHD-Epidemiology



School with 200 students.

ADHD occurs at a male to female ratio of 4:1, and females are often underdiagnosed.

American Psychiatric Association: DSM-IV-TR.2000.85-93.
Cantwell DP. *J Am Acad Child Adolesc Psychiatry*,1996.35(8): 978-987.
Barkley, RA. *Attention Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment* 2nd Edition. 1998:85.

ADHD- Diagnosis (DSM V criteria)

A. Persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, as characterized by (1) and/or (2)

1. Inattention: Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts on social and academic/occupational activities:

(a) Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities

(b) Often has difficulty sustaining attention in tasks or play activities

(c) Often does not seem to listen when spoken to directly

(d) Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)

(e) Often has difficulty organizing tasks and activities

(f) Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)

(g) Often loses things necessary for tasks or activities (e.g. toys, pencils or tools)

(h) Is often easily distracted by extraneous stimuli

(i) Is often forgetful in daily activities

ASHD- Diagnosis (DSM V criteria)

Hyperactivity and impulsivity

(a) Often fidgets with hands or feet or squirms in seat

(b) Often leaves seat in classroom or in other situations in which remaining seated is expected

(c) Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)

(d) Often has difficulty playing or engaging in leisure activities quietly

(e) Is often „on the go" or often acts as if „driven by a motor"

(f) Often talks excessively

(g) Often blurts out answers before questions have been completed

(h) Often has difficulty awaiting turn

(i) Often interrupts or intrudes on others (e.g. butts into conversations or games)

ADHD- Diagnosis (DSM V criteria)

B. Several inattentive or hyperactive-impulsive symptoms prior to age 7 years.

C. Several inattentive or hyperactive-impulsive symptoms are present in two or more settings (e.g. at school/work at home, with friends and relatives, in other activities)

D. There is clear evidence that the symptoms interfere with, or reduce the quality of, social, academic, or occupational functioning

E. The symptoms do not occur excessively during the course of schizophrenia, or another psychotic disorder and are not better explained by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, Personality Disorder, Substance Intoxication or Withdrawal)

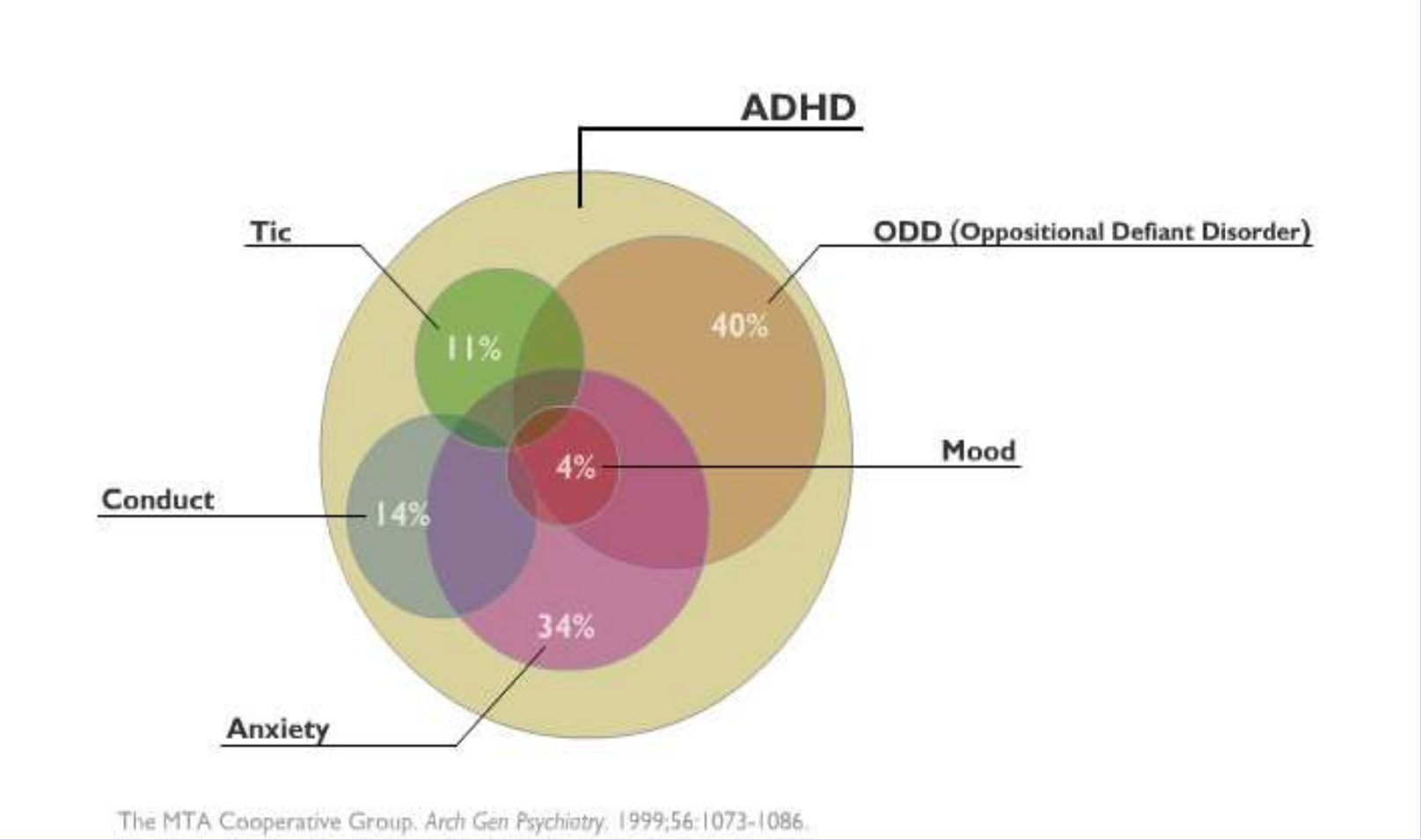
ADHD- Clinical subtypes specifiers

- Predominantly inattentive presentation
- Predominantly hyperactive-impulsive presentation
- Combined type

ADHD- severity specifiers

- Mild
- Moderate
- Severe

ADHD-Comorbidity



The MTA Cooperative Group. *Arch Gen Psychiatry*. 1999;56:1073-1086.

ADHD- Differential diagnosis

- Age-appropriate behaviors in active children
- Response to abusive environment
- Oppositional defiant disorder
- Conduct disorder
- Specific Learning disorders
- Bipolar disorder
- Childhood depression
- Anxiety disorder
- Neuroendocrine abnormalities (thyroid disorder)

ADHD-Course and outcome

60% of patients diagnosed in childhood exhibit symptoms into adulthood.

American Psychiatric Association: DSM-IV-TR.2000.85-93.
Schweitzer JB, et al. Attention-deficit/hyperactivity disorder. *Med Clin of North Am.* 2001; 85(3):757-777.

ADHD-Course and outcome

Poor School/Work Performance

- Poor academic grades for ability
- Misses deadlines frequently
- Frequently misplaces things
- Often late for work/appointments

Emotional Problems

- Prone to emotional outbursts
- Feels demoralized over constant failure

Adaptive Behavior Problems

- Poor financial management
- Failure to pay bills on time
- Excess debt
- More chaotic personal & family routines

Poor Interpersonal Skills

- Poor listening skills
- Difficulties making/sustaining friendships
- Quick to anger
- Verbally abusive when angered

Barkley RA. *Attention Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment* 2nd Edition. 1998:212.

ADHD-Course and outcome

Work performance

Employers rate ADHD adults as:

- Less adequate in fulfilling work demands
- Less likely to work independently
- Less likely to get along well with supervisor
- More likely to be fired or laid off than normal controls

Ability to fulfill potential

ADHD adults in general have lower job status.

ADHD adults in general are more likely to quit a job or change jobs.

Barkley RA. *Attention Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment* 2nd Edition. 1998:208.

ADHD-Course and outcome

Lower Self-Esteem

- Antisocial tendencies
- Low self-esteem persists into adulthood
- Self-perception of incompetence

Family Concerns

- Higher levels of family adversity impacting the outcome of the disorder
- More likely to have marital difficulties and increased divorce rates

Impaired Social Skills

- Greater social skill and interaction problems
- Particularly in male-female interactions and lack of assertion

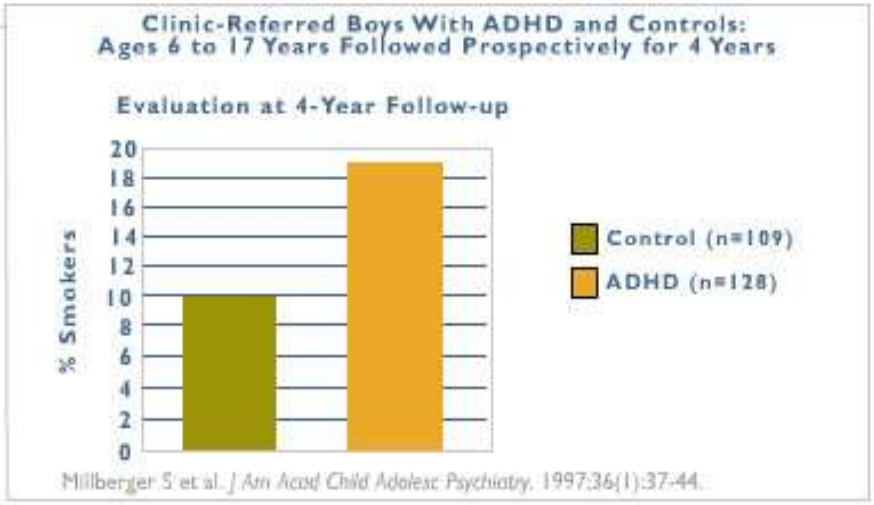
Weiss G, Hechtman LT. Hyperactive Children Grow Up, 2nd Edition.
Barkley RA. *Attention Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment* 2nd Edition 1998:208.

ADHD-Course and outcome

- 50 % of children with ADHD complete school (fewer years than children without ADHD)
- 25 % develop antisocial personality disorder as adults
- Higher rates of substance abuse, suicide attempts, car accidents, arrests compared with healthy children

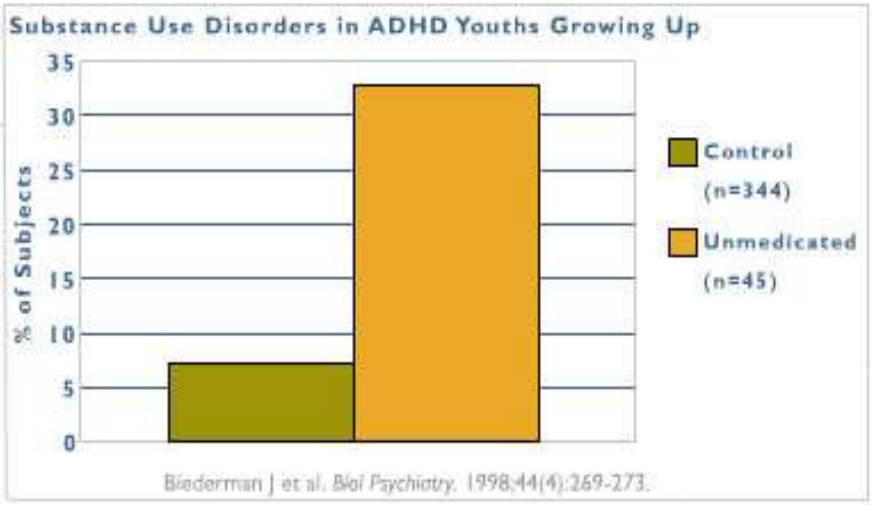
ADHD-Course and outcome

- Smoking
- Substance use disorders
- Oppositional defiant disorder (ODD)/conduct disorder (CD)
- Depression
- Anxiety



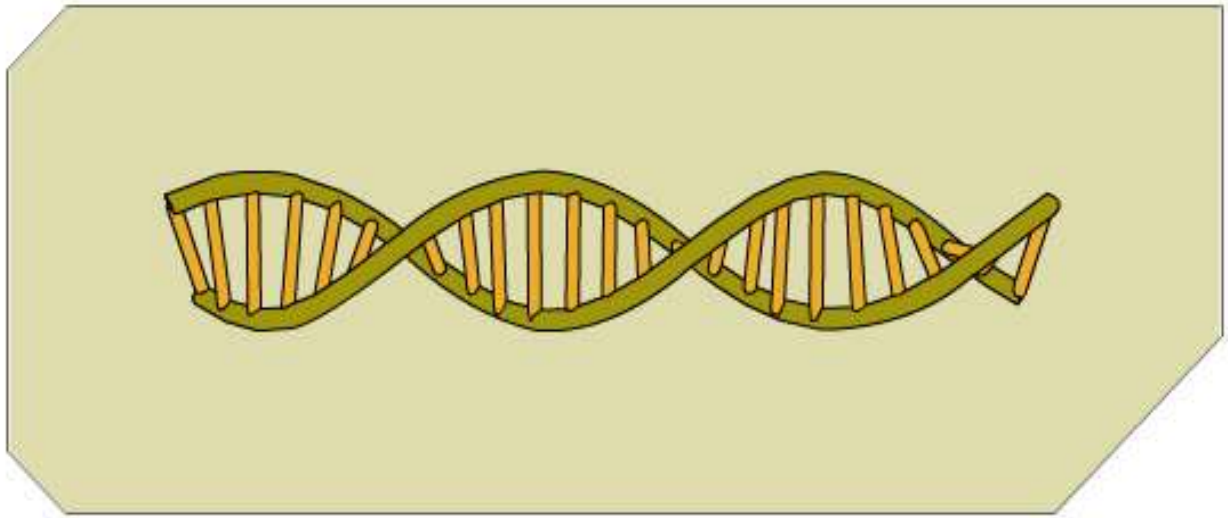
ADHD-Course and outcome

- Smoking
- Substance use disorders
- Oppositional defiant disorder (ODD)/conduct disorder (CD)
- Depression
- Anxiety



ADHD-Etiology

Genetic Vulnerabilities



Hauser P, Zametkin AJ; et al. *N Engl J Med*. 1993. 328(14):997-1001.
Cook EH, Stein MA; et al. *Am J Hum Genet*. 1995.56:993-998.
Swanson JM, Sunohara GA, et al. *Molecular Psychiatry*. 1998.3:38-41.

ADHD-Etiology

Genetic factors

- MZ/DZ Twins Ratio: 51-80% / ~30%
- Runs in families - Risk in children of biological parents with ADHD: 15-20%

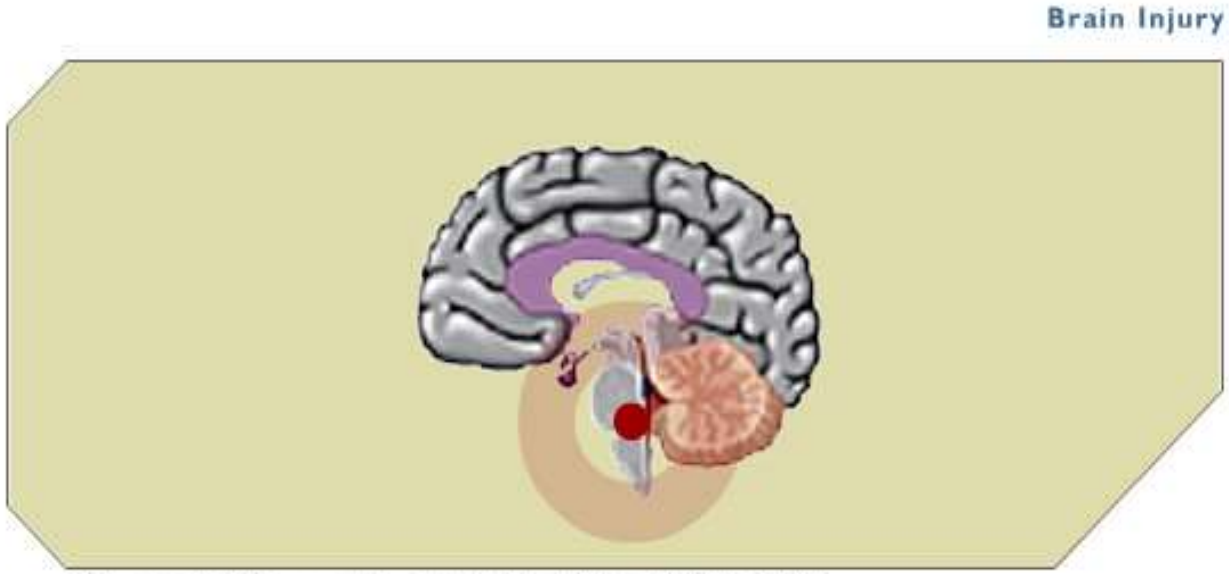
ADHD-Etiology

Genetic factors

Genes involved

- Gene for DAT1(dopamine transporter)
- Gene for DBH (dopamine betahydroxylaze)
- Gene for DRD 4 (dopamine receptor)

ADHD-Etiology



Milberger S, Biederman J, et al. *Biol Psychiatry*. 1997.41:65-75.

ADHD-Etiology

Castellanos FX, Giedd JN, et al. *Arch Gen Psychiatry*. 1996.53(7):607-16.
Swanson JM, Sergeant JA, et al. *Lancet*. 1998. 351:429-33.

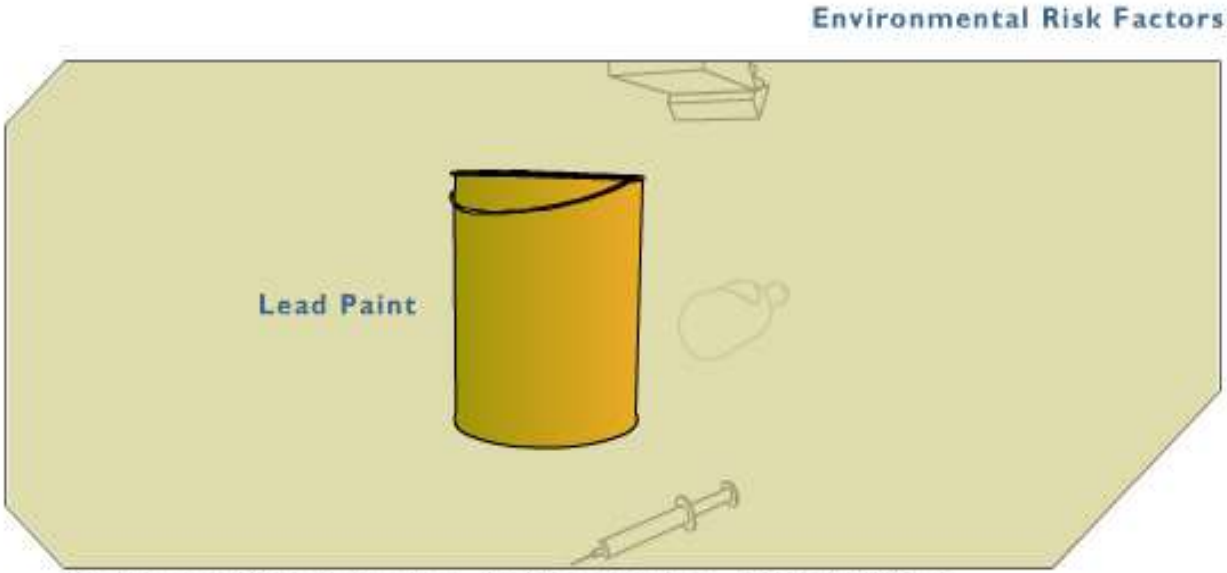
ADHD-Etiology

Castellanos FX, Giedd JN, et al. *Arch Gen Psychiatry*. 1996.53(7):607-16.
Swanson JM, Sergeant JA, et al. *Lancet*. 1998. 351:429-33.

ADHD-Etiology

Castellanos FX, Giedd JN, et al. *Arch Gen Psychiatry*. 1996.53(7):607-16.
Swanson JM, Sergeant JA, et al. *Lancet*. 1998. 351:429-33.

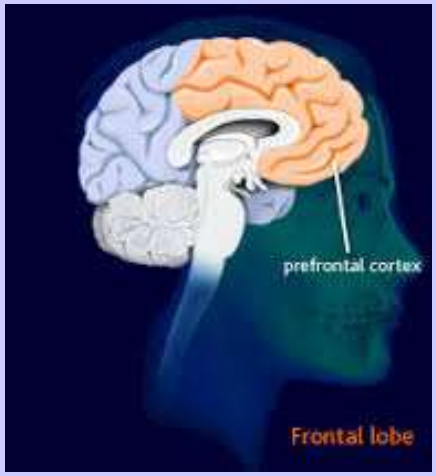
ADHD-Etiology



Castellanos FX, Giedd JN, et al. *Arch Gen Psychiatry*. 1996.53(7):607-16.
Swanson JM, Sergeant JA, et al. *Lancet*. 1998. 351:429-33.

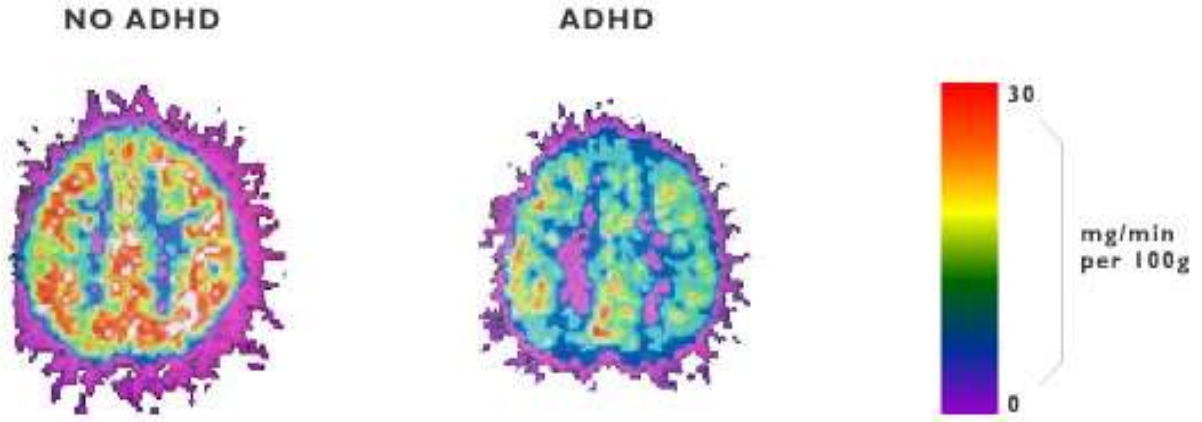
ADHD-Etiology

Neuroimaging data



- Decreased volumes of :
  - Prefrontal cortex
  - Basal ganglia (nuclei caudati , globus pallidus, putamen)
  - Cerebellum

ADHD-Etiology

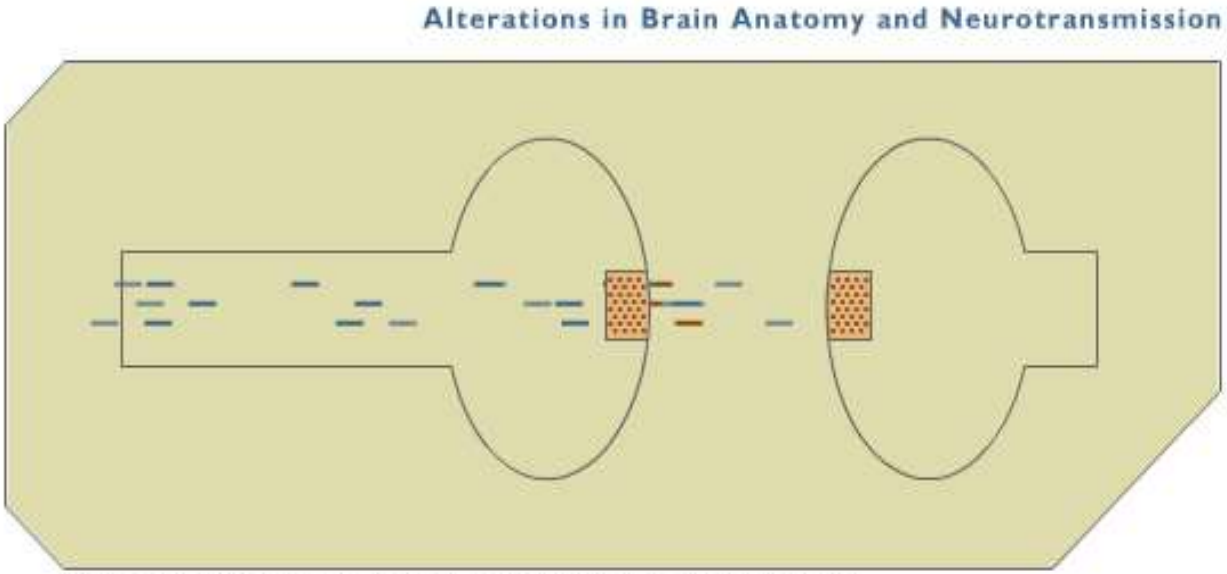


Fluoro-2-deoxy-D-glucose (FDG) positron-emission tomography has been used to examine cerebral metabolism, which is a measure of neural activity.

Adults with ADHD show decreased cerebral metabolism compared with controls. Similar results were observed in adolescent girls with ADHD.

Zametkin, AJ et al. *NEJM*, 1990: 323(20) 1361-66.

ADHD-Etiology



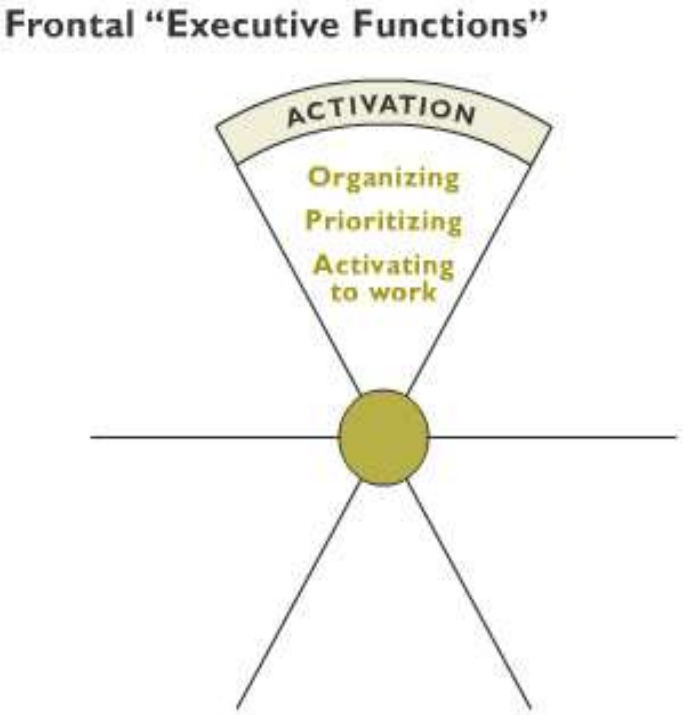
Swanson J, Castellanos FX, et al. *Current Opinion in Neurobiology*. 1998. 8:263-271.

ADHD-Etiology

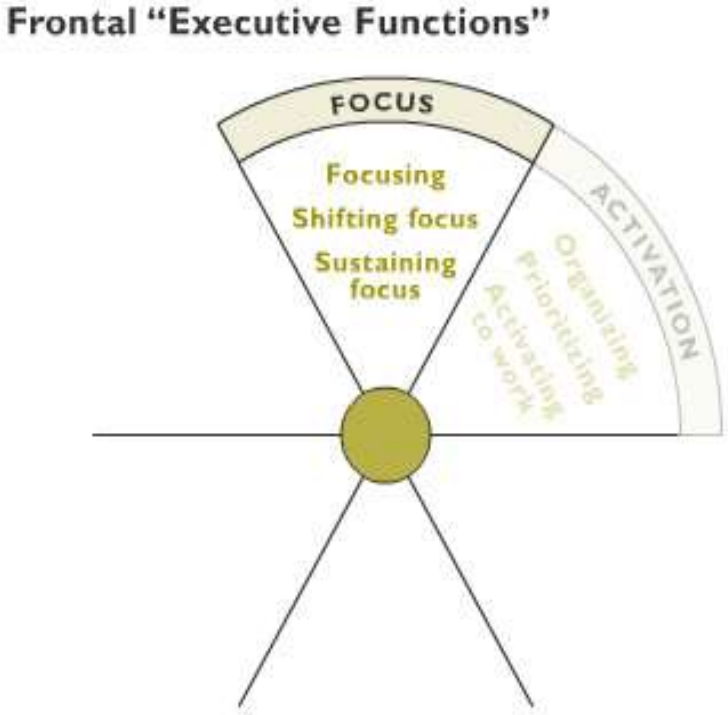
Neurobiochemical abnormalities

- Decreased dopamine turnover
- Dysregulation of inhibitory frontocortical activity (predominantly noradrenergic) on striatal structures (predominantly dopaminergic)

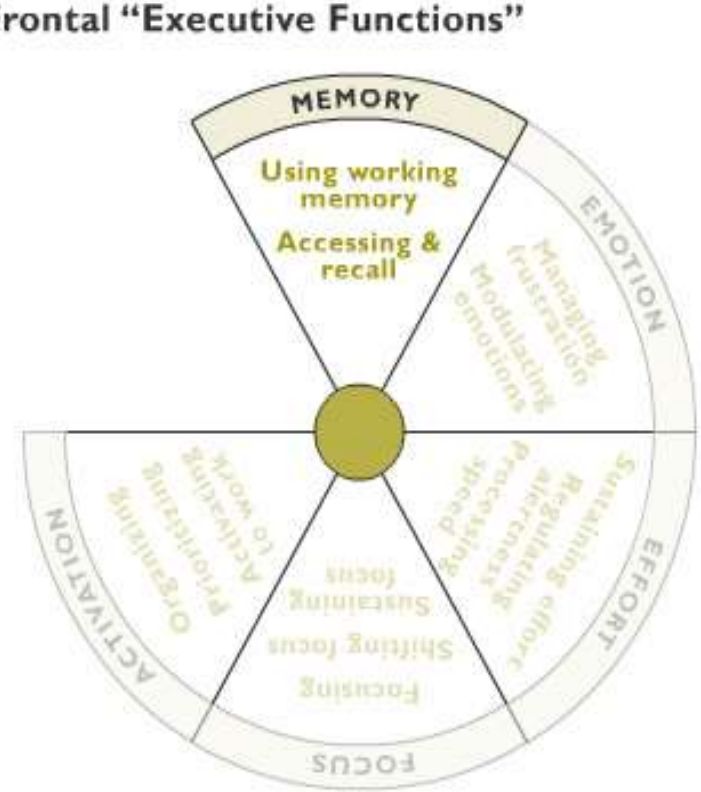
ADHD-Etiology



ADHD-Etiology



ADHD-Etiology



ADHD-Etiology

Genes

↓

Structural and biochemical changes

↓

Deficits in executive prefrontal mechanisms

↓

Difficulty inhibiting response

↓

Cognitive and behavioral symptoms

ADHD- Management

Multimodal approach!!!

Environmental and behavioral and management

Home

School

Professional services

ADHD- Management

Environmental and behavioral and management

- Reducing stimulation (limiting distracting influences)
- Maintaining a regular and predictable daily schedule
- Structured classroom setting
- Specific teaching techniques (tasks in the single, small increments, pauses)
- Limiting (but don't eliminating) the number of choices to 2-3 options

ADHD- Management

Environmental and behavioral and management

- Targeted behavior modification
  - positive reinforcement
  - firm, nonpunitive limit setting
  - rules and consequences !

ADHD- Management

Pharmacotherapy

1. **Psychostimulants**

- Methylphenidate (Ritalin, Concerta)
- Dextroamphetamine (Dexedrine)
- Pemoline (Cylert)
- Mixed preparation of amphetamine salts (Adderall)

ADHD- Management

Pharmacotherapy

2. Antidepressants

- SNRI- Atomoxetine (Strattera)
- Bupropione

ADHD- Management

Pharmacotherapy

- Improvement in 80 % of children with ASDHD.
- More successful that non-medical interventions.
- Improvement in academic performance.
- Over-prescribed
- Potential for abuse.
- Possible side effects.

ADHD- Management

Barkley's Basic 10

1. Give more immediate feedback and consequences
2. Give more frequent feedback
3. Use more powerful consequences
4. Use incentives before punishment
5. Strive for consistency
6. Act, don't yak
7. Plan ahead for problem situations
8. Keep a disability perspective
9. Don't personalize adolescent's problems or disorder
10. Practice forgiveness

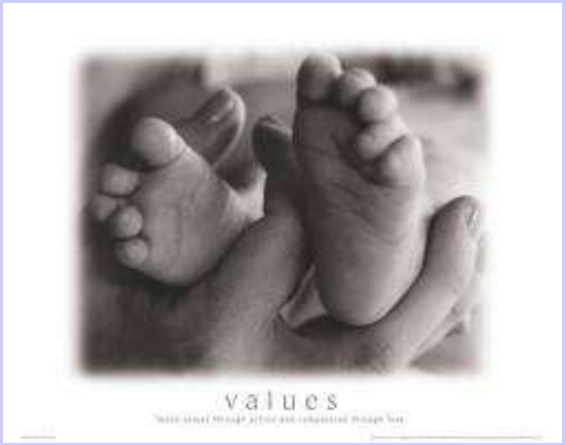
Barkley RA. *Attention-Deficit/Hyperactivity Disorder: A Handbook for Diagnosis and Treatment, 2nd Edition.* 1998: 413-457.

ADHD- Management

Tips for ADHD management

- Be patient
- Be persistent
- Be understanding
- Most importantly, remember to differentiate the behaviors from the child
- Bad behaviors **<u>are not</u>** synonymous with a bad child

Separation anxiety disorder (SAD)



The major task of infancy period:

Forming an **ATTACHMENT** to the

primary caregiver

SAD

Attachement

Ability to maintain the mental image of an object : (“object permanence”)

Separation anxiety

SAD - DSM V diagnostic criteria

A. Developmentally inappropriate and excessive fear or anxiety concerning separation from those to whom the individual is attached, as evidenced by at least three of the following:

1. Recurrent excessive distress when anticipating or experiencing separation from home or major attachment figures
2. Persistent and excessive worry about losing major attachment figures or about possible harm to them, such as illness, injury, disasters or death
3. Persistent and excessive worry about experiencing an untoward event that causes separation from a major attachment figure (getting lost, being kidnapped, having an accident, becoming ill)

SAD - DSM V diagnostic criteria

4. Persistent reluctance or refusal to go out, away from home, to school, to work, or elsewhere because of fear of separation

5. Persistently and excessive fear or reluctance about being alone or without major attachment figures at home or in other settings

6 .Persistent reluctance or refusal sleep away from home or to go to sleep without being near a major attachment figure or to sleep away from home

7. Repeated nightmares involving the theme of separation

8. Repeated complains of physical symptoms (headaches, stomach-aches, nausea, vomiting) when separation from major attachment figures occurs or is anticipated

SASD - DSM V diagnostic criteria

B. The fear, anxiety, or avoidance is persistent, lasting least 4 weeks in children and adoolescents and typically 6 months or more in adults

C. The disturbance causes clinically significant distress or impairment in social, academic (occupational), or other important areas of functioning

D. The disturbance is not better explained by another mental disorder, such as refusing to leave home in ASD, delusions or hallucinations concerning separation in psychotic disorders, refusal to go outside without a trusted companion in agoraphobia; worries about ill health or other harm befalling significant others in GASD, or concern of having an illness in illness anxiety disorder

SAD – Associated features

- Social withdrawal, apathy, sadness, difficulty concentrating
- Fears of animals, monsters, the dark, muggers, kidnappers, car accidents
- Concerns about death and dying
- Aggressive behaviors (anger, hitting out)
- Unusual perceptual experiences
- Somatic complaints
- School refusal (in 75 % of cases)

SAD-management

- Psychotherapy of the child

-behavioral therapy (desensitization, reinforcement of desired behaviors)

-cognitive behavioral therapy (for older children)

- Psychotherapy of parents (parental training, cognitive therapy)
- Antidepressants ???

SAD – Prevelance, Course and Outcome

- Prevelance of SAD : ~ 4% of children and young ASDolescents
- Typical course: with exacerbations and remissions
- May persist for many years
- May precede the development of Panic disorder with Agoraphobia

School refusal- main causes

- SAD (younger children)
- Other mental disorders: Specific learning disorders, specific phobias, social phobia, MDD, psychotic disorders, conduct disorder
- Problems at school: violence, teasing, drug abuse,conflicts with peers or teachers
- Parental attitudes and behaviors: anxious, controlling parents or too high parental expectations
- Parental mental disorders